AL-FARABI INTERNATIONAL CONGRESS ON APPLIED SCIENCES - II

May 2-4, 2021
"Nakhchivan" University, Azerbaijan

ABSTRACT BOOK

ISBN: 978-625-7898-41-6

Edited by
Assoc. Prof. Dr. Ali HAŞIMOV
Dr. Mehman ŞABANOV

"Nakhchivan" University

AL-FARABI INTERNATIONAL CONGRESS ON APPLIED SCIENCES - II

May 2-4, 2021 / Baku, Azerbaijan

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CONGRESS ID

"Nakhchivan" University

TITLE OF CONGRESS

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May 2-4, 2021

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THE NUMBER OF PAPERS BY FROM TURKEY: 73
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All applications have undergone a double-blind peer review process

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PHOTO GALLERY


Запись...
Вы просматриваете экран Wan Nadzri Osman
Настройки просмотра
Осталось: 09:14:14
Вид
UUM
Universiti Utara Malaysia
STUDY OF ACCEPTANCE AND READINESS OF FARMERS TOWARDS DRON TECHNOLOGY IN NORHTERN PENINSULAR OF MALAYSIA
Prepared by :
Dr Wan Nadzri Osman
Dr Faisal Zulhumadi
Assoc. Prof. Dr Mohd Najib Salleh
Wan Nadzri Osman
Включить звук
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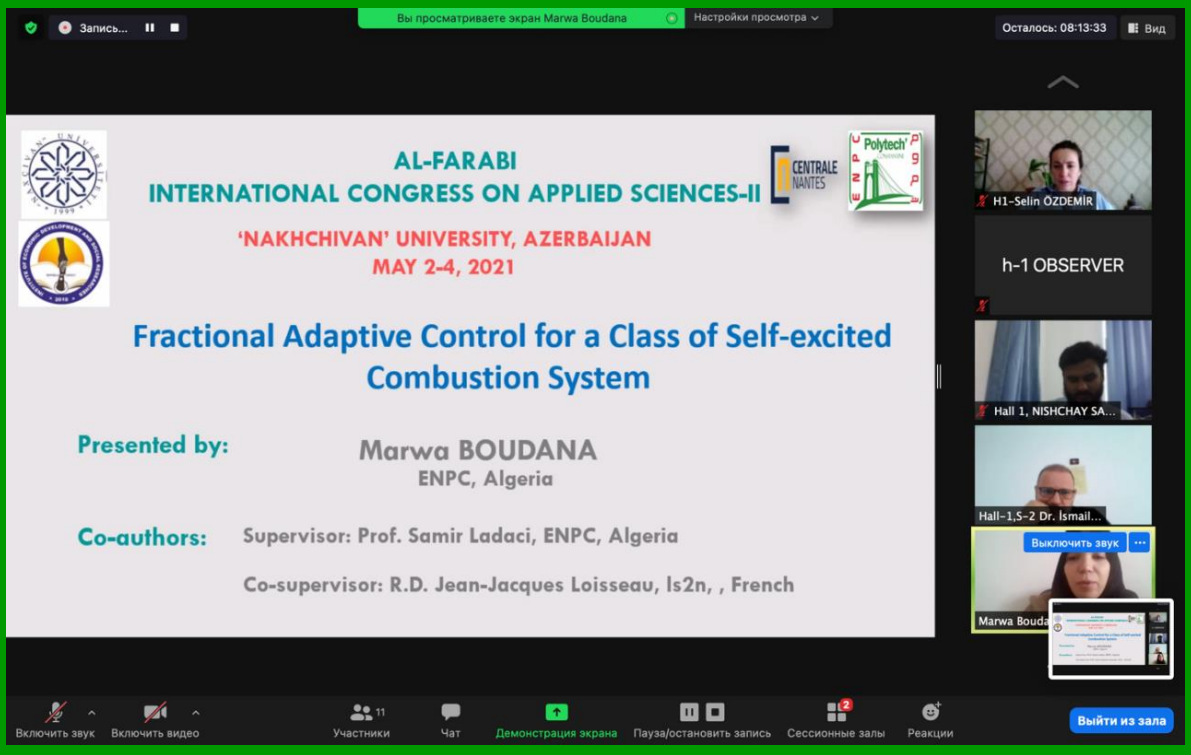
Участники
Чат
Демонстрация экрана
Пауза/остановить запись
Сессионные залы
Реакции
Выйти из зала

Species	2001-2005 Production (ton)	2006-2010 Production (ton)	2011-2015 Production (ton)	2016-2019 Production (ton)	Part (%)	Change (%)
Primary Vegetables	742 028 754	869 547 520	990 223 208	1 103 674 294	100	48
Melon	21 769 996	25 266 965	26 081 81(5	26 954 619	2.4	23
Watermelon	88 373 870	90 931 641	97 694 771	101 056 424	9.2	14
Cucumber and acur	42 893 407	57 040 826	73 250 618	83 655 799	7.6	95
Squash and pumpkin	19 558 836	21 736 734	24 595 296	24 954 871	2.3	27
Tomato	119 219 536	143 550 054	167 755 941	178 834 649	16.2	50
Pepper	23 656 849	28 136 154	31 638 608	36 676 590	3.3	55
Eggplant	29 952 303	39 610 006	48 334 814	53 405 674	4.8	78
Onion	57 854 868	74 102 946	86 604 850	97 611 303	8.8	68
Garlic	13 437 486	20 571 423	24 536 839	28 637 075	2.6	113
Shallot ve Green Onion	3 967 977	4 395 368	4 504 149	4 635 205	0.4	16
Leek and Other *Allium* spp.	1 744 438	2 079 678	2 170 461	2 169 061	0.2	24
Cabbage and other *Brassica*	67 847 140	64 631 794	69 542 433	69 956 692	6.3	3
Cauliflower and broccoli	17 114 034	20 036 859	23 364 848	26 035 023	2.4	52
Turnip and Carrot	24 890 483	32 598 402	38 170 839	42 631 726	3.9	71
Green bean and cowpea	12 925 065	18 619 322	21 596 756	25 718 982	2.3	99
Green pea	12 434 995	15 030 187	17 604 360	20 850 897	1.9	67
Broad bean	1 348 540	1 600 136	1 547 098	1 574 854	0.1	17
Artichoke	1 063 852	1 484 433	1 556 077	1 576 589	0.1	48
Lettuce and Chicory	21 141 073	24 003 591	25 406 497	28 400 067	2.6	34
Asparagus	6 063 608	7 218 460	8 204 520	9 171 380	0.8	51
Okra	5 697 133	6 873 905	9 302 736	9 371 969	0.9	65
Spinach	12 338 562	18 015 104	23 288 440	28 365 892	2.6	129
Mushroom	5 282 736	6 968 269	9 906 680	11 132 645	1.0	110
Sweet Corn	10 354 458	10 753 460	11 018 440	10 045 302	0.9	-3


Запись...
Осталось: 09:23:35
h-1 OBSERVER
Hall-1,S-2 Dr. İsmail TOPCU
Əli Həşimov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Вы просматриваете экран Marwa Boudana
Настройки просмотра
Осталось: 08:13:33
Вид
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'NAKHCHIVAN' UNIVERSITY, AZERBAIJAN
MAY 2-4, 2021
Fractional Adaptive Control for a Class of Self-excited Combustion System
Presented by:
Marwa BOUDANA
ENPC, Algeria
Co-authors:
Supervisor: Prof. Samir Ladaci, ENPC, Algeria
Co-supervisor: R.D. Jean-Jacques Loisseau, Is2n, , French
H1-Selin ÖZDEMİR
h-1 OBSERVER
Hall 1, NISHCHAY SA...
Hall-1,S-2 Dr. İsmail...
Выключить звук
Marwa Bouda
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Реакции
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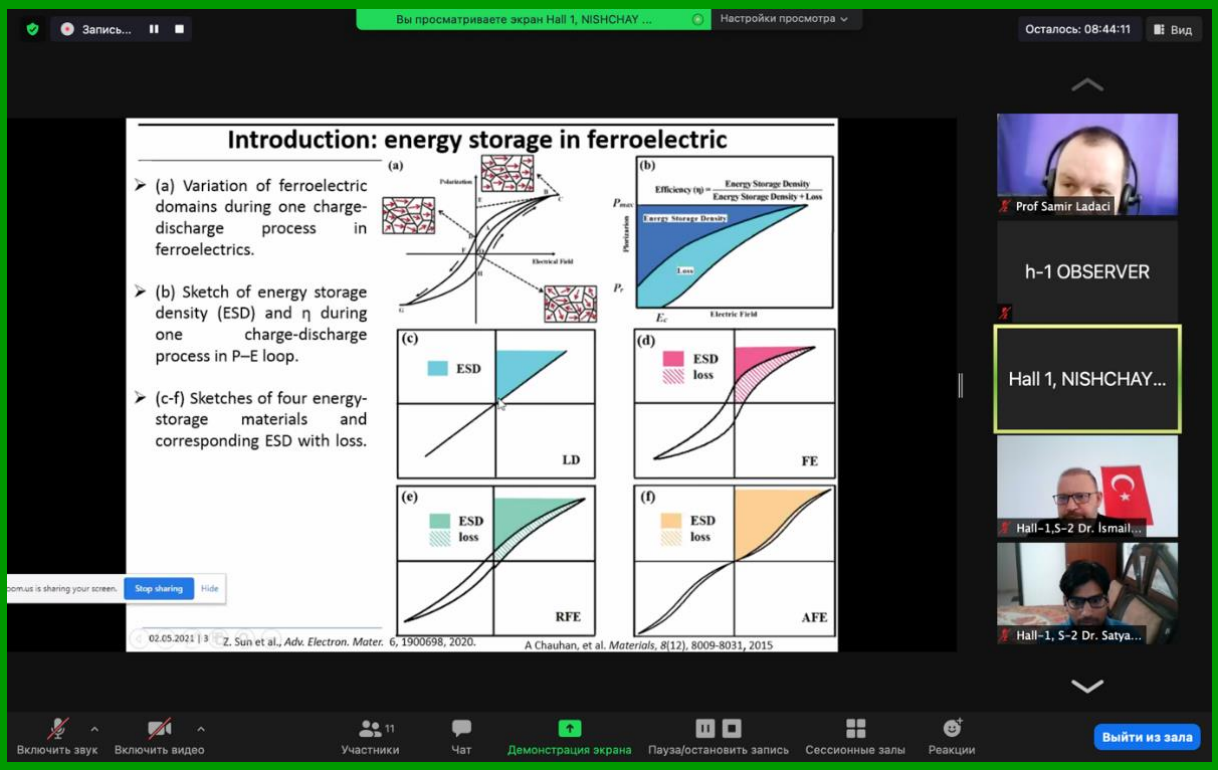
Запись...
Вы просматриваете экран Hall 1, NISHCHAY ...
Настройки просмотра
Осталось: 08:44:11
Вид
Introduction: energy storage in ferroelectric
(a) Variation of ferroelectric domains during one charge-discharge process in ferroelectrics.
(b) Sketch of energy storage density (ESD) and η during one charge-discharge process in P–E loop.
(c-f) Sketches of four energy-storage materials and corresponding ESD with loss.
ESD
LD
ESD loss
FE
RFE
AFE
Z. Sun et al., Adv. Electron. Mater. 6, 1900698, 2020.
A Chauhan, et al. Materials, 8(12), 8009-8031, 2015
Stop sharing
Hide
Prof Samir Ladaci
h-1 OBSERVER
Hall 1, NISHCHAY...
Hall-1,S-2 Dr. Ismail...
Hall-1, S-2 Dr. Satya...
Включить звук
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AL-FARABI
INTERNATIONAL CONGRESS ON APPLIED SCIENCES - II

'NAKHCHIVAN' UNIVERSITY, AZERBAIJAN
MAY 2-4, 2021

CONGRESS PROGRAM

zoom

Meeting ID: 827 4716 1293
Passcode: 134299

Önəmli, Xahiş edirik diqqətlə oxuyasınız

- Konfransımızda Yazı Qaydalarına uyğun göndərilmiş və elmi komissiyadan keçən məruzələr üçün online (video konfran şəklində) çıxış imkanı veriləcəkdir.
- Online məruzə üçün **https://zoom.us/join** linki üzərindən daxil olaraq "Meeting ID or Personal Link Name" yerinə ID nömrəsinə daxil olaraq konfransa qoşula bilərsiniz.
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- Hər iclasda məruzəçilər məruzə saatından 5 dəqiqə əvvəl konfransa bağlanmış olmaları lazımdır
- Bütün konfrans iştirakçıları canlı qoşularaq bütün məruzələri izləyə bilərlər.
- Moderator – iclasdakı çıxış və elmi diskussiyalar (sual-cavab) hissəsindən məsuldurlar

Nəzər Yetirilmasi Vaxib Olanlar – TEXNİKİ BİLGİLƏR

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- ZOOM-da ekran paylaşma xüsusiyyətini bacarmalısınız
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Önemli, Dikkatle Okuyunuz Lütfen

- Kongremizde Yazım Kurallarına uygun gönderilmiş ve bilim kurulundan geçen bildiriler için online (video konferans sistemi üzerinden) sunum imkanı sağlanmıştır.
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- Zoom uygulaması kaydolmadan kullanılabilir.
- Uygulama tablet, telefon ve PC'lerde çalışıyor.
- Her oturumdaki sunucular, sunum saatinden 5 dk öncesinde oturuma bağlanmış olmaları gerekmektedir.
- Tüm kongre katılımcıları canlı bağlanarak tüm oturumları dinleyebilir.
- Moderatör – oturumdaki sunum ve bilimsel tartışma (soru-cevap) kısmından sorumludur.

Dikkat Edilmesi Gerekenler- TEKNİK BİLGİLER

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- Zoom'da ekran paylaşma özelliğine kullanabilmelisiniz.
- Kabul edilen bildiri sahiplerinin mail adreslerine Zoom uygulamasında oluşturduğumuz oturuma ait ID numarası gönderilecektir.
- Katılım belgeleri kongre sonunda tarafınıza pdf olarak gönderilecektir
- Kongre programında yer ve saat değişikliği gibi talepler dikkate alınmayacaktır

IMPORTANT, PLEASE READ CAREFULLY

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- The Zoom application is free and no need to create an account.
- The Zoom application can be used without registration.
- The application works on tablets, phones and PCs.
- The participant must be connected to the session 5 minutes before the presentation time.
- All congress participants can connect live and listen to all sessions.
- Moderator is responsible for the presentation and scientific discussion (question-answer) section of the session.

Points to Take into Consideration - TECHNICAL INFORMATION

- Make sure your computer has a microphone and is working.
- You should be able to use screen sharing feature in Zoom.
- Attendance certificates will be sent to you as pdf at the end of the congress.
- Requests such as change of place and time will not be taken into consideration in the congress program.

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exp. Hall-1, Seda BEYAZ

-Opening Speech-

Date: 02.05.2021

Baku Time: 10:30-11:00	Ankara Time: 09:30-10:00

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Chairman of the Institute of Economic Development and Social Researches (IKSAD)

Conference Chairman
Prof. Dr. Nurlana ALİYEVA
Rector of "Nakhchivan" University

Chairman of the Organizing Committee
Dr. Huseyn BAĞIRSOYLU
Vice Rector of "Nakhchivan" University

DATE: 02.05.2021	
BAKU TIME: 11:00-13:30	ANKARA TIME: 10:00-12:30
HALL-1	SESSION-1

Moderator: Assist. Prof. Dr. İpek ADA ALVER

AUTORS	COUNTRY	TITLE
Arda Alara ULUDAG Asst. Prof. Elif Ozlem ARSLAN Prof. Dr. Ayten KIMIRAN	*Istanbul University, Turkey*	INVESTIGATION OF THE PRESENCE OF Listeria monocytogenes IN MINCED MEAT SAMPLES SOLD IN ISTANBUL PROVINCE
Soukaina Bouamrane Ayoub Khaldan Halima Hajji Hamid Maghat Mohammed Aziz Ajana Mohammed Bouachrine Tahar Lakhlifi	*Moulay Ismail University, Morocco*	ANTIFUNGAL ACTIVITY OF TRIAZOLE DERIVATIVES STUDY BY 3D-QSAR, MOLECULAR DOCKING AND ADMET PROPERTIES
Assist. Prof. Dr. İpek ADA ALVER Prof. Dr. Ayten KİMİRAN	*Istanbul University, Turkey*	HUWA-SAN TR50 BİYOSİTİNİN Legionella pneumophila BAKTERİLERİNE ETKİSİNİN FARKLI YÖNTEMLERLE BELİRLENMESİ
Hayedeh Gorjian Nader Ghaffari Khaligh Zeynab Raftani Amiri	*Sari Agricultural Sciences and Natural Resources University (Iran) University of Malaya (Malaysia)*	INFLUENCE OF NANOVESICLE TYPE, NANOLIPOSOME AND NANONIOSOME, ON ANTIOXIDANT AND ANTIMICROBIAL ACTIVITIES OF ENCAPSULATED MYRTLE EXTRACT: A COMPARATIVE STUDY
Vasyyi Zhmurko Olha Avksentieva Yevheniia Batuieva	*V. N. Karazin Kharkiv National University, Kharkiv, (Ukraine)*	EFFECT OF PHYTOCHROMES ACTIVATION ON PHYSIOLOGICAL AND BIOCHEMICAL PROCESSES IN PLANTS WITH DIFFERENT TYPES OF DEVELOPMENT
Sunday Alagba Obazi Cosmas Chibugo Ukwueze Esdras Abrewa Remilokoun Obossou Anthonia Ngozi Asadu	*University of Nigeria*	AGRICULTURAL INFORMATION SEEKING BEHAVIOUR OF COCOYAM FARMERS: A CASE STUDY FROM NSUKKA AGRICULTURAL ZONE IN NIGERIA
Nino Chkhartishvili Nino Abesadze	*Georgian Technical University*	POTENTIAL OF GEORGIAN ABORIGINAL GRAPES IN ENOLOGY
Assoc. Prof. Dr. CARA Serghei	*Comrat State University (Moldova)*	THE INFLUENCE OF THE DIFFERENT QUALITY OF GRAPE BUSHES ON THEIR PRODUCTIVITY IN THE AGRO-ECOLOGICAL CONDITIONS OF ATU GAGAUZIA
Nasir Rasool	*Government College University Faisalabad, Faisalabad (Pakistan)*	ARYLATION OF THIOPHENE BASED MOLECULES VIA SUZUKI MIYAURA REACTION IS VERSATILE TOOLS
Pușnei Alexandru	*Testemitanu State University of Medicine and Pharmacy*	PRENATAL IMAGING DIAGNOSIS OF COARCTATION OF AORTA

DATE: 02.05.2021	
BAKU TIME: 11:00-13:30	ANKARA TIME: 10:00-12:30
HALL-2	SESSION-1

Moderator: Lect. Dr. Gözde ÖZTAN

AUTORS	COUNTRY	TITLE
Assist. Prof. Dr. Zafer Cengiz ER **Assist. Prof. Dr. Sameh ALAGHA**	*Bozok University, Turkey*	VENÖZ YETMEZLİĞİ TEDAVİSİNDE ENDO VENÖZ LAZER ABLASYON; VAKA SERİSİ
Fakhar ud Din **Zakir Ali** **Humzah Jamshaid** **Hadeeqa Nazish** **Husna Khalid** **Basalat Imran** **Adnan Anjum** **Ijaz ul Haq**	*Quaid-i-Azam University, Pakistan*	ANTITUMOR POTENTIAL OF MILTEFOSINE-LOADED NANOSTRUCTURED LIPID CARRIERS FOR THE TREATMENT OF BREAST CANCER
Lect. Dr. Gözde ÖZTAN	*Istanbul University*	KRONİK LENFOSİTİK LÖSEMİ İLE İLİŞKİLİ PATOJENİK VARYANTLARIN TESPİTİ
Neli Vilhelmova-Ilieva **Georgi Atanasov** **Lora Simeonova** **Lili Dobreva** **Kapka Mancheva** **Madlena Trepechova** **Kristina Kostova** **Svetla Danova**	*Bulgarian Academy of Sciences Sofia*	IN VITRO INHIBITION OF HERPES SIMPLEX VIRUS TYPE -1 REPLICATION BY LACTOBACILLUS POSTMETABOLITES
K.A. Kim **G.U. Begimova**	*S.D. Asfendiyarov Kazakh National Medical University, Kazakhstan Engineering-Technological University*	INCLUSION COMPLEXES WITH B-CYCLODEXTRIN AND THEIR USE FOR MEDICAL PURPOSES
Assist. Prof. Dr.Zafer Cengiz ER **Assist. Prof. Dr.Sameh ALAGHA**	*Bozok University, Turkey*	VENA SEFANA MAGNA ABLASYONUNDA RADYOFREKANS ILE CYANOACRYLAT EMBOLIZASYONU TEDAVILERININ KARŞILAŞTIRILMASI
Nurgazieva Guldana Yermychamedovna **assist. prof. PhD. Erkinbekova Gulnara Bekbosynovna** **Assoc. Prof. PhD.Temirgalieva Elmira Maratovna** **Assist. Nazarbekova Dinara Zhunusbekovna**	*S.D.Asfendiyarov KazNMU, Kazakhstan*	CLINICAL AND PHARMACOLOGICAL ANALYSIS OF TREATMENT IN THE ELDERLY AND LONG-LIVED IN A HOSPITAL
Dr. Nagehan CAN	*Torbali State Hospital*	KATARAKT CERRAHİSİNDE PROFİLAKTİK FARKLI GRUP ANTİBİYOTİKLERİN KULLANIMININ DEĞERLENDİRİLMESİ
M. Zakeri **J. Faraji** **E. Baradari**	*University of Tabriz (Iran)*	EVALUATION OF THE EFFECT OF A431 EPIDERMIS SKIN CANCER CELL STIFFNESS USING ATOMIC FORCE MICROSCOPY
Assoc. Prof. Dr. Sataev A. **Ph.D. Temirgalieva E.M.** **Akimniyazova B.B.** **S. Asfendiyarova**	*КазНМУ*	THE MOST COMMON MICROORGANISMS IN PATIENTS WITH POST-INTUBATION TRACHEAL STENOSIS AND THEIR SENSITIVITY TO ANTIBACTERIAL DRUGS
G.U. Begimova **K.A. Kim** **D.A. Berillo**	*Asfendyarov Kazakh National Medical University (Kazakhistan) Kazakhstan Engineering-Technological University*	DEVELOPMENT OF METHODS FOR THE PREPARATION OF HYDROGELS WITH A COMPLEX OF SULFADIMEDINE INCLUSION WITH B-CYCLODEXTRIN

DATE: 02.05.2021		
BAKU TIME: 14:00-16:30		ANKARA TIME: 13:00-15:30
HALL-1		SESSION-2
Moderator: Dr. İsmail TOPCU		
AUTORS	COUNTRY	TITLE
Assist. Prof. Dr. İsmail TOPCU	*Alanya Alaaddin Keykubat University, Turkey*	COVID-19 PANDEMİ SÜRECİNDE EKLEMELİ İMALAT YÖNTEMİ İLEÜRETİLEN BİYO SİPERLİKLERİN MEKANİK ÖZELLİKLERİNİN İNCELENMESİ
Narin KARABULUT Research Assist. Yagmur OLMEZ Assoc. Prof. Gonca OZMEN KOCA	*Firat University, Turkey*	WAVE HEIGHT ESTIMATION WITH FLOW SPEED BY USING ELM AND ANN METHODS
Stanislav Shvets	*Sumy State University*	"UNIVERSAL PARAMETER CALCULATION METHOD METAL CUTTING MODES"
Assist. Prof. Dr. İsmail TOPCU	*Alanya Alaaddin Keykubat University, Turkey*	COVID-19 PANDEMİ SÜRECİNDE İHTİYAÇ DUYULAN PLA BİYOSİPERLİKLERİN EKLEMELİ İMALAT YÖNTEMİ İLE ÜRETİMİ
Dr. Satyanarayan Patel	*Indian Institute of Technology Indore*	Stress effect on energy storage properties of BaTiO3 bulk ceramics
Selin ÖZDEMİR İrem FİNCAN Özgür ÇOPKUR Mustafa BİRİCİKÖZCAN	*Sanem Plastik Tasarım Merkezi*	"ALEV GECİKTİRİCİ KATKI MADDELERİNİN PVC DUVAR KAPLAMALARI ÜZERİNDEKİ ETKİLERİNİN İNCELENMESİ"
Irakli Mumladze	*Georgian Technical University*	MODERN CONSTRUCTION SOLUTION OF FRICTION DIAPHRAGM FOR MONOLITHIC CONCRETE BUILDINGS
Igor V. NAUMEYKO	*Kharkov National University of Radioelectronics (Ukraine)*	RESEARCH AND CONTROL OF PROTECTED INDUSTRIAL SYSTEMS
Marwa Boudana Samir Ladaci Jean Jacques Loiseau	*National Polytechnic School of Constantine (Algeria) Mentouri University (Algeria) LS2N-CNRS, Ecole Centrale de Nantes (France)*	FRACTIONAL ADAPTIVE CONTROL OF A SELF-EXCITED COMBUSTION SYSTEM
Hanane Boumaza Salim Belhadi Mohamed Athmane Yallese Abdelkrim Haddad Kouahla Ilyas	*May 8th 1945 University (Algeria)*	DRY TURNING OPTIMIZATION OF INCONEL 718 USING CERAMIC COMPOSITE CUTTING TOOL BASED ON TAGUCHI AND TOPSIS APPROACHES

DATE: 02.05.2021	
BAKU TIME: 14:00-16:30	ANKARA TIME: 13:00-15:30
HALL-2	SESSION-2

Moderator: Prof. Dr. Anand K. Tyagi

AUTORS	COUNTRY	TITLE
Assist. Prof. Dr.Burcu AKÇA Assoc. Prof. Dr. Bekir GÜRBULAK Prof. Dr. Salih Zeki ERZENEOĞLU	*Ardahan University Atatürk University*	TlGaSe 2 , TlInGaSe 2 , Ga 0.9 In 0.1 Se, GaTe 0.4 Se 0.6 , GaTe 0.8 Se 0.2 YARIİLETKENLERİNİN TRANSMİSYON KATSAYILARININ ÖLÇÜLMESİ
Assoc. Prof. Dr. Abdullah GÖKTAŞ Assist. Prof. Dr.Sultan GÖKTAŞ	*Harran University*	METAL KATKILI ZNO NANOYAPILARIN FOTOKATALİTİK ÖZELLİKLERİ
Nijat Abbasov Chichak Abbasova	*Baku State University National Nuclear Research Center*	INTERACTIONS OF NEUTRONS WITH MATTER
Rutuja Mandavkar Rakesh Kulkarni Shusen Lin Sanchaya Pandit Sundar Kunwar Jihoon Lee	*Kwangwoon University (Korea)*	DEVELOPMENT OF SERS PLATFORM FOR THE DETECTION OF RHODAMINE 6G BY UTILIZING GRAPHENE QUANTUM DOTS ON HYBRID CORE-SHELL PD@AG NPS
Assoc. Prof. Dr. Abdullah GÖKTAŞ	*Harran University*	SOL-JEL VE MAGNETRON PÜSKÜRTME TEKNİKLERİ İLE ÜRETİLEN FE KATKILI ZNO İNCE FİLMLERİNİN YAPISAL VE OPTİKSEL ÖZELLİKLERİ
Raisa R. Hakhiyeva	*Institute of Radiation Problems of ANAS (Azerbaijan)*	BAND STRUCTURE INVESTIGATION OF TIC NANOPARTICLES USING FTIR SPECTROSCOPY
Prof. Dr. Anand K. Tyagi	*SBS State University (India)*	CATION DEFICIENT DIELECTRIC RESONATOR PEROVSKITE ELECTROCERAMICS
Farhat Hussain Dr. Muhammad SAEED	*Government College University Faisalabad (Pakistan)*	BIOSYNTHESIS of ZnO and Ag@ZnO CATALYSTS ASSISTED BY CALOTROPIS GIGANTEA LEAVES FOR BREAKDOWN OF RHODAMINE B DYE IN AQUEOUS MEDIUM
Aamir IQBAL Dr. Muhammad SAEED	*Government College University Faisalabad (Pakistan)*	CATALYTIC PHOTODEGRADATION STUDIES OF CRYSTAL VIOLET DYE BY GREEN SYNTHESIZED Co 3 O 4 AND Ag-Co 3 O 4 ASSISTED HELIANTHUS ANNUUS

DATE: 02.05.2021	
BAKU TIME: 17:00-19:30	ANKARA TIME: 16:00-18:30
HALL-1	SESSION-3

Moderator: Assist. Prof. Dr. Fatma BİRGİLİ

AUTORS	COUNTRY	TITLE
Şenay ÇATAK Nursel ŞAHİN Gamze AKBULUT	*Aydin Adnan Menderes University Bandırma Onyedi Eylül University Gazi University*	COVID-19 PANDEMİSİNDE BİREYLERİN BESLENME ALIŞKANLIKLARININ MENTAL SAĞLIĞA ETKİLERİNİN DEĞERLENDİRİLMESİ
Assist. Prof. Dr.Fatma BİRGİLİ Prof. Dr. Nezihe BULUT UĞURLU	*Muğla Sıtkı Koçman University*	COVID-19 PANDEMI SÜRECINDE SOSYAL DESTEK KAPANIŞLARI VE BUNLARIN YAŞLILAR VE BAKICILAR ÜZERINDEKI ETKILERI: OLGU SUNUMU
Lect. Tuğçe BULMUŞ TÜCCAR Prof. Dr. Gamze AKBULUT	*Yüksek İhtisas University Gazi University*	"FARKLI DİYET ÖRÜNTÜLERİNİN POSTPRANDİYAL DİNLENME ENERJİ HARCAMASI ÜZERİNE ETKİLERİNİN DEĞERLENDİRİLMESİ"
Meryem OTU Prof. Dr. Şerife KARAGÖZOĞLU	*Sivas Cumhuriyet University*	TERAPÖTİK REJİME UYUMSUZLUK VE HASTALIK ALGISI
Nursel ŞAHİN Şenay ÇATAK Gamze AKBULUT	*Bandırma Onyedi Eylül University Aydın Adnan Menderes University Gazi University*	COVID-19 DÖNEMİNDE YETİŞKİN BİREYLERDE DİYETLE ALINAN SU MİKTARININ VE FİZİKSEL AKTİVİTE DURUMUNUN DEĞERLENDİRİLMESİ
Assist. Prof. Dr.Emine Gülçeri GÜLEÇ PEKER	*Giresun University i*	DİYABETİK YARA İYİLEŞMESİNDE NİTRİK OKSİT TERAPİSİ
Prof. Dr. Gamze AKBULUT Şule GÜL	*Gazi University*	DEPRESYON VE UYKU KALİTESİNİN BESLENME DURUMU ÜZERİNE ETKİSİ
Dildabekova L. A., Alikhanov H. B. Rametova B. A		SAVE YOURSELF AND SAVE OTHERS (PANDEMIC) COVID-19 CORONAVIRUS
Assist. Prof. Dr.Fatma BİRGİLİ Prof. Dr. Nezihe BULUT UĞURLU	*Muğla Sıtkı Koçman University*	YOĞUN BAKIM ÜNITESINDE COVID-19 POZITIF HASTALARLA ÇALIŞAN HEMŞIRENIN DENEYIMLERI: OLGU SUNUMU
PhD. Seda BEYAZ Assoc. Prof. Abdullah ASLAN Assoc. Prof. Can Ali AGCA Res. Assist. Ozlem GOK Prof. Dr. Ibrahim Hanifi Ozercan	*Firat University Bingol University, Turkey*	BIOCHEMICAL AND MOLECULAR BIOLOGICAL INVESTIGATIONS OF THE PROTECTIVE EFFECTS OF FULLEREN C60 NANOPARTICLE AGAINST BREAST CANCER FORMED WITH DMBA (7,12-DIMETHYLBENZ [A] ANTHRACINE) IN RATS
ÖZLEM GÖK SEDA BEYAZ GÖZDE PARLAK İSMAİL CAN ABDULLAH ASLAN	*Firat University, Turkey*	INVESTIGATION OF THE EFFECTS OF ROYAL JELLY AGAINST PANCREAS DAMAGE WITH NF-κB AND TNF-ALPHA EXPRESSIONS

DATE: 02.05.2021	
BAKU TIME: 17:00-19:30	ANKARA TIME: 16:00-18:30
HALL-2	SESSION-3

Moderator: Dr. Enyew Amare Zereffa

AUTORS	COUNTRY	TITLE
Nilgün KUŞÇULU **İlyas KILINÇER**	*Kayseri University* *Erciyes University*	KOŞİNİL ÖZÜTLERİNİN DNA İLE ETKİLEŞİMİNİN AGAROZ JEL ELEKTROFOREZ YÖNTEMİNDE ARAŞTIRILMASI
Muhammad Yar	*COMSATS University*	HISTORY OF OUR WORKING ON DEOXY-SUGAR - DEVELOPING TECHNOLOGY THAT CAN TRANSLATE TO CLINIC
Shusen Lin **Rutuja Mandavkar** **Rakesh Kulkarni** **Sanchaya Pandit** **Sundar Kunwar** **Ming-Yu Li** **Jihoon Lee**	*Kwangwoon University, South Korea*	HIGH-PERFORMANCE ULTRAVIOLET PHOTODETECTOR BASED ON VERTICAL HYBRID STRUCTURE: GQD, TIO 2 AND PLASMONIC PDAG NANOPARTICLES
Dr. Enyew Amare Zereffa	*Adama Science and Technology University, Ethiopia*	CLAY CERAMİC FİLTER FOR WATER TREATMENT
Dr. Abdurrahman AKDAĞ	*Harran University*	ANTICORROSION BEHAVIOUR OF POLY(N-ETHYLANILINE) FILM ON ZNFE PLATED CARBON STEEL
Dr. Abdurrahman AKDAĞ	*Harran University*	POLY(ANILINE-CO-O-ANISIDINE-N-METHYLPYRROLE)-TIO 2 NANOCOPOSITE COATING ON CARBON STEEL
Ayoub Khaldan **Soukaina Bouamrane** **Reda El-mernissi** **Tahar Lakhlifi** **Abdelouahid Sbai** **Mohammed Bouachrine**	*Moulay Ismail University, Morocco*	IN-SILICO DESIGN OF NEW A-GLUCOSIDASE INHIBITORS THROUGH 3D-QSAR STUDY, MOLECULAR DOCKING MODELING AND ADMET ANALYSIS
Dr. Özgür YILMAZ	*Mersin University*	N,N-DİMETİLANİLİN TÜREVLERİNİN YENİ BİR YÖNTEM İLE N-DEMETİLASYONU
Muhammad UMAIR UR REHMAN **Dr. Muhammad SAEED**	*Government College University Faisalabad (Pakistan)*	SYNTHESIS AND CHARACTERIZATION OF BINARY COMPOSITE OF ZnO-TiO 2 FOR THE PHOTODEGRADATION OF METHYL ORANGE

DATE: 03.05.2021	
BAKU TIME: 11:00-13:30	ANKARA TIME: 10:00-12:30
HALL-1	SESSION-1

Moderator: Assoc. Prof. Dr. Burcu TUNCER

AUTORS	COUNTRY	TITLE
Assist. Prof. Dr. Nizam Mustafa NİZAMLIOĞLU **Kamile BAYRAK**	*Karamanoğlu Mehmetbey University*	MEYVE SULARINDA ASİTLİK VE ACILIK GİDERME
Assoc. Prof. Dr. Tugay AYAŞAN **Fatma GÜNDÜZ** **Assoc. Prof. Dr. Köksal KARADAŞ** **Assist. Prof. Dr. Behlül SEVİM**	*Osmaniye Korkut Ata University* *Osmaniye Korkut Ata University* *Iğdır University* *Aksaray University*	NOHUT GEVENİNİN (ASTRAGALUS CICER L.) HAYVANCILIKTA KULLANIMI ÜZERİNE YETİŞTİRİCİ GÖRÜŞLERİ: ADIYAMAN İLİ ÖRNEĞİ
Assoc. Prof. Dr. Selçuk Seçkin TUNCER	*Van Yüzüncü Yıl University*	SIĞIR ETİ ÜRETİMİ VE TİCARETİ
Okoro, John Chukwuma **Ali, Joshua Chukwuma** **Agwu Ekwe Agwu** **Samuel Chukwudi Chime**	*University of Nigeria,*	PALM OIL PROCESSING PRACTICES AMONG RURAL FAMERS IN IGBO-EZE NORTH LOCAL GOVERNMENT AREA OF ENUGU STATE, NIGERIA
Assoc. Prof. Dr. Burcu TUNCER	*Van Yüzüncü Yıl University*	DÜNYA YAŞ SEBZE ÜRETİMİ VE TİCARETİNİN MEVCUT DURUMU
Ganime Güliz KÖK **Assist. Prof. Dr.Sibel Bölek**	*University of Health Sciences*	"ÇÖREK OTU KULLANILARAK ELDE EDİLEN GIDALARIN SAĞLIK ÜZERİNE ETKİLERİNİN ARAŞTIRILMASI"
Gizem BEŞKEN TUĞCU	*Pamukkale University*	ÇOCUK SÜTLERİNDE PROTEİN DENATURASYONU VE FAZ AYRIMININ ÖNLENMESİ
Walaa DİRANİ **Ar. Gör. Sultan CAN** **Prof. Dr. Abuzer ÇELEKLİ** **Prof. Dr. Hüseyin BOZKURT**	*Gaziantep University*	ANTIOXIDANT AND ANTIMICROBIAL ACTIVITY OF PROPOLIS
Assoc. Prof. Nina CHAVDAR	*Transnistrian State University named after T.G. Shevchenko*	EXPANDING THE BOUNDARIES OF CULTIVATION OF THERMOPHILIC CROPS DUE TO CLIMATE WARMING
Noor AKHRAS **Ar. Gör. Sultan CAN** **Prof. Dr. Abuzer ÇELEKLİ** **Prof. Dr. Hüseyin BOZKURT**	*Gaziantep University*	PHENOLIC AND FLAVONOID CONTENT OF PROPOLIS
Ögr. Gör. Zeynep NALE	*Bandırma Onyedi Eylül University*	GIDA ATIKLARINDAN MİKROBİYAL FERMANTASYON YOLUYLA AROMA BİLEŞENLERİNİN ÜRETİLMESİ
Ifeoma Q. Anugwa **Mabel U. Dimelu** **Emmanuel C. Odoh**	*University of Nigeria Nsukka, Nigeria*	CONSUMERS' KNOWLEDGE ABOUT FOOD PRODUCTION SYSTEMS AND THEIR PURCHASING BEHAVIOUR IN THE UNIVERSITY OF NIGERIA NSUKKA COMMUNITY, ENUGU STATE, NIGERIA

DATE: 03.05.2021		
BAKU TIME: 11:00-13:30		ANKARA TIME: 10:00-12:30
HALL-2		SESSION-1

Moderator: Assoc. Prof. Atul Bhattad

AUTORS	COUNTRY	TITLE
Assoc. Prof. Dr. Deniz İzlen ÇİFÇİ Assoc. Prof. Dr. Ali Rıza DİNÇER Feriha KARACA	*Tekirdağ Namık Kemal University*	TEKSTİL ATIKSUYUNUN ADSORPSİYON VE MEMBRAN FİLTRASYON HİBRİT SİSTEMİ İLE ARITIMI
A. L. Vorontsova A. O. Kostikov N. D.Petrenko		Modeling of the geothermal energy mining with spent oil or gas borehole
Assoc. Prof. Dr. Jūratė Savickienė Prof. Dr. Astrida Miceikienė	*Vytautas Magnus University, Lithuania*	PREDICTING FARM PERFORMANCE: DO INDICATORS OF FARM ECONOMIC VIABILITY AND EFFICIENCY SIGNIFY OF PROBABILITY OF BANKRUPTCY?
Assoc. Prof. Atul Bhattad	*Koneru Lakshmaiah Educational Foundation, India*	EFFICIENCY CALCULATION OF HYDROGEN FUEL AIRCRAFT
Assoc. Prof. Dr. Deniz İzlen ÇİFÇİ Assoc. Prof. Dr. Ali Rıza DİNÇER Feriha KARACA	*Tekirdağ Namık Kemal University*	BİYOLOJİK OLARAK ARITILMIŞ TEKSTİL ATIKSUYUNDAN KOAGÜLASYON VE MEMBRAN FİLTRASYON YÖNTEMİ İLE SU GERİ KAZANIMI
Assoc. Prof. Dr. Emre Burcu ÖZKARAOVA Neşe ÖZDEMİR	*Ondokuz Mayıs University*	GEÇİRGEN ORGANİK BİYO-DUVAR SİSTEMİ
Mamedkhan M.I. Meruyert Beketayeva	*Al-Farabi Kazakh National University*	HYBRID METHODS IN ENERGY-PHYSICAL CONTROL OF THE ENVIRONMENT
Zemad Anjum Ojellah Dr. Syed Bilal Ahmed Zaidi	*Civil Engineering*	SELF-HEALING POTENTIAL OF ASPHALT MIXTURES AT DIFFERENT MICROWAVE HEATING TIMES
Hakan ERKEK Prof. Dr. Yusuf CALAYIR Musa YETKİN	*Fırat University*	DETERMINATION OF EXPERIMENTAL DYNAMIC PROPERTIES OF ADANA BÜYÜK SAAT TOWER
Dr. Faisal Zulhumadi Dr. Kamaruddin Radzuan Mazri Yaakob	*Universiti Utara Malaysia, School of Technology Management and Logistics (STML) (Malaysia)*	REGULATORY FRAMEWORK CHALLENGES AND BARRIERS: A QUALITATIVE APPROACH IN REVEALING THE EFFECTS ON MALAYSIAN NANOTECHNOLOGY INDUSTRY DEVELOPMENT
Assoc. Prof. Faik GÖKALP	*Kırıkkale University*	A THEORETICAL RESEARCH FOR THE ANTICANCER PROPERTIES OF VITAMIN D

DATE: 03.05.2021	
BAKU TIME: 14:00-16:30	ANKARA TIME: 13:00-15:30
HALL-1	SESSION-2

Moderator: Assoc. Prof. Shahram Najafzadeh

AUTORS	COUNTRY	TITLE
Assoc. Prof. Dr. Şuayip YÜZBAŞI Gamze YILDIRIM	*Akdeniz University*	"TEKİL OLARAK PERTÜRBE EDİLMİŞ DİFERANSİYEL DENKLEMLERİN NÜMERİK ÇÖZÜMLERİ İÇİN OPERASYONEL BİR MATRİS YÖNTEMİ"
Assist. Prof. Dr.Gamze Sarmaşık ABUR	*Muğla Sıtkı Koçman University*	"MATEMATİK, MÜZİK VE RENKLERDEKİ ESTETİK UYUMUN BİLGİSAYAR BİLİMLERİ İLE EĞİTİME YANSIMASI"
Liudmyla Hart Maria Feshchenko	*Oles Honchar Dnipro National University, Ukraine*	NUMERICAL ALGORITHMS FOR SOLVING A PROBLEM OF OPTIMAL CONTROL OF STATIONARY HEAT CONDUCTIVITY PROCESS
PhD. Monday Osagie Adenomon	*Nasarawa State University, Nijeria*	"STATISTICAL CAPACITY BUILDING AMONG STUDENTS AND USERS OF STATISTICS THROUGH DATA ETHICS AND DATA SCIENCE TECHNIQUES IN NORTH CENTRAL NIGERIA"
Gamze YILDIRIM Assoc. Prof. Dr. Şuayip YÜZBAŞI	*Akdeniz University*	"DEĞİŞKEN KATSAYILI LİNEER NÖTR GECİKMELİ DİFERANSİYEL DENKLEMLERİN YAKLAŞIK ÇÖZÜMÜ İÇİN BİR KOLLOKASYON YÖNTEMİ"
PhD. Monday Osagie Adenomon	*Nasarawa State University, Nijeria*	THE LONG RUN EFFECTS OF SOME MACROECONOMIC VARIABLES ON GDP OF FINANCIAL INSTITUTIONS IN NIGERIA USING AUTOREGRESSIVE DISTRIBUTED LAG AND FULLY MODIFIED ORDINARY LEAST SQUARES
Sani Isa Basant K. Jha	*Yobe State University Ahmadu Bello University Zaria, Nijeria*	GENERALIZED MHD COUETTE FLOW WITH HEAT TRANSFER IN AN ANNULI: THE RIEMANN-SUM APPROXIMATION APPROACH
Assoc. Prof. Shahram Najafzadeh	*Payame Noor University, Iran*	APPLICATIONS OF HOHLOV OPERATOR ON UNIVALENT FUNCTIONS WITH NEGATIVE COEFFICIENTS
Assoc. Prof. Dr. Şuayip YÜZBAŞI Gamze YILDIRIM	*Akdeniz University*	BERNSTEIN KOLLOKASYON YÖNTEMİ YARDIMIYLA SİNGÜLER PERTÜBE OLMUŞ GECİKMELİ DİFERANSİYEL DENKLEMLERİN YAKLAŞIK ÇÖZÜMLERİ
Lect. Dinçer ATASOY Dr. Öğretim Üyesi Hasan KARA	*Iğdır University*	MATEMATİK BÖLÜMÜNDE OKUYAN ÖĞRENCİLERİN TÜREV KONUSU HAKKINDAKİ TUTUMLARI
N.E.H Djaa A. Zagane	*Relizane University, Algeria*	HARMONICITY OF DEFORMED GRADIENT METRIC
PhD, student Kouahla Ilyas, Prof. Yallese Mohamed Athmane Dr. Belhadi Salim PhD, Student Boumaza Hanane PhD, Student. Safi Khaoula	*May 8th 1945 University (Algeria)*	CORRELATION MODELLING BETWEEN CUTTING PARAMETERS AND TANGENTIAL FORCE WHEN TURNING THE REFRACTOR ALLOY USING THE RESPONSE SURFACE METHODOLOGY

DATE: 03.05.2021	
BAKU TIME: 14:00-16:30	ANKARA TIME: 13:00-15:30
HALL-2	SESSION-2

Moderator: Lect. SELİM TAŞKAYA

AUTORS	COUNTRY	TITLE
Aysu SARI ÇETİN	*Ankara, Turkey*	İSLAM SANATI GEOMETRİK MİMARİ
Eman Salem Khaffaf **Zeyad Tariq Madalah**	*University of Mosul, Iraq*	THE INTERNET EXCESSIVE USE EFFECT ON THE SOCIAL LIFE AND ACADEMIC PERFORMANCE OF THE MOSUL UNIVERSITY STUDENTS - IRAQ
Prof. Dr. Elif Özlem AYDIN **Elif Sibel KOTAN**	*Gebze Technical University*	"ERZURUM MECİDİYE TABYASI VE YENİDEN İŞLEVLENDİRİLMESİ ÜZERİNE BİR ÖNERİ: ERZURUM HARP TARİHİ MÜZESİ"
PhD. Isaac Kofi Biney	*University of Ghana*	ADAPTING COMMUNITY EDUCATION AS A VEHICLE FOR CHANGE IN THE YOUNG ADULTS IN GHANA
Lect. SELİM TAŞKAYA	*Artvin Vocational School*	REVİZYON İMAR PLANLARINA EN KÜÇÜK KARELER YÖNTEMİ İLE İLÇE DÜZEYİNDE BAKIŞ, SELİM İLÇESİ KARS ÖRNEĞİ
Yüksek Mimar Cansu SARI TEKİN	*Başkent University*	YEŞİL BİNALAR
Yurieva Yulia Alexandrovna	*teacher-methodologist Kharkiv, Ukraine*	ADVANTAGES AND DISADVANTAGES OF REMOTE EDUCATION IN THE CONDITIONS OF DEVELOPMENT OF INFORMATION TECHNOLOGIES
Assoc. Prof. Dr. Dansheva Svetlana Olegovna **Дитюк Светлана Алексеевна** **Игнатова Валентина Владимировна** **Olga Tesalovskaya**	*Kharkiv National University of Construction and Architecture*	TO THE QUESTION ABOUT THE EFFICIENCY OF THE REMOTE AND MIXED EDUCATION IN HIGHER SCHOOL
Faruku Aliyu **Corrienna Abdul Talib**	*Universiti Teknologi Malaysia*	SCIENCE, TECHNOLOGY, ENGINEERING, ARTS AND MATHEMATICS AND COLLABORATIVE LEARNING: A REQUIRED SKILLS FOR LEAERNERS

DATE: 03.05.2021	
BAKU TIME: 17:00-19:30	ANKARA TIME: 16:00-18:30
HALL-1	SESSION-3

Moderator: Assoc. Prof. Svitlana Nykytyuk

AUTORS	COUNTRY	TITLE
Mohammad Jabbari **Manizhe Zakeri**	*University of Tabriz*	MOTION PLANNING OF A CONTINUUM ROBOT IN MEDICAL SURGERIES
Assoc. Prof. Svitlana Nykytiuk **Stoyan A**	*Ternopil Regional Children Hospital, Ukraine*	A CASE OF PANUVEITIS IN A CHIL WITH LYME BORRELIOSIS. (CASE REPORT)
Assoc. Prof. Svitlana Nykytyuk	*Ternopil National Medical University*	CLINICAL COURSE OF INFECTIOUS MONONUCLEOSIS IN CHILDREN
Алихан Акжайна **Момбеков С.Е.**		"ПРИМЕНЕНИЕ ЛЕКАРСТВЕННОГО РАСТЕНИЯ «РОМАШКА (CHAMOMILLA RECUTITA (L.) RAUSCHERT» В НАРОДНОЙ МЕДИЦИНЕ"
Assist. Prof. Dr. Ahmet TAŞ **Lect. M. Murat YAŞAR**	*Harran University*	ULTRA GENELLEŞTİRİLMİŞ EKSPONANSİYEL HİPERBOLİK POTANSİYEL MODELİNİN VARLIĞINDA SPİNİ OLMAYAN GÖRELİ PARÇACIKLARIN SAÇILMA VE BAĞLI DURUMLARININ İNCELENMESİ
Assist. Prof. Dr.Gökhan GÜRSES **Res. Assist. Ali AKÇAKAYA**	*Selçuk University*	COMBINED THERAPY OF MARSUPIALIZATION AND ENUCLEATION IN THE TREATMENT OF LARGE RADICULAR CYST
Assist. Prof. Dr.Gökhan GÜRSES **Res. Assist. Ali AKÇAKAYA**		ISOLATED ALVEOLAR FRACTURE: A RARE CASE REPORT
Öğr.Gör.Dr, M.Ertan GÜNEŞ **Öğr.Gör.Dr,Perihan Erkan ALKAN** **Dr.,A.Ümit SABANCI** **Prof.Dr., Cüneyt ÖZAKIN**	*Bursa Uludag University* *Bursa Uludag University* *T.R. Ministry of Health Bursa Provincial Health Directorate* *Bursa Uludag University*	% 2 ÇİNKOKLORÜRLÜ NANOBALONCUKLU LİPOZOMLAR: BAKTERIYEL ENFEKSIYONLARLA MÜCADELEDE YENI BIR ÇIKIŞ YOLU MU?
Maxim Leconiuc	*[1]State University of Medicine and Pharmacy "Nicolae Testemitanu"*	RISK FACTORS AND MOLECULAR ASPECTS IN BRAIN TUMORS PRODUCTION
G.M. Sayakova **J.E. Beksultanov**	*Asfendyarov Kazakh National Medical University (Kazakhistan)*	APPLICATION OF THE GLC METHOD ACCORDING TO THE PHARMACOPOEIAL REQUIREMENTS OF KAZAKHSTANI MEDICINAL PLANT MATERIALS - SIBERIAN FIR (ABIES SIBIRICA), PINE FAMILY

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HALL-2	SESSION-3

Moderator: Prof. Dr. Şerife KARAGÖZOĞLU

AUTORS	COUNTRY	TITLE
Res. Assist. Artun ONUKER Dilan ERBAŞ Assist. Prof. Dr.Asya Banu BABAOGLU	*İzmir Katip Çelebi University*	ÜNİVERSİTE ÖĞRENCİLERİNİN REÇETESİZ İLAÇ KULLANIM DURUMLARININ BELİRLENMESİ
Emine KORKMAZ Prof. Dr. Şerife KARAGÖZOĞLU	*Sivas Cumhuriyet University*	"KORONER GİRİŞİM SONRASI PERİFERİK VASKÜLER KOMLİKASYONLARIN ÖNLENMESİNDE KULLANILAN YÖNTEMLER VE HEMŞİRENİN ROLÜ"
Lect. Şeyda KAZANÇ Prof. Dr. Şerife KARAGÖZOĞLU	*Tokat Gaziosmanpaşa University Sivas Cumhuriyet University*	GEÇMİŞTEN GÜNÜMÜZE HEMŞİRELİK EĞİTİMİNDE SİMÜLASYON UYGULAMALARI
Lecturer. Seda KARAMAN Assoc. Prof. Ozlem ÇINAR OZDEMIR	*Ondokuz Mayıs University Izmir Demokrasi University*	"INVESTIGATION OF SPINAL POSTURE, DEPRESSION AND QUALITY OF LIFE OF FORMAL CAREGIVERS OF THE DISABLED CHILDREN AND ELDERLY INDIVIDUALS"
Prof. Dr. Gamze AKBULUT Dr. Emine Nüket ÜNSAL	*Gazi University Gülhane Training and Research Hospital*	"KONSTİPASYON BASKIN İRRİTABL BAĞIRSAK SENDROMU (İBS) OLAN BİREYLERDE FARKLI DİYET TEDAVİLERİNİN KONSTİPASYON DURUMUNA ETKİSİ"
Prof. Dr. Şerife KARAGÖZOĞLU Esra ELİK	*Sivas Cumhuriyet University*	HASTANE DIŞI KARDİYAK ARREST VAKALARINDA EKİP ÇALIŞMASI VE CPR UYGULAMALARININ KALİTESİ: HEMŞİRELİK BAKIŞ AÇISIYLA
Dr. Esra KURT CANPOLAT	*Adıyaman Training and Research Hospital*	COVID-19 PANDEMİSİ EVDE SAĞLIK HİZMETLERİNİ NASIL ETKİLEDİ?
Abdulhalık YEŞİLYURT Assoc. Prof. Dr. .Dilek ÖZTAŞ Assist. Prof. Dr. Abdullah YILDIZBAŞI Prof. Ergün ERASLAN	*Ankara Yildirim Beyazit University*	EL ALETLERİNDE İŞ SAĞLIĞI VE GÜVENLİĞİ
Rüveyda KOCUR Assist. Prof. Dr.Dilek ÖZTAŞ Assist. Prof. Dr.Abdullah YILDIZBAŞI Prof. Assist. Prof. Dr.Ergün ERASLAN	*Ankara Yildirim Beyazit University*	MOTORLU ARAÇLARDA İŞ SAĞLIĞI VE GÜVENLİĞİ
Lect. Şeyda KAZANÇ Prof. Dr. Şerife KARAGÖZOĞLU	*Tokat Gaziosmanpaşa University Sivas Cumhuriyet University*	COVİD-19 PANDEMİ DÖNEMİNDE HEMŞİRELİK EĞİTİMİNDE TEKNOLOJİNİN KULLANIMI: ARTIRILMIŞ VE SANAL GERÇEKLİK UYGULAMALARI

DATE: 04.05.2021	
BAKU TIME: 11:00-13:30	ANKARA TIME: 10:00-12:30
HALL-1	SESSION-1

Moderator: Prof. Dr. Murat KİBAR

AUTORS	COUNTRY	TITLE
G.M. Sayakova U.A. Akhatyeva A.B. Absattar		DETERMINATION OF ORGANIC COMPOUNDS IN THE PLANT EXTRACT OF SCHRENKA SPRUCE
Assist. Prof. Dr. Ömer Süha USLU	*Kahramanmaraş Sütçü İmam University*	KAHRAMANMARAŞ KUYUMCULAR MERASINDA TESPİT EDİLEN BAZI YEM BİTKİLERİNİN YEM KALİTE DEĞERLERİ
İsmail ÇİFTCİ Prof. Dr. Cennet OĞUZ Dr. Fatma ÇİFTCİ	*Konya Provincial Directorate of Agriculture and Forestry Selçuk University Konya PTT Chief Directorate*	KONYA İLİ TAHIL ÜRETİM DURUMU VE ÖNEMİ
Zeliha ŞAHİN Assoc. Prof. Dr. Mustafa Hakkı AYDOĞDU	*Harran University*	TÜRKİYE'DE SON DÖNEMLERDEKİ KORUNGA TARIMININ GENEL DEĞERLENDİRİLMESİ
Prof. Dr. Murat KİBAR	*Artvin University*	COMPARISON OF INTRAOPERATIVE EFFECTS OF INTRATESTICULAR LIDOCAINE IN CATS WITH XYLASINE-KETAMINE AND XYLASINE-PROPOFOL ANESTHESIA UNDERGOING ROUTINE CASTRATION
Prof. Dr. Murat KİBAR	*Artvin University*	"SUCCESSFUL TREATMENT OF CUTANEOUS SOLID TYPE ADENOCARCINOMA WITH CRYOSURGERY IN A PEKINGESE DOG"
Esra YAZICI Prof. Dr. Sait ENGİNDENİZ	*Ege University*	DISSEMINATION OPPORTUNITIES OF HEMP GROWING FOR BIODIESEL PRODUCTION IN TURKEY
Assoc. Prof. Dr. I. Strashynskyi Prof. Dr. V. Pasichniy T Shevchenko	*National University of Food Technologies, Kyiv, Ukraine*	PRODUCTS OF PROCESSING OF SUNFLOWER SEEDS IN MEAT PRODUCTS
Zeliha ŞAHİN Assoc. Prof. Dr. Mustafa Hakkı AYDOĞDU	*Harran University*	TÜRKİYE'DE ÇAVDAR ÜRETİMİ: SON YILLARDAKİ DEĞİŞİKLİKLERİN GENEL ANALİZLERİ

DATE: 04.05.2021	
BAKU TIME: 11:00-13:30	ANKARA TIME: 10:00-12:30
HALL-2	SESSION-1

Moderator: Dr. ABDUSSALAM Ali Ahmed

AUTORS	COUNTRY	TITLE
Assoc. Prof. Dr. M. Kenan DÖŞOĞLU **Res. Assist. Enes KAYMAZ** **Res. Assist. Muhammet DEMİRBAŞ**	*Düzce University* *Beykent University*	GÜÇ SİSTEMLERİNDE FARKLI BARALARDAKİ ZIP YÜK MODELİNİN YÜK AKIŞI VE KAYIPLAR ÜZERİNDEKİ ETKİSİ
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Atul bhattad **Neduri vidya sagar**	*Koneru Lakshmaiah Education Foundation (KLEF), India*	NUMERICAL ANALYSIS OF DOUBLE PIPE HEAT EXCHANGER BY USING HYBRID NANOFLUID
Rakesh Kulkarni **Rutuja Mandavkar** **Sundar Kunwar** **Jae-Hun Jeong** **Jihoon Lee**	*University, Nowon-gu Seoul, South Korea*	HIGHLY SUPER POROUS AND NON-ENZYMATIC HYBRID CUO/PT NPS PLATFORM WITH IMPROVED SENSITIVITY AND SELECTIVITY FOR THE DETECTION OF HYDROGEN PEROXIDE

DATE: 04.05.2021	
BAKU TIME: 14:00-16:30	ANKARA TIME: 13:00-15:30
HALL-1	SESSION-2

Moderator: Mykola D. Chemych

AUTORS	COUNTRY	TITLE
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Ivona Dimitrova Milena Bozhilova-Sakova Svetoslava Okyasheva	*University of Forestry, Faculty of Agronomy, Sofia (Bulgaria) Institute of animal science, Kostinbrod*	STUDY ON GENETIC DIVERSITY OF GENES FABP3 AND GDF9 IN COOPER-RED SHUMEN AND SYNTHETIC POPULATION BULGARIAN MILK SHEEP BREED
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Karkimbaeva G.A. Asanova D.B. Bekturganova N.D. Ashel E.	*Asfendyarov Kazakh National Medical University (Kazakhistan)*	FEATURES OF THE CLINICAL COURSE OF NOSOCOMIAL CANDIDAL STOMATITIS IN CHILDREN
G.M. Sayakova Berillo Dmitrii.A. Akhataeva Ulbossyn A.	*Asfendyarov Kazakh National Medical University (Kazakhistan)*	MICROSCOPIC EXAMINATION OF EDIBLE HONEYSUCKLE GROWING IN THE REPUBLIC OF KAZAKHSTAN
Turcu Erica Chesov Elena Valeriu Crudu	*State University of Medicine and Pharmacy ''Nicolae Testemițanu'', Republic of Moldova*	MOLECULAR GENOTYPING OF MYCOBACTERIUM TUBERCULOSIS
Akhmetbekov A.K. G.M. Sayakova ZHAKSYLYKOV N. N. Ibadullayeva G.S. ZHETEROVA S. K.	*Asfendyarov Kazakh National Medical University (Kazakhistan)*	DETERMINATION OF ORGANIC COMPOUNDS IN THE PLANT EXTRACT OF NARROW- LEAVED FIREWEED
Sadvakas A.	*Asfendyarov Kazakh National Medical University (Kazakhistan)*	INCIDENCE OF VIRAL HEPATITIS C IN ALMATY

DATE: 04.05.2021		
BAKU TIME: 14:00-16:30		ANKARA TIME: 13:00-15:30
HALL-2		SESSION-2
Moderator: Assoc. Prof. Dr. Dr. K. Koteswara		
AUTORS	COUNTRY	TITLE
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Elena Sierikova, PhD **Dr. Elena Strelnikova** **Denys Kryutchenko**	*National University of Civil Defence of Ukraine, Kharkiv, Ukraine*	THE EARTHQUAKES IMPACT ON STORAGE RESERVOIRS FOR ENVIRONMENTALLY HAZARDOUS LIQUIDS
Nagashbek SS **Ph.D. Kopbalina KB**		TYPES OF RETRANSLATORS IN COMMUNICATION CHANNELS
Assist. Prof. Dr. G Lalitha Kumari **Y Surekha** **Assoc. Prof. Dr. Dr. K. Koteswara** **N Ramesh Babu**	*Prasad V Potluri Siddhartha Institute of Technology (India)*	SYSTEMATIC SURVEY OF MUTATION TESTING – ROOKIES VANTAGE POINT
PhD Student I.Bouras **Prof. Dr. F. Sekiou**	*Université L'arbi ben m'hidi (Algeria)*	THE VARIATION OF WASTEWATER PH IN THE GRIT CHAMBER
Saathwik Vaidya **Dhruv Garg** **Subrata Mondal** **Ankit Gupta**	*Shiv Nadar University*	DESIGN OPTIMISATION OF ANKLE JOINT PROSTHESIS USING ADVANCED COMPUTATIONAL TECHNIQUES
Lulu Lei **Prof. Qing Wang**	*Shandong University*	STUDY OF CORROSION RESISTANCE UNDER MICRO-CRACKS AND MECHANICAL PROPERTIES OF SUPERHYDROPHOBIC CONCRETE
Yao Li **Prof. Qing Wang**	*Shandong University*	MICROCAPSULE TYPE LONG-LASTING PHOSPHORESCENT PROBE FOR CONCRETE CRACK MONITORING
Mingya Zhang **Prof. Qing Wang**	*Shandong University*	THE INFLUENCE OF UPPER SURFACE STRUCTURE AND SIDEWALL STRUCTURE ON THE WETTABILITY OF WATER DROPLETS

DATE: 04.05.2021	
BAKU TIME: 17:00-19:30	ANKARA TIME: 16:00-18:30
HALL-1	SESSION-3

Moderator: Dr. Lect. I. Arseni

AUTORS	COUNTRY	TITLE
Safi Khaoula Pr. Yallese Mohamed Athmane Dr. Belhadi Salim Prof. Dr. Mabrouki Tarek Phd Student. Chihaoui Salim Hadjela Salah	*University 8 may 1945*	MULTI-OBJECTIVE OPTIMIZATION OF MACHINING PARAMETERS DURING DRY TURNING OF AISI D3 STEEL USING TAGUCHI BASED GREY RELATIONAL ANALYSIS
S. Nivetha M. Chandramouleeswaran	*Sri Ramanas College of Arts and Science for Women, Aruppukottai. Tamilnadu. India*	FUZZY TOPOLOGICAL B- ALGEBRAS
Badreddine Limane	*University 8 may 1945*	ESTIMATING THE LIFETIME OF PHOTOVOLTAIC MODULES UNDER DESERT ENVIRONMENT
Dr. Wan Nadzri Osman Dr. Faisal Zulhumadi Associate Professor Dr. Mohamed Najib Salleh		READINESS AND ACCEPTANCE TOWARDS DRONE TECHNOLOGY IN MALAYSIAN AGRICULTURE : STUDY IN THE NORTHERN STATES OF PENINSULAR MALAYSIA
PHD. Student: Haoues sabrina Prof. Dr. Mohamed Athmane Yallese Dr. Belhadi Salim Prof. Dr. Alper Uysal PHD. Student: Safi Khaoula	*University 8 may 1945 (Algeria) Yildiz Technical University*	MODELING BASED ON RSM OF CUTTING PARAMETERS WHEN DRY TURNING OF GLASS FIBER REINFORCED POLYAMIDE (PA66-GF30%) WITH METAL CARBIDE TOOLS
Meriem Zebani L.Bounemia A.Azbouche A.Moulla Z.Melzi	*M' Hamed Bougara University of Boumerdés (Algeria)*	AIR POLLUTION MONITORING IN URBAN SITE OF ALGIERS
N.Loghbi L.Bounemia A.Azbouche A.Moulla Z.Melzi	*M' Hamed Bougara University of Boumerdés (Algeria) Nuclear Research Centre of Algiers (CRNA), Algiers (Algeria)*	EFFECT OF CLIMATE PARAMETERS ON BLACK CARBON CONCENTRATION IN PM2.5 AT URBAN SITE OF ALGIERS
Prof. Dr. Eteri Hart Yaroslav Rybalko	*Oles Honchar Dnipro National University, Dnipro, Ukraine*	ABOUT THE METHOD FOR REDUCING THE STRESS CONCENTRATION AROUND THE CIRCULAR HOLE IN THE PLATE THROUGH ELLIPTIC INCLUSIONS
N. Boughazi A. Haddad	*University 8 may 1945 (Algeria)*	DESIGN AND COLD FLOW SIMULATION OF A SUPERSONIC SINGLE BELL NOZZLE
Dr. Lect. I. Arseni	*Comrat State University*	PROBLEMS OF LEGAL REGULATION OF ACTIVITIES FINANCIAL AND INDUSTRIAL GROUPS IN THE REPUBLIC MOLDOVA

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ABSTRACT BOOK

GIDA ATIKLARINDAN MİKROBİYAL FERMANTASYON YOLUYLA AROMA BİLEŞENLERİNİN ÜRETİLMESİ

PRODUCTION OF AROMA COMPOUNDS FROM FOOD WASTES THROUGH MICROBIAL FERMENTATION

Zeynep NALE

Öğretim Görevlisi, Bandırma Onyedi Eylül Üniversitesi Susurluk Meslek Yüksekokulu

ORCID ID: 0000-0003-1700-8597

ÖZET

Üretilen gıdanın azımsanmayacak bir kısmının zayi olması ve bir yandan da sürekli artan dünya nüfusu için yeterli gıda kaynağının bulunmayışı günden güne önemi artan kritik sorunlardır. Gıda atıklarının yeniden değerlendirilmesiyle birlikte yaklaşık olarak dünya nüfusunun altıda birlik kısmının besin ihtiyacının giderilmesinde kilit bir adım atılmış olurken, atıkların çevre üzerindeki olumsuz etkisinin hafifletilmesi fırsatı da yakalanmış olacaktır.

Pazar standartlarını karşılamadığı için ve tüketilene dek raf ömrü tamamlandığı için her yıl büyük miktarlarda gıda dünyanın farklı yerlerinde çöpe atılmaktadır. Tarladan sofraya gelene kadar hammaddenin geçirdiği dönüşüm sürecinde de çeşitli kayıplar yaşanmaktadır. Üreticilere yönelik ekonomik kaybın yanı sıra, ıskartaya çıkan gıda önemli bir çevre sorunu da oluşturmaktadır. Bu noktadan değerlendirildiğinde bir problem olan gıda atıkları aslında aromatik bileşikler, pigmentler, uçucu yağlar ve antibiyotikler gibi çeşitli ileri seviye biyokimyasal maddelerin üretimi için hammadde olarak kullanılabilme potansiyeline sahiptir. Gıda atıklarından ekstraksiyon, distilasyon gibi fiziksel yöntemler yardımıyla aroma ve tat bileşenleri, renk pigmentleri gibi çeşitli maddelerin elde edilmesi uzun yıllardır uygulanan bir metottur. Ancak son yıllarda üzerinde durulan yöntemlerden biri mikroorganizmalar yardımıyla atık haldeki gıdalardan katma değeri yüksek aroma maddelerinin üretilmesidir. Endüstriyel ölçekte üretime henüz uygun olmayan bu biyo sistemler daha az kimyasal madde kullanımı yönüyle daha çevreci uygulamalar olmasının yanı sıra söz konusu biyo sistemlerde üretilen ürünlerin "doğal" etiketine sahip oluşu tüketiciler tarafından daha cazip karşılanmaktadır.

Bütün bu bilgiler göz önünde bulundurularak bu çalışmada gıda atıklarından mikrobiyal fermantasyon yoluyla katma değeri yüksek ürünler elde edilmesine yönelik temel teorik bilgiler paylaşılmış olup, bu kapsamda yapılmış bazı akademik çalışmalara yer verilmiştir.

Anahtar Kelimeler: atık, gıda, mikroorganizma, fermantasyon

ABSTRACT

The loss of a substantial part of the food produced and the lack of sufficient food resources for the ever-increasing world population are critical problems that are increasing day by day. With the reuse of food waste, a key step has been taken to meet the nutritional needs of approximately one-sixth of the world's population, and the opportunity to alleviate the negative impact of waste on the environment will also be achieved.

Large quantities of food are thrown away in different parts of the world every year, as it does not meet market standards and its shelf life is completed until it is consumed. Various losses are also experienced in the transformation process of raw materials from the field to the table. In addition to the economic loss to producers, discarded food is also a major environmental problem. Food waste, which is a problem from this point of view, actually has the potential to be used as raw materials for the production of various advanced biochemical substances such

as aromatic compounds, pigments, essential oils and antibiotics. It is a method that has been used for many years to obtain various substances such as flavor and taste components and color pigments from food waste with the help of physical methods such as extraction and distillation. However, one of the methods that has been emphasized in recent years is the production of flavoring substances with high added value from waste foods with the help of microorganisms. These bio systems, which are not yet suitable for production on an industrial scale, more friendly to environment in terms of using less chemicals, as well as the "natural" label of the products produced in these bio systems are more attractive by consumers.

Considering all this information, in this study, basic theoretical information about obtaining high value-added products from food waste by microbial fermentation has been shared and some academic studies have been included in this context.

Keywords: waste, food, microorganism, fermentation

EXPANDING THE BOUNDARIES OF CULTIVATION OF THERMOPHILIC CROPS DUE TO CLIMATE WARMING

Nina CHAVDAR

Candidate of Agricultural Sciences Associate Professor, Transnistrian State University named after T.G. Shevchenko, Agrarian and Technological Faculty

ABSTRACT

Against the background of global warming in Transnistria, an increase in air temperature is observed. Over the 70-year period the increase in the average annual air temperature in the south of Transnistria amounted to 1,2 – 1,3°C.

In conditions of global warming the soil temperature also changes in the direction of growth; an increase in soil temperature is noted in the entire studied soil layer from 0,2m to 3,2m. Over the last 20 years in Transnistria the tendency of soil warming at the depths under study was 0,8 – 1,2°C. The maximum temperature of +71°C was observed on the soil surface of the bare area in 2007 according to the data of the meteorological station in Tiraspol.

The continuing rise in temperatures provokes in most cases a decrease in the level of agricultural production for traditionally cultivated crops in the region, most pronounced for corn, sunflower, winter wheat and grapes, especially in the case of higher temperatures in the summer season.

These circumstances contribute to the expansion of the cultivation of thermophilic crops in the region. These crops include Indian sesame, which is in great demand in the food industry of Transnistria.

To create sesame varieties suitable for cultivation in Transnistria.

A collection sample of Indian sesame, low-yielding, partially ripening under the conditions of Transnistria, was used as a source material for breeding.

In aim of creating of sesame varieties the method of physical mutagenesis was used in combination with individual selection.

From the obtained mutant offspring, forms were selected that mature in the conditions of Transnistria without the use of desiccation, which served as the starting material for creating new varieties: Lebed and Mulatka.

Lebed is characterized by the duration of the growing season 130 – 140 days, the height of the stem during the ripening period is 165 – 175cm. From 7 to 8 shoots of the first level are formed on the plants. The length of the productive part of the main shoot is 100 – 115cm. Summary from 200 to 400 bolls are formed on the plant. The weight of 1000 seeds of white with a cream shade of color varies from 2,7 to 2,9g. Productivity without irrigation is 2,0 – 2,2 ton/ha.

Mulatka variety is characterized by a vegetation period of 130-140 days; the height of the stem during the ripening period is 150 – 160cm. From 5 to 10 shoots of the first level are formed on the plants. The length of the productive part of the main shoot is 100 – 115cm, the number of bolls per plant is from 200 to 250 pieces. The weight of 1000 seeds of light brown (golden) color varies from 2,6 to 2,8g. The yield without irrigation is 1,7 – 2,0 ton/ha.

Climate warming and the use of physical mutagenesis in combination with multiple individual selection of early ripening and fruitful forms made it possible to create varieties suitable for cultivation in the conditions of Transnistria at 46 degrees north.

Keywords: climate warming, sesame, physical mutagenesis, varieties.

CONSUMERS' KNOWLEDGE ABOUT FOOD PRODUCTION SYSTEMS AND THEIR PURCHASING BEHAVIOUR IN THE UNIVERSITY OF NIGERIA NSUKKA COMMUNITY, ENUGU STATE, NIGERIA

Ifeoma Q. Anugwa, Mabel U. Dimelu, Emmanuel C. Odoh

University of Nigeria Nsukka, Nigeria

ABSTRACT

This study investigated consumers' knowledge of food production systems and their purchasing behaviour in the University of Nigeria Nsukka Community, Enugu State. A multistage sampling procedure was used in selecting 129 respondents for the study. Descriptive statistics and linear regression was used to analyze the data. The result of the study showed that a greater proportion proportion (34.9%) of the respondents purchased conventional food daily, while 36.4% of respondents purchased organic food monthly and 45% of respondents never purchased genetic modified food. Also, the majority (75.2%) of respondents purchased food products from the market and it them an average of 23 minutes to reach the place of purchase. Furthermore, the respondents indicated that they were aware of conventional foods (M=2.10), organic food (M=2.41) but were not aware of genetically modified food (1.67). Also, the majority (96.1%) of the respondents indicated that they consumed organic food conventional food products (94.6%) and genetically modified food (39.5%). Also, the majority (83.6%) of respondents had high knowledge on organic production system. The finding shows that there is relatively high health risk associated with the consumption of conventionally grown produce (M=2.38) and the application of agrochemicals in conventional production system leads to contamination of the product (M=2.43). Major factors the consumers' purchasing intension were: quality of food product (M=2.26), potential health benefits of the food product (M=2.25), among others. Meanwhile, there is a significant (t=-2.55; p=0.01) influence of knowledge about different food production system on purchasing behaviour but perception and knowledge of production system has no significant influence on purchasing behaviour of the consumer. It is recommended that adequate awareness campaigns in the university community should be initiated to increase the knowledge of consumers and as well encourage the consumption of various food products nationwide.

Keywords: Conventional foods, Food production systems, Genetically modified foods, Organic foods.

PALM OIL PROCESSING PRACTICES AMONG RURAL FAMERS IN IGBO-EZE NORTH LOCAL GOVERNMENT AREA OF ENUGU STATE, NIGERIA

Okoro, John Chukwuma[1]; Ali, Joshua Chukwuma[1]; Agwu Ekwe Agwu[1] and Samuel Chukwudi Chime[2]

[1]Department of Agricultural Extension, University of Nigeria, Nsukka

[2]College of Medicine, University of Nigeria, Nsukka

ABSTRACT

The study examined palm oil processing practices in Igbo-Eze North L.G.A of Enugu State. Using a multistage sampling procedure, 100 farmers were selected. Data were collected using a structured interview schedule and were analyzed using descriptive statistics. The majority (55%) of the respondents obtained palm fruits from family owned farms, while 40% sourced from their personal farms. The major benefits derived from palm oil processing were better feeding and nutrition ($\bar{x}$ =2.00), money for purchase of basic household needs ($\bar{x}$=1.91) and money for payment of ward school fees ($\bar{x}$=1.65). About 66.0% of the respondents were using mechanised palm oil processing practices, while 34.0% of the farmers were using traditional palm oil processing. Respondents preferred the mechanized method because the risk (77.0%), labour (68.0%), time (68.0%) and cost (63.0%) involved in the processing activities were less. However, constraints to mechanized palm oil processing included lack of capital for start up personal processing ($\bar{x}$=1.81), inadequate extension guidance ($\bar{x}$=1.67) and seasonal supply of fresh fruits ($\bar{x}$= 1.39). The study concluded that palm oil processors lack capital and extension contact for improvement and expansion. It therefore recommended that government and non-government agencies should provide support to extension agents to adequately educate farmers on planting improved variety of palm seedlings, improved methods of palm oil processing, and facilitate provision of improved palm oil processing machines for improved productivity and standard of living. Again, farmers should be encouraged to form oil palm processing cooperatives for easy access to loans.

Keywords: Palm oil, Processing practises, Rural farmers

DÜNYA YAŞ SEBZE ÜRETİMİ VE TİCARETİNİN MEVCUT DURUMU

THE CURRENT STATE OF FRESH VEGETABLE PRODUCTION AND TRADE IN THE WORLD

Burcu TUNCER

Doç. Dr., Van Yüzüncü Yıl Üniversitesi Ziraat Fakültesi Bahçe Bitkileri Bölümü, Van, Türkiye

ORCID ID: https://orcid.org/0000-0002-4402-4536

ÖZET

Dünyada 2019 yılı verilerine göre toplam 59 689 174 ha alanda 1 130 203 768 ton sebze üretimi yapılmaktadır. Dünya yaş sebze ihracat ve ithalat miktarı ile parasal değeri ise sırasıyla; 70 026 236 ton, 67 888 386 ton, 84 916 675 (1000 $), 82 170 913 (1000 $)' dır. Burada sunulan çalışmada, dünya yaş sebze üretimi ve ticaretinin mevcut durumunu ortaya koymak amaçlanmıştır.

2019 yılı dünya yaş sebze üretim miktarı; kıtalara ve türlere göre, türler bazında üretimde önemli paya sahip ilk 5 ülkeye göre belirlenmiştir. Bunun dışında 2001-2019 yılları arasındaki sebze üretim miktarı ve alanı ile verimlilikteki gelişmeler karşılaştırmalı olarak değerlendirilmiştir. Dünya yaş sebze ticaretinde ise, 2000-2020 yılları arasındaki toplam ihracat ve ithalat miktarı ile parasal değeri, 2016-2020 yılları arasında türler bazında ihracat ve ithalat miktarları ile parasal değerinin yıllara göre değişimi, ihracat ve ithalat parasal değerinde önemli paya sahip ilk 20 ülke saptanmıştır.

Araştırma sonucunda, sebze üretiminde Asya kıtasının (taze bakla, enginar, tatlı mısır ve nane hariç) birinci sırada yer aldığı, 2001-2019 yılları arasında dünyada en fazla üretimi yapılan sebze türlerinin sırasıyla domates, karpuz, soğan, hıyar-acur olduğu, üretim alanı bakımından da yine aynı türlerin ön plana çıktığı belirlenmiştir. Dünyada yıllara göre sebze üretim miktarı ve alanında çoğu türde, verimde ise bazı türler hariç (tatlı mısır, mantar ve bamya) diğer türlerde artışlar olduğu saptanmıştır. 2000-2019 yılları arasında ihracat ve ithalat miktarı ile parasal değerinde yıllara göre düzenli bir artış eğilimi ya da denge söz konusu iken, 2020 yılında Covid-19 Pandemisi nedeniyle hem toplam sebze ticaret verilerinde hem de türler bazındaki değerlerde belirgin azalışlar olduğu tespit edilmiştir. Dünya sebze ihracat parasal değerinde öne çıkan ülkeler Çin, Hollanda, Meksika, İspanya, ABD olurken, ithalat parasal değerinde ise ABD, Almanya, İngiltere, Fransa ve Kanada ilk sıralarda yer alan ülkeler olmuştur.

Anahtar Kelimeler: İhracat, İthalat, Sebze Alanı, Sebze Üretimi, Verim

ABSTRACT

According to 2019 FAO data, 1 130 203 768 tons of vegetables are produced in a total of 59 689 174 hectares of land in the world. The amount of world fresh vegetables export and import and their monetary value are respectively; 70 026 236 tons, 67 888 386 tons, 84 916 675 (1000 $), and 82 170 913 (1000 $). In this study, it was aimed to reveal the current situation of fresh vegetable production and trade in the world.

The amount of fresh vegetable production in the world in 2019; it was determined according to continents and species, the top 5 countries that have an important share in production on a species basis. In addition, the amount of vegetable production, area and productivity 2001-2019 were evaluated comparatively. The changes in the amount of exports and imports on the basis of species and their monetary value by years 2016-2020 were determined. In addition, the first

20 countries with a significant share in the monetary value of exports and imports were determined.

As a result of the research, it was found that the Asian continent (excluding fresh broad bean, artichoke, sweet corn, and peppermint) ranked first in vegetable production, and that the most produced vegetable species in the world between 2001-2019 were tomatoes, watermelons, onions, and cucumber-gherkin, respectively; It has been determined that the same species are also prominent in terms of production area. In the world, there has been an increase in the amount of vegetable production and area over the years. Yield values were found to be increased in other species except sweet corn, mushroom, and okra. While there was a regular increase or balance in the amount of exports and imports and their monetary value between 2000-2019, it was determined that there were significant decreases in both the total vegetable trade data and the values on the basis of species due to the Covid-19 Pandemic in 2020. The China, Netherlands, Mexico, Spain, and USA are the leading countries in the world vegetable export monetary value, while the USA, Germany, England, France, and Canada are the top countries in the monetary value of imports.

Keywords: Export, Import, Vegetable Area, Vegetable Production, Yield

NOHUT GEVENİNİN (ASTRAGALUS CICER L.) HAYVANCILIKTA KULLANIMI ÜZERİNE YETİŞTİRİCİ GÖRÜŞLERİ: ADIYAMAN İLİ ÖRNEĞİ

BREEDERS' OPINIONS ON THE USE OF CICER MILKVETCH (ASTRAGALUS CICER L.) IN LIVESTOCK: CASE OF ADIYAMAN

Tugay AYAŞAN

Doç. Dr, Osmaniye Korkut Ata Üniversitesi Kadirli Uygulamalı Bilimler Yüksekokulu, Organik Tarım İşletmeciliği Bölümü, Osmaniye

(Sorumlu yazar)

Fatma GÜNDÜZ

Lisans öğrencisi, Osmaniye Korkut Ata Üniversitesi Kadirli Uygulamalı Bilimler Yüksekokulu, Organik Tarım İşletmeciliği Bölümü, Osmaniye

Köksal KARADAŞ

Doç. Dr, Iğdır Üniversitesi Ziraat Fakültesi Tarım Ekonomisi Bölümü Tarım İşletmeciliği Anabilim Dalı, Iğdır

Behlül SEVİM

Dr. Öğretim Üyesi, Aksaray Üniversitesi Eskil Meslek Yüksek Okulu, Aksaray

ÖZET

Bu çalışmada; Adıyaman ilinde hayvancılık yapan üreticilerin genel durumu hakkında bilgi sahibi olmak, nohut geveninin üretim durumu, çiftçiler tarafından kullanım durumu ve nohut geveninin besin içeriğinin, çiftçi tarafından bilinip bilinmediğini ölçmek temel amaçtır. Bu çalışmanın materyalini; Adıyaman ilinde hayvansal üretim yapan çiftçiler oluşturmuştur. Ankete toplam 424 çiftçi katılmış olup, çiftçilerin genel durumu ölçülmeye çalışılmıştır. Bu çalışma Kasım 2020 tarihinde uygulanmış olup; anket formu kullanılarak sonuçlar elde edilmiştir.

Çalışmada katılım sağlayan çiftçilere ne tür hayvancılık yapıyorsunuz sorusu sorulmuş, ankete katılanların %81,8'i ile büyükbaş hayvancılık yaptığını ifade ederken; %10,6'sı küçükbaş hayvancılık, %4,5'uğu kanatlı hayvan yetiştiriciliği yaptığını bildirirken; %3.1'i de diğer cevabını vermiştir. Ankette çiftçilerin bitkisel üretim faaliyeti ile uğraşıp uğraşmadığı sorulmuş, ankete katılanların %72.9'u evet, %27.1'i de hayır cevabını vermiştir**.** Çiftçilerin %32.3'ü buğday, %24.5'i mısır, %9.4'ü arpa, %6.6'sı yonca, %1.2'si de nohut geveni yetiştirirken; %25.9'u hiçbir ürün yetiştirmediklerini ifade etmiştir. Yem bitkileri üretimi yapanların oranı %82,1 iken, %17,9 ise üretim yapmadığını bildirmiştir.

Nohut gevenin içerdiği protein miktarının diğer yem bitkilerinden fazla oranda protein yapısına sahip olduğunu biliyor musunuz sorusuna %78.8'si hayır bilmiyorum derken; %21.2'si evet biliyorum cevabını söylemişlerdir. Nohut geveni yetiştiriciliğini yaptınız mı sorusuna çiftçilerin %96.5'u hayır derken, %3.5'u evet cevabını vermişlerdir.

Hayvan yemi seçerken nelere dikkat edersiniz sorusuna çiftçilerin %74.8'i kalite derken; %17.2'si maliyet, %8.0'ı hayvanın besin madde ihtiyacını karşılaması demişlerdir. Ankete katılanlara ne tür hayvansal üretim yapıyorsunuz sorusu sorulmuş, çiftçilerimizin %58,5'inin hayvansal üretimde hem süt hem de besi üretimi yaptıkları görülmüş; %27,8'inin besi, %13,7'sinin ise süt üretimi yaptığı görülmüştür.

Anahtar Kelimeler: Nohut Geveni, Hayvan Besleme, Adıyaman, Anket

ABSTRACT

In this study; the main purposes are to have information about the general situation of the producers concerned in livestock in Adıyaman, the production status of the cicer milkvetch, to be made to measure wheater the nutritional content is known or not by the farmers. The material of this study; formed as farmers concerned in animal production in the province of Adıyaman. A total of 424 farmers participated in the survey and the general condition of the farmers was tried to be measured. This study was implemented in November 2020; The results were obtained by using the questionnaire form.

The question of what kind of livestock you do was asked to the farmers participating in the study, while 81.8% of the respondents stated that they do cattle breeding; While 10.6% reported that they are breeding ovine and 4.5% of poultry; 3.1% gave the other answer. In the survey, it was asked whether the farmers are concerned in crop production, 72.9% of the respondents answered yes and 27.1% answered no. While 32.3% of the farmers grow wheat, 24.5% corn, 9.4% barley, 6.6% alfalfa, 1.2% cicer milkvetch; 25.9% of them stated that they did not grow any crops. While the rate of those producing forage crops was 82.1%, yet 17.9% reported that they did not.

To the question of if you know that the amount of protein contained in cicer milkvetch has a higher protein structure than other feed plants, 78.8% of them said “I do not know”; 21.2% said yes, I know. 96.5% of the farmers said no to the question of whether you have cultivated cicer milkvetch, and 3.5% answered yes.

The question on what you pay attention to when choosing animal feed, 74.8% of the farmers said quality; 17.2% of them said the cost, 8.0% of them said that the animal would meet the nutritional needs. The question of what kind of animal production you do was asked to the respondents, it was seen that 58.5% of our farmers produce both dairy farms and beef cattle in animal production; It has been observed that 27.8% produce beef cattle and 13.7% dairy farms production.

Key words: Cicer Milkvetch, Animal Nutrition, Adıyaman, Survey

MEYVE SULARINDA ASİTLİK VE ACILIK GİDERME

ACIDITY AND BİTTERNESS REMOVAL IN FRUIT JUICES

Nizam Mustafa NİZAMLIOĞLU

Dr. Öğr. Üyesi, Karamanoğlu Mehmetbey Üniversitesi, Mühendislik Fakültesi, Gıda Mühendisliği Bölümü

Kamile BAYRAK

Yüksek Lisans Öğrencisi, Karamanoğlu Mehmetbey Üniversitesi, Mühendislik Fakültesi, Gıda Mühendisliği Bölümü

(Sorumlu Yazar)

ÖZET

Meyve ve sebzelerin türüne bağlı olarak değişik cins ve miktarlarda organik asitler bulunmaktadır. Spesifik olarak meyvelerin çoğunun lezzetini, asit-şeker dengesi meydana getirmektedir. Meyve sularının tüketimi yoğun aroması ve lezzeti nedeniyle gün geçtikçe artmaktadır. Fakat bazı meyve sularının yüksek asitliği, içecek, dondurma, marmelat gibi gıda preparatlarında bir ingredient olarak kullanımını sınırlamasıyla birlikte kalitesini ve kullanımını negatif yönde etkilediğinden dolayı azaltılmaya çalışılmaktadır. Acılık ise meyve ve sebzelerin çoğunun ihtiva ettiği fenolik bileşenlerden kaynaklanmaktadır. Kafein ve kinin gibi alkaloitlerle bazı sebzelerde, limonin ve naringin gibi maddelerle turunçgillerde algılanan bir tattır. Flavonoidlerin ve limonoidlerin turunçgil meyveleri ve ürünleri üzerinde acılığa neden olan bileşikler olduğu tespit edilmiştir. Meyve sularına istenmeyen bir tat vermelerinden dolayı, uzaklaştırılmaları tüketici beğenisini artırmaktadır. Asitlik ve acılık meyve sularından fiziksel, kimyasal ve biyolojik yöntemlerle uzaklaştırılabilmektedir. Fiziksel bir yöntem olan iyon değişim reçinelerinin kullanımı, diğer yöntemlere göre reçinelerin tekrar kullanılabilirliği, düşük piyasa değeri olması, uygulanabilirliğinin daha kolay ve yaygın olan bir saflaştırma metodu olması gibi nedenlerle ön plana çıkmaktadır. Gıda endüstrisinde; şeker şurubunda rengin giderilmesinde, şeker şurubunun ve şeker alkollerinin rafine edilmesi, meyvelerde yüksek asitliğin ve acılığın giderilmesi ile elma ve üzüm suyunun berraklaştırılması gibi çok sayıda amaç için iyon değiştirici reçinelerden faydalanılabilmektedir.

Anahtar Kelimeler: Asitlik, Acılık, İyon Değişim Reçineleri, Fenolik Maddeler

ABSTRACT

There are many types of organic acids at different quantities in fruits and vegatables depending on their varieties. Specifically, an acid-sugar ratio in fruits is responsible for the flavor of most fruits. Consupmtion of fruit juices is increasing day by day due to their intense aroma and taste. However, some fruit juices with high acidity may limits their usage as an ingredient in beverages, ice cream, marmalade due to high acidity caused undesirable quality. Therefore, in such food products the ratio of fruits must be limited. The bitterness in fruits and vegatable occurs due to the phenolic components. The bitterness is perceived in some vegetables with alkaloids such as caffeine and quinine, and in citrus fruits with substances such as limonine and naringin. Thus flavonoids and limonoids have been found to be compounds that cause bitterness on citrus fruits and products, and must be removed from these in order to improve consumer appreciation. Acidity and bitterness can be removed from fruit juices by physical, chemical and biological methods. The use of ion exchange resins, which is a physical method, stands out for reasons such as reusability of resins, low market value, more applicability, being easy and common method of purification. In the food industry; ion exchange resins can be utilized for

multiple purposes such as removing color, refining sugar syrup and sugar alcohols, removing high acidity and bitterners in many types of fruits and clarification of apple and grape juices.

Keywords: Acidity, Bitterness, Ion Exchange Resins, Phenolic Substances

SIĞIR ETİ ÜRETİMİ VE TİCARETİ

BEEF MEAT PRODUCTION AND TRADE

Selçuk Seçkin TUNCER

Doç. Dr., Van Yüzüncü Yıl Üniversitesi Ziraat Fakültesi Zootekni Bölümü

ORCID ID: 0000-0001-8252-8009

ÖZET

İnsanların sağlıklı ve dengeli beslenmesinde hayvansal kaynaklı gıda tüketimi oldukça önemlidir. En önemli hayvansal gıda kaynaklarından olan kırmızı et üretiminde sığırların önemli bir payı vardır. Bu çalışmada Dünya ve Türkiye sığır eti üretimi ve dış ticareti araştırılarak mevcut durumun ortaya konulması amaçlanmıştır. Tarımsal üretimden sağlanan toplam gelirde hayvansal üretimin payı gelişmişlik ölçüsünü belirlemede önemli bir parametre olarak kabul edilir. Bu pay 2018 yılı itibariyle Avrupa Birliği ülkelerinde %45,67 olarak hesaplanırken az gelişmiş ülkelerde %21,05 olarak saptanmıştır. 2019 yılı itibariyle Amerika kıtası dünya sığır eti üretiminin neredeyse yarıya yakınını üretirken sığır eti üretiminde en önemli ülkeler sırasıyla; ABD (12 348 749 ton), Brezilya (10 200 000 ton) ve Çin (3 135 908 ton) olarak saptanmıştır. Türkiye ise 1 075 479 ton olan sığır eti üretimiyle dünyanın en büyük 12. sığır eti üreticisi ülkesi konumundadır. Dünya sığır eti ithalat ve ihracatında Avrupa Birliği ülkeleri dünyanın az gelişmiş ülkeleriyle kıyaslandığında gerek miktar gerekse de ekonomik değer olarak büyük farklar göstermektedir. Nitekim Avrupa Birliği ülkeleri dünya sığır eti ithalatının %53,8'ini, ihracatınınsa %60,42'sini gerçekleştirmektedir. Çin (%13,21), Hollanda (%12,50), İtalya (%10,78), Kuzey Kore (%7,67) ve Almanya (%6,38) dünyanın en büyük sığır eti ithalatçısı ülkeleridir. Dünya sığır eti ihracatındaki oransal payı itibariyle ise sırasıyla; Polonya (%10,85), Hollanda (%8,07), Fransa (%7,93), Almanya (%7,38) ve Avusturalya (%7,17) önde gelen ülkeler konumundadır. Türkiye, kırmızı et tüketiminde düşük tüketim grubu ülkeler grubunda yer almaktadır. Nitekim 2019 yılı itibariyle yıllık olarak Türkiye'de kişi başına yaklaşık olarak 13 kg'ı sığır eti olmak üzere toplam 18,5 kg kırmızı et tüketilmekte iken, yüksek tüketim gurubundaki ABD'de kişi başına yaklaşık olarak 37,5 kg'ı sığır eti olmak üzere toplamda yaklaşık 76 kg kırmızı et tüketilmektedir. Türkiye'nin kişi başına düşen kırmızı et üretim, tüketim ve ihracatının gelişmiş ülkeler düzeyine çıkabilmesi için hayvancılığın teşvik edilmesi ve daha yüksek üretimin yapılması sağlanmalıdır.

Anahtar Kelimeler: Dünya, Türkiye, Sığır Eti, Üretim, Ticaret

ABSTRACT

Food consumption of animal origin is very important in a healthy and balanced diet of people. Cattle have an important share in the production of red meat, which is one of the most important animal food sources. This study the world and Turkey's beef production and foreign trade has aimed to find out the current situation. The share of animal production in the total income obtained from agricultural production is considered to be an important parameter in determining the development measure. While this share was calculated as 45,67% in European Union countries as of 2018, it was determined as 21,05% in underdeveloped countries. As of 2019, while the Americas produced almost half of the world's beef production, the most important countries in beef production are; It has been the USA (12 348 749 tons), Brazil (10 200 000 tons) and China (3 135 908 tons). Turkey is 1 075 479 tons in world beef production is the largest beef producing country in the 12th position. When compared to the underdeveloped countries of the world, the European Union countries show great differences in terms of both quantity and economic value in the world beef import and export. As a matter of fact, European

Union countries realize 53,8% of world beef import and 60,42% of exports. China (13,21%), Netherlands (12,50%), Italy (10,78%), North Korea (7,67%) and Germany (6,38%) are the world's largest beef importer countries. In terms of its proportional share in the world beef export; Poland (10,85%), Netherlands (8,07%), France (7,93%), Germany (7,38%) and Australia (7,17%) are the leading countries. Turkey is in the group of countries in terms of low consumption of red meat consumption group. While a total of 18,5 kg of red meat is consumed per person, of which approximately 13 kg beef, in Turkey, in the USA, which is in the high consumption group, a total of 76 kg of red meat, of which about 37,5 kg beef is consumed per person. In order to get to the level of developed countries for Turkey's per capita red meat production, consumption and foreign trade, it is necessary to increases promotion of animal husbandry and to ensure higher production.

Keywords: World, Turkey, Beef, Production, Trade

PHENOLIC AND FLAVONOID CONTENT OF PROPOLIS

PROPOLİSİN FENOLİK VE FLAVONOİD İÇERİĞİ

Noor AKHRAS

Yüksek Lisans Öğrencisi, Gaziantep Üniversitesi Fen Bilimleri Enstitüsü Biyokimya Anabilim Dalı**, ORCID NO: 0000-0002-0102-7956**

Sultan CAN

Araştırma Görevlisi, Gaziantep Üniversitesi Mühendislik Fakültesi, Gıda Mühendisliği Bölümü, **ORCID NO: 0000-0003-1142-6827**

Abuzer ÇELEKLİ

Profesör Doktor, Gaziantep Üniversitesi Fen Edebiyat Fakültesi, Biyoloji Bölümü,

ORCID NO: 0000-0002-2448-4957

(Sorumlu Yazar)

Hüseyin BOZKURT

Profesör Doktor, Gaziantep Üniversitesi Mühendislik Fakültesi, Gıda Mühendisliği Bölümü

ORCID NO: 0000-0003-4676-6354

ABSTRACT

Propolis is a natural resinous substance, collected by honeybees from buds and exudates of plants, mixed with pollen and enzymes secreted by bees. It is considered to be used in the construction of the hive and as a protective barrier against enemies of the bees. More than 300 compounds such as polyphenols, steroids, terpenoids, amino acids and sugars have been discovered in raw propolis. Abundance of these compounds is affected by geographical and botanical factors, in addition to the collection season. Their existence in propolis defines the quality of the propolis as well as its pharmacological property and possible application areas. It is well known that propolis has antioxidant, antiviral, antibacterial and antifungal properties as well as other health promoting bioactivities such as hepatoprotective, anti-inflammatory and antiulcer. Chemical composition is a determining factor of bioactive properties of propolis. Phenolic and flavonoid compounds are the fundamental components of propolis which are responsible for the bioactive properties. Their concentration and structure vary depending on factors including the geographical location, the season of production, the sources of flora and bee species. Propolis is a promising natural product due to its valuable chemical composition and broad range of bioactivities.

Keywords: Propolis, bioactive, phenolic, flavonoid

ÖZET

Propolis, bal arıları tarafından bitkilerin tomurcuk ve eksüdalarından toplanan, arıların salgıladığı enzimlerle ve polenle karıştırılarak elde edilen doğal reçineli bir maddedir. Propolisin kovanın yapımında ve arıların düşmanlarına karşı koruyucu bir bariyer olarak kullanıldığı düşünülmektedir. Ham propoliste polifenoller, steroidler, terpenoidler, amino asitler ve şekerler gibi 300'den fazla bileşik keşfedilmiştir. Bu bileşiklerin miktarı, toplanma mevsimine ek olarak coğrafi ve botanik faktörlerden etkilenir. Bu bileşiklerin propolisteki varlığı, propolisin kalitesini, farmakolojik özelliğini ve olası uygulama alanlarını belirler. Propolisin antioksidan, antiviral, antibakteriyel ve antifungal özelliklerinin yanı sıra karaciğer

koruyucu, antiinflamatuar ve antiülser gibi sağlığı geliştiren diğer biyoaktivitelere de sahip olduğu iyi bilinmektedir. Kimyasal bileşim, propolisin biyoaktif özellikleri ile ilgili belirleyici bir faktördür. Fenolik ve flavonoid bileşikler, propolisin biyoaktif özelliklerinden sorumlu olan temel bileşenleridir. Bu bileşenlerin konsantrasyon ve yapıları, coğrafi konum, üretim mevsimi, flora kaynakları ve arı türleri gibi faktörlere bağlı olarak değişir. Propolis, değerli kimyasal bileşimi ve geniş biyoaktivite yelpazesi nedeniyle ümit verici doğal bir üründür.

Anahtar Kelimeler: Propolis, biyoaktif, fenolik, flavonoid

ÇÖREK OTU KULLANILARAK ELDE EDİLEN GIDALARIN SAĞLIK ÜZERİNE ETKİLERİNİN ARAŞTIRILMASI

INVESTIGATION OF THE EFFECTS OF FOODS USING BLACK SEED ON HEALTH

Ganime Güliz Kök

Sağlık Bilimleri Üniversitesi, Sağlık Bilimleri Enstitüsü,

Gıda Teknolojisi Anabilim Dalı

ORCID ID: 0000-0002-6020-7009

Dr. Öğr. Üyesi Sibel Bölek

Sağlık Bilimleri Üniversitesi, Sağlık Bilimleri Enstitüsü,

Gıda Teknolojisi Anabilim Dalı

ORCID ID: 0000-0003-4967-9416

ÖZET

Çörek otu (Nigella sativa) Ranunculaceae familyasına ait çiçekli bir bitkidir ve Güney Avrupa, Kuzey Afrika ve Güneybat Asya'da yetişmektedir. Çörek otu tohumları geleneksel olarak Güneydoğu Asya ve Orta Doğu ülkelerinde astım, bronşit, romatizma ve diğer iltihaplı hastalıkların tedavisinde kullanıldığı gibi terapötik potansiyeli nedeniyle de yaygın olarak kullanılmakta olup, diüretik, antihipertansif, antidiyabetik, antikanser, immün modülatör, antimikrobiyal, antihelmintik, analjezik ve antiinflamatuvar, spazmolitik, bronkodilatör, gastroprotektif, hepatoprotektif etkileri gözlenmektedir. Çörek otu tohumunda önemli bir bileşen olan timokinonin farmakolojik açıdan tohumun en aktif kısmını oluşturmaktadır. İçerisinde önemli yağ asitleri, vitaminler, mineraller ve uçucu bileşikler olması nedeniyle de dikkat çeken Nigellas sativa besleyici, tatlandırıcı ve süsleme özelliklerine sahip olduğu için tüm dünyada gıda ve baharat olarak oldukça geniş kullanım alanına sahiptir. Ayrıca çörek otu tohumu bileşenleri kozmetik alanında ve diyet ek ürünleri olarak kullanılabilen fonksiyonel gıdaların hazırlanmasında da kullanılmaktadır. Aromalı ve acımsı siyah tohumlardan oluşan çörek otu meyveleri gıda maddelerine, bitki çaylarına ve bazen kahve karışımlarına eklenmektedir. Ayrıca çörek otu zengin bir yağ, protein ve mineral kaynağı olarak da ön plana çıkmaktadır. Çörek otu uçucu yağlarının sahip olduğu antimikrobiyal etki gıda muhafazasında doğal bir koruyucu olarak kullanılabileceğini göstermektedir. Çörek otunun kullanılabileceği uygulamaların çeşitliliği, bu yağlı tohumlara büyük bir endüstriyel önem vermektedir. Bu çalışmada çörek otunun gıdalarda kullanım olanakları ve bu gıdaların sağlık üzerine etkilenin araştırılması amaçlanmıştır.

Anahtar Kelimeler: Çörek otu, Timokinon, Antidiyabetik, Antioksidan

ABSTRACT

Black seed (Nigella sativa) is a flowering plant belonging to the Ranunculaceae family and is grown in Southern Europe, North Africa and Southwest Asia. Black cumin are traditionally used in Southeast Asia and the Middle East countries for the treatment of asthma, bronchitis, rheumatism and other inflammatory diseases, as well as for their therapeutic potential, as diuretic, antihypertensive, antidiabetic, anticancer, immune modulator, antimicrobial, anthelmintic, analgesic and anti-inflammatory, spasmolytic, bronchodilator, gastroprotective and hepatoprotective effects are observed. Timoquinone, an important component in black cumin, is the most pharmacologically active part of the seed. Nigellas sativa, which stands out due to its important fatty acids, vitamins, minerals and volatile compounds, has a wide range of

uses as food and spice all over the world as it has nutritious, sweetening and decorative properties. Moreover, black cumin seed components are used in the preparation of functional foods that can be used in the field of cosmetics and as dietary supplements. Black cumin fruits, consisting of aromatic and bitter black seeds, are added to foodstuffs, herbal teas and sometimes coffee mixtures. In addition, black seed stands out as a rich source of oil, protein and minerals. Essential oils of black cumin have a food preservation and protective effect, and are antimicrobials used in foods shows that it can be used instead of preservatives. The antimicrobial effect of black cumin essential oils shows that it can be used as a natural preservative in food preservation. The variety of applications in which black cumin can be put gives great industrial importance to these oil seeds. In this study, it was aimed to investigate the possibilities of using black cumin in foods and the effects of these foods on health.

Keywords: Black Cumin, Thymoquinone, Antidiabetic, Antioxidant

ÇOCUK SÜTLERİNDE PROTEİN DENATURASYONU VE FAZ AYRIMININ ÖNLENMESİ

PREVENTION OF PROTEIN DENATURATION AND PHASE SEPARATION IN MILK

Gizem BEŞKEN TUĞCU

Pamukkale University, Engineering Fakulty, Department of Food Engineering

ORCID ID: 0000-0002-2736-6235

ÖZET

Uzun ömürlü sütte gıda güvenliği haricinde kalitenin de uzun soluklu korunması oldukça önemlidir. Raf ömrü boyunca yer çekimine meydan okuyarak sütün içerisindeki kuru maddeyi oluşturan bileşenlerin askıda kalması ürünün bütünlüğü açısından yüksek öneme sahiptir. Yer çekiminin etkisi ile sütlerde uygun bir reçete ve proses dizayn edilmezse bu bileşenlerin ağır olanlarının hafiflerden ayrılarak paketin dip kısmında toplandığı görülür, aynı şekilde paketin en üst kısmında kalan kısımda yoğunluğu en az, dolayısıyla ağırlığı en az olan su olacaktır. Bu duruma faz ayrımı denir. Ürünlerin raf ömrü boyunca böyle bir faz ayrımı problemi göstermemesi gerekir. Raf ömrü süresi belirlenirken yapılan empirik izlemlerde faz ayrımı da önemli parametrelerden biridir. Uzun ömürlü sütlerde görülebilecek bir diğer teknik kalite problemi ise protein denaturasyonudur. Süt proteince zengin bir gıdadır, tebliğe göre süt min %2,9 protein içermelidir. 180 ml bir sütün minimum sütten gelen protein oranı yaklaşık olarak 5-5,4 g aralığında olması öngörülür. İneğin memesinin içerisinde kandaki besin ögelerinden süt üretebilen hücreler vardır. Bu hücreler sütü ürettiğinde süt, memenin içinde sterildir. Sağan kişinin elinden veya otomatik sağım ekipmanlarından, çevreden, sütün içerisinden geçtiği hatlardan tanklardan, kısaca her yerden mikroorganizmalar süte bulaşmaya başlar, bunlardan buzdolabı sıcaklığında yetişebilenler psikrotrof bakterilerdir, dolayısıyla bunlar süt buzdolabı sıcaklıklarında muhafaza edilse dahi üremeye çoğalmaya devam ederler. Bu çalışmada doğal bir çözüm ile üründeki protein denaturasyonu ve faz ayrımı probleminin giderilmesi ve raf ömrü boyunca stabil bir ürün elde edilmesi için Calcium, sodyum tuzları ile pH'a müdahele etmeden daha doğal bir çözümle sorunu giderilmesi amaçlanmıştır. Bu amaç doğrultusunda sorunu çözecek uygun hammaddenin araştırılmış ve bulunan doğal hammadde ile gerekli denemeler yapılarak, sonuçları izlenmiştir. Yapılan çalışmalar sonucunda 70 ^{o}C'de uygun oranda katılarak aktifleştirilen Gellan Gum'ın, bitmiş ürün pH'ını minimum 0,1 oranında arttırdığı gözlemlenmiştir. Bu ek bir fayda sağlarken, henüz daha 1 aylık deneme ürünlerde oldukça sağlam bir jel oluşturduğu gözlemlenmiş ve raf ömrünün sonuna kadar hem faz ayrımı hem de protein denaturasyonu problemini çözmüştür. 9 ay süre ile ürünler ilk günkü kalitede dayanım göstermişlerdir.

Anahtar Kelimeler: Çocuk sütü, denaturasyon, faz ayrımı, raf ömrü

ABSTRACT

In addition to food safety in long-lasting milk, long-term quality protection is very important. It is of high importance for the integrity of the product to suspend the components that make up the dry substance in the milk, challenging gravity throughout its shelf life. If a suitable recipe and process are not designed in milk with the effect of gravity, it is seen that the heavy ones of these components are separated from the light ones and collected at the bottom of the package, in the same way, the water remaining at the top of the package will have the least density and therefore the least weight. This condition is called phase separation. Products should not exhibit such a phase separation problem during their shelf life. Phase separation is also one of the important parameters in empirical monitoring while determining the shelf life. Another

technical quality problem that can be observed in long-lived milk is protein denaturation. Milk is a food rich in protein, according to the communique, milk should contain a minimum of 2.9% protein. A 180 ml milk is expected to have a minimum milk protein ratio in the range of approximately 5-5.4 g. Inside the udder of the cow, some cells can produce milk from the nutrients in the blood. When these cells produce milk, the milk is sterile inside the breast. Microorganisms start to contaminate the milk from the hands of the milker or the automatic milking equipment, from the environment, from the lines through which the milk passes, from the tanks, in short, from everywhere, and those that can grow at refrigerator temperature are psychrotrophic bacteria, so they continue to reproduce even if the milk is kept at refrigerator temperatures. In this study, it was aimed to eliminate the problem of protein denaturation and phase separation in the product with a natural solution and to obtain a stable product throughout its shelf life with a more natural solution without interfering with Calcium, sodium salts, and PH. For this purpose, the appropriate raw material to solve the problem was investigated and the necessary tests were carried out with the found natural raw material and the results were monitored. As a result of the studies, it was observed that Gellan Gum, activated by joining at the appropriate rate at 70 ^{o}C, increased the pH of the finished product by a minimum of 0.1 percent. While this provides an additional benefit, it has been observed that it creates a fairly robust gel in more than 1-month trial products and solves the problem of both phase separation and protein denaturation by the end of its shelf life. With a period of 9 months, the products showed strength in the quality of the first day.

Keywords: Children's milk, denaturation, phase separation, shelf life

ANTIOXIDANT AND ANTIMICROBIAL ACTIVITY OF PROPOLIS

PROPOLİSİN ANTİOKSİDAN VE ANTİMİKROBİYAL AKTİVİTESİ

Walaa DİRANİ

Yüksek Lisans Öğrencisi, Gaziantep Üniversitesi Fen Bilimleri Enstitüsü Biyokimya Anabilim Dalı, **ORCID NO: 0000-0003-1300-1291**

Sultan CAN

Araştırma Görevlisi, Gaziantep Üniversitesi Mühendislik Fakültesi, Gıda Mühendisliği Bölümü, **ORCID NO: 0000-0003-1142-6827**

Abuzer ÇELEKLİ

Profesör Doktor, Gaziantep Üniversitesi Fen Edebiyat Fakültesi, Biyoloji Bölümü,

ORCID NO: 0000-0002-2448-4957

(Sorumlu Yazar)

Hüseyin BOZKURT

Profesör Doktor, Gaziantep Üniversitesi Mühendislik Fakültesi, Gıda Mühendisliği Bölümü,

ORCID NO: 0000-0003-4676-6354

ABSTRACT

Propolis is a natural resinous mixture produced by honeybees from substances collected from parts of plants, buds and exudates. Propolis is a valuable source of a wide variety of bioactive compounds. These compounds show antioxidant, antibacterial, antiviral, antifungal, antitumor, anti-inflammatory, anticancer, antidiabetic, anti-proliferative and immunomodulatory effects. The active compounds in the content of propolis vary depending on the plants that are the source of propolis, the region where the bees are and the season. Propolis is chemically composed of 50% plant resins, 30% waxes, 10% essential oils, 5% pollens and 5% other organic substances and minerals. Propolis shows effective antioxidant and antimicrobial activities. Antioxidants are defensive factors against the effects of free radicals and reactive oxygen and nitrogen species. Propolis contributes the prevention of ailments related with oxidative stress such as cancer, aging, and cardiovascular diseases due to its powerful antioxidant activity. Propolis is one of the natural antibiotics characterized by antifungal, antibacterial and antiviral effects. It acts both against Gram negative and Gram positive bacteria. It has a fungicidal effect on a number of species of fungi. Propolis is a natural product which shows a wide range of bioactive properties.

Keywords: Propolis, bioactive, antioxidant, antimicrobial

ÖZET

Propolis, bal arılarının bitki kısımlarından, tomurcuklardan ve eksüdalardan toplanan maddelerden ürettiği doğal reçineli bir karışımdır. Propolis, çok çeşitli biyoaktif bileşiklerin değerli bir kaynağıdır. Bu bileşikler, antioksidan, antibakteriyel, antiviral, antifungal, antitümör, antiinflamatuar, antikanser, antidiyabetik, anti-proliferatif ve immünomodülatör etkiler gösterir. Propolisin içeriğindeki aktif bileşikler propolisin kaynağı olan bitkilere, arıların bulunduğu bölgeye ve mevsime göre değişiklik gösterir. Propolis kimyasal olarak %50 bitki reçinesi, %30 mum, %10 esansiyel yağlar, %5 polen ve %5 diğer organik maddeler ve minerallerden oluşur. Propolis etkili antioksidan ve antimikrobiyal aktiviteler gösterir.

Antioksidanlar, serbest radikallerin ve reaktif oksijen ve nitrojen türlerinin etkilerine karşı savunma faktörleridir. Propolis, güçlü antioksidan aktivitesi sayesinde kanser, yaşlanma ve kardiyovasküler hastalıklar gibi oksidatif strese bağlı hastalıkların önlenmesine katkı sağlar. Propolis, antifungal, antibakteriyel ve antiviral etkileri olan doğal antibiyotiklerden biridir. Hem Gram negatif hem de Gram pozitif bakterilere karşı etkilidir. Bir dizi mantar türü üzerinde mantar öldürücü etkiye sahiptir. Propolis, çok çeşitli biyoaktif özellikler gösteren doğal bir üründür.

Anahtar kelimeler: Propolis, biyoaktif, antioksidan, antimikrobiyal

SELF-HEALING POTENTIAL OF ASPHALT MIXTURES AT DIFFERENT MICROWAVE HEATING TIMES

Zemad Anjum Ojellah

Department of Civil Engineering, University of Engineering and Technology Taxila, Pakistan

Dr. Syed Bilal Ahmed Zaidi

Department of Civil Engineering, University of Engineering and Technology Taxila, Pakistan

ABSTRACT

Pavement damage caused by cracking is typically expensive to repair. Evaluating and implementing new technologies that can heal the cracks of asphalt pavement is essential. The use of steel wool fiber not only reduces the rehabilitation cost but also enhances the service life of the pavement. A laboratory approach to achieve maximum healing is by the process of microwave heating, which involves the addition of steel wool fibers (SWF) in asphalt mixture, which causes bitumen to melt and flow into the cracks leading to crack healing as the temperature rises above a certain threshold. In this research, different steel wool fibers contents of 0.2%, 0.4%, 0.6%, and 0.8% by weight of asphalt mixture were used. Temperature Measurements at different heating times were conducted using an infrared thermometer to evaluate optimum Healing temperature. Furthermore, the Three-Point Bending test was conducted on test samples before and after microwave heating to evaluate Healing Level (HL%) and optimum microwave heating time. Experimental results revealed that microwave heating has a significant potential to heal asphalt mixture having steel wool fiber. It was observed that samples have shown better healing at the temperature of 75°C, and sample with 0.6% steel wool fibers has gained the Healing Level of 80% at the 50s, which is better as compared to other samples.

Keywords: Asphalt Mixture, Steel Wool Fiber (SWF), Microwave Heating, Healing Level, Three-Point Bending Test

MODELING OF THE GEOTHERMAL ENERGY MINING WITH SPENT OIL OR GAS BOREHOLE

A. L. Vorontsova, A. O. Kostikov, N. D.Petrenko

A. Pidhorny Institute of Mechanical Engineering Problems of
the National Academy of Science of Ukraine

ABSTRACT

Hot dry rock (HDR) is an alternative energy source with significant potential. The use of a spent oil or gas borehole significantly reduces the capital expenditures of a geothermal unit building. A borehole heat exchanger can be constructed by installing a heat-insulated tubing into borehole. A coolant is pumped to the annular space between the casing and the tubing. Moving downward, the coolant removes heat from the HDR and then flows upward inside the tubing.

To simulate thermal processes a mathematical model is composed. A non-stationary two-dimensional heat conduction equation is considered in HDR.

$$c\rho\frac{\partial T}{\partial \tau}=\frac{1}{r}\frac{\partial}{\partial r}\left(\lambda r\frac{\partial T}{\partial r}\right)+\frac{\partial}{\partial z}\left(\lambda\frac{\partial T}{\partial z}\right), \tag{1}$$

The quasi-stationary energy equation is written separately for the descending and ascending flow of the coolant.

$$\begin{aligned} &w_1\rho c r_1\frac{\partial T_1}{\partial z}=2k\left(T_1(\tau,z)-T_2(\tau,z)\right),\\ &w_2\rho c\left(r_3^2-r_2^2\right)\frac{\partial T_2}{\partial z}=2r_3\alpha\left(T(\tau,r_4,z)-T_2(\tau,z)\right)+2r_2k\left(T_2(\tau,z)-T_1(\tau,z)\right). \end{aligned} \tag{2}$$

Equations (1) and (2) are conjugated by the Robin boundary condition, which describes the heat transfer on the casing

$$\lambda\left.\frac{\partial T}{\partial r}\right|_{r_4}=\alpha\left(T(\tau,r_4,z)-T_2(\tau,z)\right). \tag{3}$$

The velocities of the coolant w_1 and w_2 are calculated from its flow rate, the radii of the annular channel r_3 and r_2, and the inner radius of the tubing r_1. To determine the temperature of the ascending T_1 and descending T_2 coolant and HDR temperature T, an iterative technique was developed using the finite difference method. One iteration includes three consecutive steps:

– calculating convective heat transfer coefficient α on the casing and heat transfer coefficient k through the tubing;

– solving equations (2) at known temperature T obtained from the previous iteration;

– solving equation (1) with boundary condition (2) at known temperature T_2 obtained from the current iteration.

The calculations were performed for a borehole typical for Ukrainian gas fields. The calculation results showed that up to 400 kW of heat can be sustainably mining from one borehole of 5 km deep.

HYBRID METHODS IN ENERGY-PHYSICAL CONTROL OF THE ENVIRONMENT

Mamedkhan M.I., Beketayeva M.T.

Al-Farabi Kazakh National University, Kazakhstan

ABSTRACT

In energy and physical monitoring, monitoring the parameters of the natural environment is a much more complex task, which is found in certain fields of technology, chemistry, physics, and biology. The large number of normalized chemicals and physical parameters, the unpredictable variability and complexity of the composition of unpredictable samples, the global scale of fields, the human factor require a special approach to organizing such observations in order to prevent environmental violations and accidents, often aimed at hiding traces.

Sampling and preparation of samples for quantitative analysis is formed by the identification signal itself, at which time such a design of automated hybrid control systems is most appropriate, and the sample itself as transport (mobile) phases. Analytical systems based on this approach practically ‘independently’ prepare comparative preparations (solutions) during the analysis and concentrate the Substances analyzed during the analysis, capable of sampling. An example of this approach is fluorescent (fluorimetric) detectors developed at the RSciA, which provide a lower detection limit of three to four orders compared to other methods. Here, the Cherenkova-Vavilova inhibitory radiation is used as a source of excitation of fluorescence sludge, and for further repetition of samples, sampling and its concentration (100 times) by changing the polarization mark is carried out in layered selective absorbers (electropolarizing sorbents).

Thus, such hybrid methods are able to carry out 30 types of samples in automatic mode without contribution from the “target” analyzed substances and for full chemical analysis and record the fact of exceeding the normal content of the component, control the parameters of the natural environment in energy and physical monitoring.

Keywords: control, component, environment, hybrid methods, samples.

A THEORETICAL RESEARCH FOR THE ANTICANCER PROPERTIES OF VITAMIN D

Faik GÖKALP

Kırıkkale University, Education Faculty, Department Of Mathematics and Science Education, Science Education, Yahşihan/Kırıkkale, 71450 Turkey

ORCID ID: https://orcid.org/0000-0003-4363-3839

ABSTRACT

Vitamin D is a promosing target in the treatment of bone and mineral especially cancer disorders (1). It is an important therapeutic agent for inhibiting prostate cancer. It regulate prostate cell (2). Choloesterol is required to produce Vit-D with the sun exposure docking complex of HMG-CoA Reductase (pdb id: 1DQ8) (3) downloaded from RCSB PDB (doi: 10.2210/pdb1dq8/pdb) (4). Vitamin D is expressed as a group of sterols that dissolve in fat but do not dissolve in water and act as a hormone-like because it reaches every organ and tissue through its receptors and performs important functions (5) Vitamin D deficiency is an increasing health problem in the world. One of the risk factors for colorectal cancer is due to low vitamin D levels. The active form of vitamin D is 1,25-Dihydroxycholecalciferol, known as calcitriol (6). Vitamin D shows its negative effects on cancer cells through programmed cell death, in other words apoptosis (7). In this study, the inhibition effect of vitamin D on cancer pathways was determined by comparing it with the doking scores. Vitamin D is an important study in terms of determining the inhibition effect on cancer cell receptors as a ligand and directing experimental studies by preventing loss of time and material.

Keywords: Vitamin D, cancer, docking

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TEKSTİL ATIKSUYUNUN ADSORPSİYON VE MEMBRAN FİLTRASYON HİBRİT SİSTEMİ İLE ARITIMI

TREATMENT OF TEXTILE WASTEWATER BY ADSORPTION AND MEMBRANE FILTRATION HYBRID SYSTEM

Deniz İzlen ÇİFÇİ

Doç. Dr., Tekirdağ Namık Kemal Üniversitesi, Çorlu Mühendislik Fakültesi, Çevre Mühendisliği Bölümü, Çorlu-Tekirdağ (sorumlu yazar)

Ali Rıza DİNÇER

Doç. Dr., Tekirdağ Namık Kemal Üniversitesi, Çorlu Mühendislik Fakültesi, Çevre Mühendisliği Bölümü, Çorlu-Tekirdağ

Feriha KARACA

Yüksek Lisans Öğrencisi, Tekirdağ Namık Kemal Üniversitesi, Çorlu Mühendislik Fakültesi, Çevre Mühendisliği Bölümü, Çorlu-Tekirdağ

ÖZET

Tekstil endüstrisi su tüketimi en yüksek olan endüstrilerden biri olup, oluşan atıksuda çeşitli kimyasal, boya ve tuz içeriğinden dolayı arıtımı oldukça önemlidir. Yaygın olarak kullanılan arıtma sistemlerinin çoğu renk giderimi sağlamamakta ancak bu arıtılmış sularının geri kazanılarak proses içerisinde tekrar kullanımı mümkün olamamaktadır. Adsorpsiyon prosesi tekstil endüstrisi gibi renk içeriğine sahip atıksularda organik madde ve renk giderimi için kullanılan yaygın proseslerden biridir. Aktif karbon yüksek maliyetine rağmen organik madde ve renk gideriminde olduça yüksek giderim verimi sağlayan bir adsorban olduğundan, adsorpsiyon prosesinde en çok tercih edilen adsorbanlardan biridir. Yine de aktif karbon ile adsorpsiyon prosesi, çeşitli metal ve tuz içeriği bulunması ve aktif karbonun tam olarak çöktürülerek arıtılmış sudan ayrılmamasından dolayı arıtılan atıksuyunun geri kazanılarak tekrar kullanımı mümkün olamamaktadır. Membran filtrasyon sistemleri atıksu arıtımı ve geri kazanımında oldukça yaygın kullanılan bir sistem olup, bu sistemde filtrenin tıkanması ve dolayısı ile akı problemi en önemli işletme sorunudur. Bu yüzden de membran filtrasyon öncesinde atıksuyun ön arıtımı ve membran filtrasyona gelen kirlilik yükünün azaltılması önemli olmaktadır.

Bu çalışmada boyama faaliyeti gösteren tekstil endüstrisi atıksuyunun adsorpsiyon ve membran filtrasyon hibrit sistem ile arıtımı araştırılmıştır. Çalışmada adsorban olarak toz aktif karbon kullanılmış olup, aktif karbon dozu ve atıksu pH değerininin adsorpsiyonda KOİ ve renk giderimine etkisi araştırılmıştır. En iyi KOİ ve renk giderimi sağlanan aktif karbon dozu ve pH değerinde arıtılan su NP010 nanofiltrasyon prosesinde 5 bar basınç altında arıtılarak akı değerleri ve KOİ ve renk giderimi incelenmiştir. Adsorpsiyon prosesinde en iyi organik madde ve renk giderimi pH 5 değerinde ve 5 g/L aktif karbon dozunda elde edilmiş olup, bu koşullarda arıtım sonrasında %77,5 KOİ, %97,9 UV_{254}, %97,6 UV_{280}, %97,1 RES-436, %97,5 RES-525, %97,7 RES-620 giderimi elde edilmiştir. NP010 nanomembranı ile 5 bar basınç altında 60 dakikada toplam akı değeri ise 153,3 L/m^2.sa olarak belirlenmiştir.

Anahtar Kelimeler: adsorpsiyon, atıksu arıtımı, membrane filtrasyon, tekstil atıksuyu

ABSTRACT

The textile industry is one of the industries with the highest water consumption, and its treatment is very important due to the content of various chemicals, dyes and salt in the

wastewater. Most of the commonly used treatment systems do not provide color removal but it is not possible to recover these treated water and reuse it in the process. The adsorption process is one of the common processes used for the removal of organic matter and color in wastewater with color content such as the textile industry. Activated carbon is one of the most preferred adsorbents in the adsorption process despite its high cost, since it is an adsorbent that provides high removal efficiency in organic matter and color removal. Nevertheless, it is not possible to recover and reuse the treated wastewater by the adsorption process with activated carbon due to the presence of various metal and salt content, and the fact that the activated carbon cannot be totally separated from the treated wastewater by precipitation. Membrane filtration systems are a widely used system in wastewater treatment and recovery, and the clogging of the filter and thus the flux problem in this system is the most important operational problem. Therefore, it is important to pre-treatment the wastewater before membrane filtration and to reduce the pollution load on the membrane filtration.

In this study, the treatment of textile industry wastewater, which has dyeing activity, with adsorption and membrane filtration hybrid system was investigated. Powder activated carbon was used as adsorbent in the study, and the effect of activated carbon dose and wastewater pH value on COD and color removal in adsorption were evaluated. After wastewater were treated the best COD and color removal conditions by adsorption, treated wastewater were recovery under 5 bar pressure in the NP010 nanofiltration process, and the flux values and COD and color removal were investigated. In the adsorption process, the best organic matter and color removal was achieved at pH 5 and at 5 g/L activated carbon, and 72.7% COD, 97.9% UV_{254}, 97.6% UV_{280}, 97.1% RES-436, 97.5% RES-525, 97.7% RES-620 removal were achieved in the textile wastewater. With the NP010 nanomembrane under 5 bar pressure, the total flux value in 60 minutes was determined as 153.3 $L/m^2.h$.

Keywords: adsorption, wastewater treatment, membrane filtration, textile wastewater

BİYOLOJİK OLARAK ARITILMIŞ TEKSTİL ATIKSUYUNDAN KOAGÜLASYON VE MEMBRAN FİLTRASYON YÖNTEMİ İLE SU GERİ KAZANIMI

WATER RECOVERY FROM BIOLOGICALLY TREATED TEXTILE WASTEWATER BY COAGULATION AND MEMBRANE FILTRATION METHOD

Deniz İzlen ÇİFÇİ

Doç.Dr., Tekirdağ Namık Kemal Üniversitesi, Çorlu Mühendislik Fakültesi, Çevre Mühendisliği Bölümü, Çorlu-Tekirdağ (sorumlu yazar)

Ali Rıza DİNÇER

Doç.Dr., Tekirdağ Namık Kemal Üniversitesi, Çorlu Mühendislik Fakültesi, Çevre Mühendisliği Bölümü, Çorlu-Tekirdağ

Feriha KARACA

Yüksek Lisans Öğrencisi, Tekirdağ Namık Kemal Üniversitesi, Çorlu Mühendislik Fakültesi, Çevre Mühendisliği Bölümü, Çorlu-Tekirdağ

ÖZET

Ergene Havzasında bulunan endüstrilerin büyük çoğunluğu tekstil sektörüne ait olup, tekstil endüstrisinde tüketilen suyun fazla olmasından dolayı su geri kazanımı büyük önem taşımaktadır. Tekstil atıksuyu klasik atıksu arıtıma tesislerinde arıtımı sonrasında hala daha organik madde ve renk içeriğine sahip olduğundan bu suların tekrar kullanılamamaktadır. Ayrıca bu renk içeren suların alıcı ortama deşarj edilmesi su canlıları için toksik etkiye sebep olmaktadır. Bu yüzden yüksek su tüketimine sahip tekstil endüstrisi atıksularının ileri arıtımının sağlanarak geri kazanılması ve proses içerisinde tekrar kullanılması hem su tüketimi hemde ekotoksik etkilerden dolayı önemli olmaktadır. Membran filtrasyon sistemleri su geri kazanımında yaygın olarak kullanılan sistem olup, KOİ, tuz ve metal gideriminde yüksek verime sahiptir. Ancak bu sistemlerin yüksek basınç altında çalışması maliyeti arttırmakla birlikte tıkanma problemleri de ortaya çıkarmaktadır. Bu yüzden membran filtrasyon öncesi atıksularda organik madde, katı madde ve renk içeriğinin mümkün olduğunca azaltılması gerekmektedir. Böylece membran filtrasyonun daha yüksek akı değerlerinde ve daha az tıkanma ile çalışması mümkün olabilmektedir.

Bu çalışmada biyolojik olarak arıtılmış tekstil atıksuyunun $FeCl_3$ ve $Al_2(SO_4)_3.17H_2O$ koagülantları ile koagülasyonu sonrasında NP010 nanofiltrasyon membranı ile su geri kazanımı araştırılmıştır. Bu amaç çerçevesinde koagülasyon prosesinde en iyi KOİ ve renk (RES-436, RES-525, RES-620) giderimi sağlanan $FeCl_3$ ve $Al_2(SO_4)_3.17H_2O$ koagülant dozu ve pH değeri belirlenmiştir. Belirlenen koagülasyon koşullarında arıtılan tekstil atıksuyu 5 bar basınç altında NP010 nanofiltrasyon membranından geçirilerek akı değerleri belirlenmiş ve çıkış suyunda KOİ ve renk (RES-436, RES-525, RES-620) konsantrasyonları belirlenmiştir. NP010 nanfiltrasyon membranı ile 5 bar basınç altında yapılan arıtımda ise $Al_2(SO_4)_3$ koagülasyonu ile arıtılmış suda ilk 10 dakikada 51,7 L/m^2.sa akı elde edilirken, 60 dakika sonunda 250,0 L/m^2.sa toplam akı değeri hesaplanmıştır. $FeCl_3$ koagülasyonu ile arıtılan suda ise ilk 10 dakikada akı 43,3 L/m^2.sa iken, 60 dakika sonunda 236,7 L/m^2.sa toplam akı değeri elde edilmiştir.

Anahtar Kelimeler: koagülasyon, membran filtrasyon, su geri kazanımı, tekstil atıksuyu

ABSTRACT

Most of the industries in the Ergene Basin belong to the textile industry, and water recovery is of great importance due to the high amount of water consumed in the textile industry. Since textile wastewater is still treated in conventional wastewater treatment plants, treated wastewater still has organic matter and color content, so these waters cannot be reused. In addition, the discharge of water containing this color into the receiving environment causes toxic effects for aquatic organisms. Therefore, the recovery of textile industry wastewater with high water consumption by providing advanced treatment and re-use in the process is important due to both water consumption and ecotoxicologic effects. Membrane filtration systems are widely used in water recovery and have high efficiency in COD, salt and metal removal. However, the operation of these systems under high pressure increases the cost and also causes clogging problems. Therefore, before membrane filtration, organic matter, solid matter and color content in wastewater should be reduced as much as possible. Thus, it is possible for membrane filtration to operate at higher flux values and with less clogging.

In this study, water recovery with NP010 nanofiltration membrane after coagulation of biologically treated textile wastewater with $FeCl_3$ and $Al_2(SO_4)_3.17H_2O$ coagulants were investigated. For this purpose, $FeCl_3$ and $Al_2(SO_4)_3.17H_2O$ coagulant dose and pH value were determined for the best COD and color removal (RES-436, RES-525, RES-620) in the coagulation process. The textile wastewater treated under the specified coagulation conditions was passed through the NP010 nanofiltration membrane under 5 bar pressure, and its flux values were determined and the COD and color (RES-436, RES-525, RES-620) concentrations in the effluent were determined. In the treatment with NP010 nanfiltration membrane under 5 bar pressure, 51.7 $L/m^2.h$ was obtained in the first 10 min in the water treated with $Al_2(SO_4)_3$ coagulation, while the total flux value was 250.0 $L/m^2.h$ at the end of 60 minutes. In the water treated with $FeCl_3$ coagulation, the flux was 43.3 $L/m^2.h$ in the first 10 minutes, and 236.7 $L/m^2.h$ total flux value was obtained at the end of 60 minutes.

Keywords: coagulation, membrane filtration, water reuse, textile wastewater

EFFICIENCY CALCULATION OF HYDROGEN FUEL AIRCRAFT

Atul Bhattad

Associate Professor, Department of Mechanical Engineering, Koneru Lakshmaiah Educational Foundation,

Green Fields, Vaddeswaram, (AP), 522502

ABSTRACT

As countries pursue accomplishing net-zero carbon economies, business flying will be perhaps the most troublesome areas to decarbonize. Petroleum derivative's energy-thickness advantage is too difficult to even think about beating, the contention goes, and instead of attempt to defy that, it may bode well to proceed with the utilization of oil in carriers and to target counter balancing their emanations utilizing some negative fossil fuel by products innovation. Some alternatives like bio-fuels are also in use where fuels are blended with some basic fuels.

Another alternative is hydrogen-fuelled flight. To be carbon-unbiased, the hydrogen should be delivered either with environmentally friendly power or with petroleum gas furnished with carbon catch and capacity. Both of the world's significant carrier makers are viewing at the lightest component as one choice for diminishing their client’s carbon impression. Use of hydrogen fuel reduces the consumption of fuels and is one of the promising fuel used in future. Amanda Simpson, VP for examination and innovation at Airbus Americas, says Airbus will choose by 2025 whether the market can uphold hydrogen-filled aircrafts. Accepting that it can, the organization projects its first hydrogen aircrafts will enter administration in 2035. In present case, the variation of mass flow rate and fuel consumption rate with respect to thrust force can be seen.

Keywords: Aircraft, Hydrogen, Fuel, Thrust, Fuel consumption, Flow rate

REGULATORY FRAMEWORK CHALLENGES AND BARRIERS: A QUALITATIVE APPROACH IN REVEALING THE EFFECTS ON MALAYSIAN NANOTECHNOLOGY INDUSTRY DEVELOPMENT

Dr. Faisal Zulhumadi[1*], Dr. Kamaruddin Radzuan [2], Mr. Mazri Yaakob[3]

[1,2,3]Universiti Utara Malaysia, School of Technology Management and Logistics (STML), Technology Management Department, Sintok, Malaysia.

[1]ORCID No: https://orcid.org/0000-0002-2545-7002

[3]ORCID No: https://orcid.org/0000-0001-8133-1650

ABSTRACT

The Malaysian government, Under the Eighth Malaysia Plan (2001-2005), has since launched the initial drive to push nanotechnology into the forefront of scientific research in 2001 with its first inclusion. However, many years—now we are in the 12th Malaysia Plan (2021-2025)—had passed without witnessing significant societal-wide impact, which it has been expected to be able to do. The development of the nanotechnology industry has had its fair share of developmental issues, such as high start-up costs, lack of regulatory framework, fairly slow development, insufficient infrastructure, uninformed public, lack of awareness, unreliable utilities, lack of educational support, lack of collaboration between stakeholders in the industry, etc. Among the issues that have been highlighted in the literature is related to regulatory framework, more specifically Acts and regulations. Therefore, this study attempted to discover and obtain a greater and deeper understanding of regulatory framework issues that has thus far affected the development of nanotechnology in Malaysia. This paper presents the findings that were gathered through a qualitative approach involving 15 interviews with qualified individuals of senior positions in certified nanotechnology-based companies. These companies have been verified by NanoVerify Sdn. Bhd., which is local body that is responsible for facilitating the development of the Malaysian nanotechnology industry through verification, certification, and commercialization initiatives. An open-ended interview protocol was developed which consisted of the following questions: “What are the regulatory framework problems that your company face in the Malaysian nanotechnology industry?”, “What is the solution to resolving those problems?”, and “What is your company’s regulatory framework strategy and how is it implemented into your nanotechnology development?” The 15 respondents’ individual interview sessions, which ranged from 35 minutes to more than 3 hours, were then transcribed word-for-word, coded, sorted, and categorized according to the major themes that were identified based on the literature, and then analyzed and presented in the final report. These respondents were from companies operating in the automotive, electronics, textiles, cosmetics, lubricants, and agriculture industries. The results of this study indicated that there is a dire need to establish related Acts in order to regulate and monitor the development of this promising technology. In summary, regulatory framework become one of the main issues in nanotechnology development in Malaysia, and in order to sustain the growth of this promising industry, all stakeholders need to play a greater part in ensuring the establishment of the required regulatory framework in order to continue to advance this technology for the benefit of the country and the public.

Keywords: Nanotechnology Management, regulatory framework, industrial development, qualitative approach, Malaysia.

ADANA BÜYÜK SAAT KULESİNİN DENEYSEL DİNAMİK ÖZELLİKLERİNİN BELİRLENMESİ

DETERMINATION OF EXPERIMENTAL DYNAMIC PROPERTIES OF ADANA BÜYÜK SAAT TOWER

Hakan ERKEK

Doktora Öğrencisi, Fırat Üniversitesi Fen Bilimleri Enstitüsü İnşaat Mühendisliği Anabilim Dalı (Sorumlu Yazar)

Yusuf CALAYIR

Prof. Dr., Fırat Üniversitesi Mühendislik Fakültesi İnşaat Mühendisliği Anabilim Dalı

Musa YETKİN

Doktora Öğrencisi, Fırat Üniversitesi Fen Bilimleri Enstitüsü İnşaat Mühendisliği Anabilim Dalı

ÖZET

Tarihi yapılar, işlevleri gereği bulundukları bölgedeki toplumların sosyal ve iktisadi hayatlarında büyük bir öneme sahiptirler. Bu yapılar, geçmiş medeniyetler ile günümüz arasında bağ kuran ve medeniyetlerin yaşam tarzları hakkında fikir veren kültürel bir mirastır. Bu miras yapıları, maruz kaldıkları deprem, yangın, sel, rüzgâr gibi doğal afetler, ısı değişimleri ve insanlar tarafından verilen zararlar nedeniyle bir kısmı yıkılmış bir kısmı ise ciddi hasarlar görmüştür. Bu yapıların gelecek kuşaklara özellikleri bozulmadan aktarılabilmesi için uygun modelleme teknikleri kullanılarak yapısal analizlerinin gerçekleştirilmesi ve gerektiğinde onarım ve güçlendirilmelerinin yapılması gerekmektedir. Yapısal analizler gerçekleştirilirken yapının mevcut modal parametrelerinin veya dinamik karakteristiklerinin doğru bir şekilde bilinmesi oldukça önem arz etmektedir. Bu dinamik karakteristikler, doğal frekanslar, mod şekilleri ve sönüm oranlarıdır. Günümüzde teorik ve deneysel yöntemler kullanılarak yapıların dinamik karakteristikleri belirlenebilmektedir. Bu çalışmada, tahribatsız bir deney yöntemi olan operasyonel modal analiz yöntemi (OMA) kullanılmış ve yığma bir taşıyıcı sisteme sahip olan tarihi Adana Büyük Saat Kulesinin, çevresel titreşim testleri gerçekleştirilmiştir. Testler için 8 hassas tek eksenli ivmeölçer kullanılmış olup bu ivmeölçerler saat kulesinin 4 farklı yüksekliği boyunca her bir ölçüm noktasına 2 adet ivmeölçer olacak yerleştirilmiştir. Bu testlerin sonucunda spektral yoğunluk fonksiyonları yardımıyla saat kulesinin ilk 4 frekansı ve bu frekanslara ait mod şekilleri belirlenmiştir.

Anahtar Kelimeler: Adana Büyük Saat Kulesi, Operasyonel Modal Analiz Yöntemi, Doğal Frekans, Yığma Yapı, Tarihi Yığma Saat Kulesi

ABSTRACT

Historical buildings, due to their functions, have a great importance in the social and economic life of the communities in the region where they are located. These structures are a cultural heritage that connects past civilizations with the present and gives an idea about the lifestyles of civilizations. Some of these heritage buildings were destroyed and some were severely damaged due to natural disasters such as earthquakes, fires, floods, wind, heat changes and human damage. In order for these structures to be transferred to future generations without deteriorating their properties, it is necessary to carry out structural analysis using appropriate modeling techniques and to repair and strengthen them when necessary. While performing structural analysis, it is very important to know the current

modal parameters or dynamic characteristics of the structure correctly. These dynamic characteristics are natural frequencies, mode shapes and damping ratios. Today, the dynamic characteristics of the structures can be determined using theoretical and experimental methods. In this study, the operational modal analysis method (OMA), which is a non-destructive test method, was used and environmental vibration tests of the historical Adana Great Clock Tower, which has a masonry carrier system, were performed. For the tests, 8 precision uniaxial accelerometers were used, and these accelerometers were placed along 4 different heights of the clock tower as 2 accelerometers at each measurement point. As a result of these tests, the first 4 frequencies of the clock tower and the mode shapes of these frequencies were determined with the help of spectral density functions.

Keywords: Adana Büyük Saat Tower, Operational Modal Analysis Method, Natural Frequency, Masonry Buildings, Historical Masonry Clock Tower

GEÇİRGEN ORGANİK BİYO-DUVAR SİSTEMİ

PERMEABLE ORGANIC BIO-WALL SYSTEM

Emre Burcu ÖZKARAOVA

Doç. Dr., Ondokuz Mayıs Üniversitesi Mühendislik Fakültesi Çevre Mühendisliği Bölümü,

(Sorumlu Yazar)

Neşe ÖZDEMİR

Yüksek Lisans Öğrencisi, Ondokuz Mayıs Üniversitesi Fen Bilimleri Enstitüsü Mühendislik Anabilim Dalı

ÖZET

Çevresel sorunların son yıllarda artış gösterdiği endüstriyel ve tarımsal kaynaklı kirlenmeler canlı yaşamı için tehlike oluşturmaya başlamıştır. Hızlı nüfus artışıyla kirlilik unsurlarının da artması temiz çevre kavramının gerekliliğini ortaya çıkarmıştır. Tarımsal kaynaklı kirlilik unsurları daha çok tarımsal üretim sonucu oluşan bitkisel atıklar, tarımsal sanayi atıkları, aşırı gübrelemeden dolayı oluşan tuzluluk ve ağır metal birikimi, pestisitler ve mikroorganizmalar birlikte yeraltı suyunda ciddi kirlilik birikimini meydana getirmektedir.

Mevcut çalışmada; Biyoduvar (biowall) olarak adlandırılan bu sistemlerde yeraltı sularındaki kirlilik parametrelerinin giderimini sağlayabilecek organik artıklar kullanılmaktadır. Organik malzeme, doğal olarak oluşan veya çoğaltılmış mikroorganizmalar tarafından bir enerji kaynağı olarak kullanılır ve önemli kirletici maddelerin (COC) duvardan geçerken bozunduğu önemli derecede indirgeyici ve oksijensiz bir ortam oluşturur. Uygun materyaller yapılan deneme deneyleri sonucu bulunarak kirlilik durumuna en uygun biyoduvar sistemi geliştirilmektedir.

Mikropların adsorpsiyonunu ve tutulmasını ve kirletici maddelerin biyolojik olarak parçalanmasını desteklemek için orijinal toprağınkinden daha büyük gözeneklilik ve organik içeriğe sahip yerinde oluşturulmuş bir ortama başvurur. Ayrıca, mikrobiyal büyümeyi kolaylaştırmak için biyoduvar'a oksijen ve besinler sağlanır.

Biyoduvar sistemi, yeraltı suyunu yerinde arıtmak için biyolojik işlemlere dayanan bir tür geçirgen reaktif bariyerdir (PRB). Bu çalışma; Bir biyolojik duvar, bir karbon kaynağı ve muhtemelen mikroorganizmalardan oluşan ortamın yeraltı suyu akışına dik olarak konumlandırılan ve kirletici bulutuyla kesişen bir hendek içine yerleştirilmesini içermektedir.

Çalışma kapsamında geçirgen organik biyolojik duvarlar kullanılarak yeraltı suyunun iyileştirilmesi ve sistem içeriği hakkında bilgi verilecektir. Biyoduvar sisteminin çeşitli kavramları, tasarım ilkeleri ve alternatif tasarımları açıklanacaktır.

Anahtar Kelimeler: Biyoduvar, Kirletici, Organik Artıklar

ABSTRACT

Industrial and agricultural pollution, where environmental problems have increased in recent years, have begun to pose a danger to life. With the rapid population growth, the increase in pollution elements has revealed the necessity of the concept of clean environment. Agricultural pollution elements mostly result from agricultural production, plant wastes, agricultural industry wastes, salinity and heavy metal accumulation due to excessive fertilization, pesticides and microorganisms together cause serious pollution accumulation in groundwater.

In the current study; In these systems called biowalls, organic residues that can provide removal of pollution parameters in groundwater are used. The organic material is used as an energy

source by naturally occurring or propagated microorganisms and creates a significantly reducing and oxygen-free environment in which major contaminants (COC) decompose as they pass through the wall. Suitable materials are found as a result of trial experiments and the most suitable biowall system is developed for the pollution situation.
It uses an in situ created environment with greater porosity and organic content than that of the original soil to promote the adsorption and retention of microbes and biodegradation of contaminants. In addition, oxygen and nutrients are provided to the biowall to facilitate microbial growth.

The biowall system is a kind of permeable reactive barrier (PRB) that relies on biological processes to treat groundwater in situ. This work; It involves the placement of a biological wall, a carbon source and possibly microorganisms media in a ditch positioned perpendicular to the groundwater flow and intersecting the pollutant cloud.

Within the scope of the study, information about the improvement of groundwater by using permeable organic biological walls and the content of the system will be given. Various concepts, design principles and alternative designs of the biowall system will be explained.

Keywords: Bio-Wall, Polluting, Organic Residues

PREDICTING FARM PERFORMANCE: DO INDICATORS OF FARM ECONOMIC VIABILITY AND EFFICIENCY SIGNIFY OF PROBABILITY OF BANKRUPTCY?

Assoc. Prof. Dr. Jūratė Savickienė

Faculty of Bioeconomy Development, Vytautas Magnus University Agriculture Academy, Lithuania

Prof. Dr. Astrida Miceikienė

Chancellor of Agriculture Academy at Vytautas Magnus University, Lithuania

ABSTRACT

Following the analysis of the indicators characterising the economic viability, efficiency and bankruptcy probability of farms proposed by researchers and employed in practice, the relationships between the indicators and their capacity to predict the prospects of farm activities as well to assess whether or not the indicators are indicative of the same patterns of farm activity, several different researchers' approaches have been identified. Certain researchers have been claiming that all of the indicators provide the same farm performance prospects, while others consider economic viability and efficiency to provide long-term farm performance prospects, while bankruptcy probability–negative profitability in the short term. The methods of convergent and discriminant validation employed allowed for analysis of the risk of potential overlap between the index of economic viability of a family farm and farm economic efficiency coefficient with the already available bankruptcy probability prediction models. For this purpose, categorical regression analysis was employed. This enabled the authors to determine that the index of economic viability of a family farm and coefficient of farm economic efficiency did not repeat the already available and used bankruptcy probability prediction models. Summarizing the results, it could be claimed that the index of economic viability of a family farm and coefficient of farm economic efficiency are not suitable as an alternative for assessment of the bankruptcy probability.

ADAPTING COMMUNITY EDUCATION AS A VEHICLE FOR CHANGE IN THE YOUNG ADULTS IN GHANA

Isaac Kofi Biney

PhD, University of Ghana, Legon, Accra, Ghana

ABSTRACT

The paper reflects on community education as a labour intensive work away from traditional adult education programmes to serve as a tool for change amongst the young adults in deprived communities. Educating for growth and enterprising mindsets could be the purpose of adult education programmes in Ghana because we are confronted with problems of unemployment and poverty. Many young adults are unemployed, and action-oriented education like community education needs intensification to address problems in the communities. This is a case study conducted at Accra Learning Centre in Ghana. In-depth interview guides were developed to solicit meaningful responses from five (5) purposively selected adult learners on distance education programme. The data collected from three specific research questions: (a) how can community education build self-confidence in the young adults? (b) how can community education foster growth and enterprising mindsets in the young adults? and (c) how can community education build self-motivation in the young adults? were analysed using thematic, narrative and interpretivist approaches. The findings emerged are discussed, and the implications for adult education, and the conclusions as well as recommendations are made.

Keywords: Community education, unemployment, poverty, self-confidence, self-motivation, growth and enterprising mindsets, Ghana

GENERALIZED MHD COUETTE FLOW WITH HEAT TRANSFER IN AN ANNULI: THE RIEMANN-SUM APPROXIMATION APPROACH

Sani Isa

Department of Mathematics and Statistics, Yobe State University, Damaturu, Nigeria.

Basant K. Jha

Department of Mathematics, Ahmadu Bello University Zaria, Kaduna, Nigeria.

ABSTRACT

In this study, an investigation of combined effects of electric and magnetic fields on generalized MHD Couette flow of an incompressible and electrically conducting fluid in an annulus formed by two concentric cylinders of infinite length has been carried out. The MHD flow through the annuli is developed due to an applied pressure gradient and impulsive movement of the outer cylinder. It is assumed that, a uniform magnetic field is applied perpendicular to the direction of flow. The solution of the governing partial differential equations is obtained using a combination of Laplace transform and the Riemann sum approximation method of Laplace inversion. Furthermore, exact steady state solution are obtained which coincide with the transient state solution. The effects of the various pertinent flow parameters on the flow are graphically shown. It is observed that separation of fluid at the outer stationary cylinder can be avoided with the aid of combined effects magnetic and electric fields.

SCIENCE, TECHNOLOGY, ENGINEERING, ARTS AND MATHEMATICS AND COLLABORATIVE LEARNING: A REQUIRED SKILLS FOR LEAERNERS

[1]Faruku Aliyu & [2]Corrienna Abdul Talib

[1,2]Faculty of Social Science and Humanities, Universiti Teknologi Malaysia

[1]https://orcid.org/0000-0002-3005-2501 [2]https//orcid.org/0000-0003-2230-3670

ABSTRACT

The nature of skills expected of science and engineering graduate required them to collaborate not only in the classroom setting but also in the laboratories during experimentation to enable share skills, experiences and understanding regarding a phenomenon. It is in view of this that this paper discusses collaborative learning in the science. Some of the collaborative learning discussed in this paper include Think-pair share, Jigsaw Technique, Think-Pair-Share, Scaffolding, Brain writing, Peer Review, Daily Discussion Questions, Break-Out Group Discussions. The paper further discussed some of the benefits of collaborative learning which include developing of higher-level thinking skills, solving problems across teams, developing new products, explaining concepts to other departments, build a collaborative learning community, oral communication, self-management, and leadership skills, promotion of student-faculty interaction, increase in student retention, self-esteem, and responsibility, exposure to and an increase in understanding of diverse perspectives. The paper concluded with recommendations for the suitable activities for learning in the science, technology, engineering, arts and mathematics domains

Keywords: Collaboration, STEAM, Learning domain, required skills

MATEMATİK, MÜZİK VE RENKLERDEKİ ESTETİK UYUMUN BİLGİSAYAR BİLİMLERİ İLE EĞİTİME YANSIMASI

REFLECTION OF AESTHETIC COMPLIANCE IN MATHEMATICS, MUSIC AND COLORS TO EDUCATION WITH COMPUTER SCIENCES

Gamze Sarmaşık ABUR

Dr. Öğr. Üyesi, Muğla Sıtkı Koçman Üniversitesi Eğitim Fakültesi Bilgisayar ve Öğretim Teknolojileri Eğitimi Bölümü

ÖZET

Çoğunlukla insanlar, sanatın ve bilimin birbirinde farklı olduğunu düşünür. Oysa, matematik bilimi doğayı yorumlar. Müzik ve resim ise matematiğin uygulamasıdır. İster sanatta ister bilimde olsun, matematikten uzaklaştıkça, kusurlar artar, uyum bozulur hatta sistem çöker. Leonardo da Vincinin altın oranı doğanın içinde vardır. Doğada, matematikte, resimde ya da müzikte bize güzel gözüken aslında bu altın orandır. İnsan gözünün görebildiği renk tayfında gökkuşağındaki yedi renge karşılık, müzikte yedi nota olması bir rastlantı değildir, doğadaki uyumdur. Renklerin frekansları ile notaların frekansları örtüşmektedir. Bu nedenler ile matematik, resim ve müzik alanlarını, eğitimde, ayrıştırmak yerine birleştirmeliyiz. Renkler ile müzik eğitimi ya da müzik ile resim eğitimi gibi. Çünkü müzik bir matematik alıştırması, resimdeki perspektif çalışması da matematik uygulamasıdır. Zaten bunlar birbirinden ayrı düşünülemez. Bir nesnenin üç boyutlu görüntüsünü almak, modellemek, resmetmek ve hatta bilgisayarı kullanarak üç boyutlu çıktısını alarak somutlaştırmanın yanı sıra nesnenin renginin aynı zamanda bir ses frekansı olarak da karşılığını da işin içine katabiliriz. Hatta üç boyutlu kopyaların içine tat ve koku boyutunu da ekleyebiliriz. Amaç beş duyu organıyla doğayı anlamaya çalışan çocuğun, doğayı soyut olarak yorumlayan matematiği somutlaştırarak algılamasını artırmaktır. Nesne ve renk öğretiminde de aynı yöntem kullanılabilir ama çocukların, kendi modellerini tasarlarken, kendi seçtikleri renkler ve tatlar ile kendi materyalini üretme olanakları olmalıdır. Çünkü çocuklar nesneleri bizim gördüğümüz renklerle ve boyutlarda algılamaz. Sonuç olarak bu bildiride amacımız, çocukların doğayı keşfetme yolculuğunda, matematik, müzik ve resim alanlarının neden bir arada uygulanması gerektiği ve matematiğin somutlaştırılması ve sonra yine soyutlaştırılması aşamasında resim, müzik ve bilgisayar alanlarından nasıl yararlanacağımız konularının aydınlatılmasıdır.

Anahtar Kelimeler: Matematik Bilimi, Renkler ile Müzik Eğitimi, Resimde Müzik Uygulamaları, Matematik Eğitiminde Bilgisayar Uygulamaları, Resim Müzik ve Bilgisayarın Matematik Eğitiminde Beraber Uygulanması

ABSTRACT

People often think that art and science are different from each other. However, the science of mathematics interprets nature. Music and painting are the application of mathematics. Whether in art or science, the further away from mathematics, the more imperfections increase, the harmony deteriorates and even the system collapses. The golden ratio of Leonardo Da Vinci exists in nature. It is actually this golden ratio that looks beautiful to us in nature, mathematics, painting or music. It is not a coincidence that there are seven colors in the rainbow in the color spectrum visible to the human eye, and seven notes in music, it is the harmony in nature. The frequencies of the colors match the frequencies of the notes. For these reasons, we should combine the fields of mathematics, painting and music in education instead of separating them. Like studying music with colors or painting with music. Because music is a math exercise, perspective study in painting is also a math practice. These cannot be considered separately

from each other anyway. In addition to taking a three-dimensional image of an object, modeling, painting and even embodying it by taking a three-dimensional printout using a computer, we can also include the color of the object as a sound frequency. We can even add the dimension of taste and smell to three-dimensional copies. The aim is to increase the perception of the child, who tries to understand nature with his five sense organs, by embodying mathematics that interprets nature in an abstract way. The same method can be used in object and color teaching, but children should have the opportunity to produce their own material with the colors and flavors they choose while designing their own models. Because children do not perceive objects in the colors and sizes we see. In conclusion, our aim in this paper is to elucidate why mathematics, music and painting fields should be applied together in the journey of children discovering nature and how we can make use of painting, music and computer fields in the concretization of mathematics and then its abstraction.

Keywords: Mathematics Science, Music Education with Colors, Music Applications in Painting, Computer Applications in Mathematics Education, Application of Painting Music and Computer in Mathematics Education Together

NUMERICAL ALGORITHMS FOR SOLVING A PROBLEM OF OPTIMAL CONTROL OF STATIONARY HEAT CONDUCTIVITY PROCESS

Liudmyla Hart*, Maria Feshchenko

Oles Honchar Dnipro National University, Faculty of Applied Mathematics, Department of Computational Mathematics and Mathematical Cybernetics, Dnipro, Ukraine.

***ORCID No: https://orcid.org/0000-0003-2617-7851**

ABSTRACT

At present, the numerical modeling of heat transfer processes is acquiring an increasingly significant role, since for modern science and technology a reliable prediction of such processes is necessary, the experimental study of which is difficult and expensive in laboratory or natural conditions.

An important class of applied problems are the problems of controlling the thermal state of the object under study, including the thermostating problems, where it is necessary, due to certain thermal effects, to maintain a given temperature in some part of the computational domain. Distributed or point internal heat sources, such as heaters can act as control. In this paper, we consider a problem of optimal control of sources in the heat conductivity problem, in which control quality is estimated by the quadratic functional of the quality, and the optimality conditions in the optimal control problem are formulated as a system of equations for the original and conjugate states.

We consider the problem of controlling the temperature of an isotropic solid (rod), when the computational domain is $\Omega = \{s \in \mathbb{R}: 0 < s < l\}$. The stationary field when controlling distributed heat sources is determined from the equation

$$-\big(k(s) \cdot x'(s)\big)' + d(s) \cdot x(s) = f(s) + u(s), \quad s \in \Omega \tag{1}$$

with the boundary conditions

$$x(0) = \mu_1, \;\; x(l) = \mu_2 \tag{2}$$

under the usual assumptions that $k(s), d(s), f(s)$ are given continuous functions for $s \in \Omega$, such that

$$k(s) \geq C > 0, \quad d(s) \geq 0, \quad s \in \Omega;$$

$x(s)$ is the sought function for $s \in \Omega$; C, μ_1, μ_2 are given constants [1].

We assume that the temperature is monitored over the entire computational domain, and therefore we take the quality functional in the form

$$\mathcal{J}(u) = \int_0^l (x(s;u) - \varphi(s))^2 \, ds, \tag{3}$$

where $\varphi(s)$ is a given function for $s \in \Omega$ (desired temperature distribution).

Thus, it is required to find a control function $u(s), s \in \Omega$ and the corresponding phase trajectory $x(s;u)$, $s \in \Omega$, that deliver the minimum value to functional (3) under conditions (1), (2) in all Hilbert space $L_2[0,l]$ (the optimal control problem without constraints).

For the approximate solution of the optimal control problem (1)–(3), we used the grid method [1]: we constructed grid analogs of the second order of accuracy for the original and conjugate boundary value problems, for functional $\mathcal{J}(u)$ and for its gradient $\mathcal{J}'(u)$ for all $u(s) \in L_2[0,l]$. To solve the obtained difference schemes, we used the sweep method and to minimize the grid functional under appropriate conditions we used the steepest descent method.

Along with problem (1)–(3), we consider the problems of minimizing auxiliary functionals

$$\mathcal{J}_n(u) = \mathcal{J}(u) + \alpha_n \int_0^l u^2(s)ds, \quad n = 1,2,... \tag{4}$$

under conditions (1), (2), where $\alpha_n > 0$ is numerical parameters, such that $\alpha_n \to 0$, $n \to \infty$. It should be noted that the optimal control problem (1), (2), (4) for each $n = 1,2,...$ is the well-posed problem in the sense of [2] due to the strong convexity of functional (4) on $L_2[0,l]$ under conditions (1), (2). For each fixed $n = 1,2,...$, we approximately solved the problem of minimizing $\mathcal{J}_n(u)$ on $L_2[0,l]$ under conditions (1), (2) using the developed grid algorithms with a given calculation accuracy $\varepsilon_n(\alpha_n) > 0$. We propose as in [3, 4] an effective regularization approach to the approximate solving the original optimal control problem (1)–(3), which provides the construction of a minimizing sequence of approximations for functional (3) under conditions (1), (2). To implement this approach, we created a software product that allows us to analyze the obtained results and study the practical convergence of the constructed numerical algorithms.

Keywords: stationary heat conductivity, optimal control problem, quality functional, grid method, numerical algorithms.

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İSLAM SANATI GEOMETRİK MİMARİ

ISLAMIC ART GEOMETRIC ARCHITECTURE

Yüksek İç Mimar Aysu SARI ÇETİN

Ankara, TÜRKİYE.

ORCID: https://orcid.org/0000-0003-3616-785X

ÖZET

İslam kültürünün çok büyük bir kısmını oluşturan İslam sanatında yer alan geometrik motiflerin günümüze kadar pek çok çeşitli eserleri bulunmaktadır. Dini yapıların mimari formalarında karşımıza çıkan bu motiflerin zamanla gelişerek farklı coğrafyalarda anlamlar taşımasına rağmen motif zenginliğini bakımından daha da ilerlediği görülmektedir. Kullanılan motiflerin belirli bir sistematik biçimde farklı teknikler aracılığıyla uygulanması mimari alanda kalıcı bir şekilde yer edinmesinin sebebi olarak bilinmektedir. İslami mimarlık tarihinde kullanılan malzemelerde bu oranda değişiklikler göstermektedir. Geometrinin gelişmesiyle paralel olarak ilerleyen geometrik motiflerin bilim alanında da yenilikleri beraberinde getirmekte olduğunu görülmektedir. Dünyada birçok örneği bulunan geometrik motiflerin çok eski tarihlere dayandığı verilen örnekler ile görülmektedir. Yakın döneme bakıldığında ise Selçuklu döneminde çeşitli yıldız motiflerinden oluşan geometrik desenler erken Osmanlı döneminde çoklu yıldız motiflerine dönüşmektedir. Geometrik motiflerin bir düzen içerisinde ve belirli bir disiplin anlayışıyla eksiksiz bir biçimde uygulanması İslâm medeniyet tarihinde olduğu görülmektedir.

Anahtar Kelimeler: İslam mimarisi, İslami motifler, Geometrik sanat

ABSTRACT

There are many different works of geometric motifs in Islamic art, which constitute a great part of Islamic culture, to date. Although these motifs, which we encounter in the architectural forms of religious buildings, have developed over time and have meanings in different geographies, it is seen that they have progressed further in terms of the richness of motifs. The application of the motifs used in a certain systematic way through different techniques is known as the reason for their permanent place in the architectural field. The materials used in the history of Islamic architecture vary at this rate. It is seen that geometric motifs, which progress in parallel with the development of geometry, bring along innovations in the field of science. It is seen with the examples given that the geometric motifs, which have many examples in the world, are based on very old dates. Looking at the recent period, geometric patterns consisting of various star motifs in the Seljuk period turn into multiple star motifs in the early Ottoman period. The application of geometric motifs in an order and with a certain discipline understanding is seen in the history of Islamic civilization.

Keywords: Islamic architecture, Islamic motifs, Geometric art

CORRELATION MODELLING BETWEEN CUTTING PARAMETERS AND TANGENTIAL FORCE WHEN TURNING THE REFRACTOR ALLOY USING THE RESPONSE SURFACE METHODOLOGY

PhD, student Kouahla Ilyas

University 8 Mai 1945, P.O. Box 401, 24000 Guelma, Algeria

ORCID NO: https://orcid.org/0000-0003-2031-2661

Prof. Yallese Mohamed Athmane

University 8 Mai 1945, P.O. Box 401, 24000 Guelma, Algeria

ORCID NO: http://orcid.org/0000-0003-1686-7269

Dr. Belhadi Salim

University 8 Mai 1945, P.O. Box 401, 24000 Guelma, Algeria

ORCID NO: http://orcid.org/0000-0002-7277-1600

PhD, Student Boumaza Hanane

University 8 Mai 1945, P.O. Box 401, 24000 Guelma, Algeria

ORCID NO: 0000-0002-7277-1600

PhD, Student. Safi Khaoula

University 8 Mai 1945, P.O. Box 401, 24000 Guelma, Algeria

ORCID NO: 0000-0001-9195-1052

ABSTRACT

Nickel-based refractory alloys are a group of approximately twenty-five alloys. among them Inconel 718, a superalloy with exceptional characteristics, has excellent corrosion resistance, are widely used in space technology fields, in the marine and nuclear industries. Its mechanical characteristics under ambient and hot conditions are very good compared to the mechanical characteristics of other alloys. However, this material is difficult to machine due to its physio mechanical characteristics. In this work, we present an experimental investigation on the correlation model between the effects of the cutting parameters such as tool nose radius (r), cutting speed (Vc), feed rate (f) and depth of cut (ap), and between the tangential force (Ftng) during turning the refractor alloy (Inconel 718). The machining tests were carried out with a coated carbide tool (GC1105), according to the Taguchi L_{27} experimental design. Response surface methodology and analysis of variance (ANOVA) were used to quantify the effect of input factors on output parameters and to propose a mathematical model for prediction. The results obtained showed that the tangential force determination coefficient R^2 is 98%, Which means that the model found in this study are reliable and accurate. Where it is clear from the results that the depth of cut (ap) greatly influences the (Ftng) with a contribution of 64.11%, followed by the feed per revolution (f) with a contribution of 21.18%, followed by the cutting speed (Vc) and the nose radius of the tool with respective contributions of (3.86% and 3.46%).

Keywords: machining, refractor alloy, coated carbide tool, ANOVA, modelling.

MATEMATİK BÖLÜMÜNDE OKUYAN ÖĞRENCİLERİN TÜREV KONUSU HAKKINDAKİ TUTUMLARI

THE ATTITUDES OF STUDENTS IN THE DEPARTMENT OF MATHEMATICS ON THE SUBJECT OF DERIVATIVES

Öğr. Gör. Dinçer ATASOY

(Sorumlu Yazar) ORCID ID: 0000-0003-0389-1059

Iğdır Üniversitesi, Iğdır/Türkiye

Dr. Öğr. Üyesi Hasan KARA

ORCID ID: 0000-0001-9828-9006

Iğdır Üniversitesi, Iğdır/Türkiye

ÖZET

Bu çalışmanın amacı matematik bölümünde okuyan öğrencilerin türev konusu hakkındaki tutumlarını ölçmektir. Öğrencilerin türev konusuna bakış açıları çeşitli boyutlarda araştırılmıştır. Çalışmada 2020-2021 akademik yılında öğrenim gören 82'si erkek 112'si kadın olmak üzere 194 matematik bölümü öğrencisine üç boyut ve 5'li likert ölçeğine sahip 40 maddeden oluşan soru sorulmuştur. Lise öğrenimi boyunca takviye kursu alan öğrenciler ile takviye kursu almayan öğrencilerin, türev konusuna bakışlarında farklılık olup olmadığı araştırılmıştır. Öğrencilerin ÖSYM matematik testinde doğru çözdükleri soru sayısına göre, üniversitedeki analiz dersinde gördükleri türev konusuna olumlu bakış sağladığı görülmüştür. Çalışmada (Kara, 2014) tarafından geliştirilen İlköğretim Matematik Öğretmen Adaylarının Türev Konusuna Yönelik Tutumları adlı ölçek kullanılmıştır. Çalışmada bilişsel boyut, davranışsal boyut ve problem çözme boyutu olmak üzere üç boyutta oluşan maddelere göre SPSS paket programı kullanılarak faktör analizi yapılmış ve KMO değerlerine göre bazı maddeler uçlarda yer aldığı için ölçekten çıkarılmıştır.

Anahtar Kelimeler: Türev Tutumu, Matematik Öğrencileri, Türev Değerlendirmesi

ABSTRACT

The aim of this study is to measure the attitudes of students studying in the mathematics department about the derivative subject. Students' perspectives on derivative issue have been investigated in various dimensions. In the study, 194 mathematics students, 82 male and 112 female, studying in the 2020-2021 academic year, were asked a question consisting of 40 items with three dimensions and a 5-point Likert scale. It was investigated whether the students who took the reinforcement course and the students who did not take the reinforcement course during their high school education differ in their views on derivatives. According to the number of questions that students solved correctly in the ÖSYM mathematics test, it was observed that they had a positive view on the derivative issue they saw in the analysis course at the university. In the study, a scale named Primary Mathematics Teacher Candidates' Attitudes Towards the Subject of Derivatives developed by (Kara, 2014) was used. In the study, factor analysis was performed using the SPSS package program according to the items in three dimensions, namely cognitive dimension, behavioral dimension and problem solving dimension, and some items were removed from the scale due to KMO values.

Keywords: Derivative Attitude, Mathematics Students, Derivative Evaluation

APPLICATIONS OF HOHLOV OPERATOR ON UNIVALENT FUNCTIONS WITH NEGATIVE COEFFICIENTS

Shahram Najafzadeh

Department of Mathematics, Payame Noor University, P. O. Box 19395-3697, Tehran, Iran

ABSTRACT

A subfamily of univalent functions with negative coefficients is successfully defined in this article through utilization of Hohlov operator. Some results including coefficient estimates, extreme points, convolution preserving conditions, radii of starlikeness, convexity and close-to-convexity and geometric property are obtained for the above mentioned univalent functions.

HARMONICITY OF DEFORMED GRADIENT METRIC

N.E.H Djaa[1] and A. Zagane[2]

[1,2]Relizane University, Bormadia Relizanne

ABSTRACT

Let (M,g) be an m-dimensional Riemannian manifold. In this paper, we introduce a new class of metric on M called the deformed gradient metric. First we investigate the Levi-Civita connection of this metric. Secondly we study some properties of harmonicity with respect to the deformed gradient metric. We also construct some examples of harmonic maps.

Keywords: Gradient metric, Harmonic maps.

TEKİL OLARAK PERTÜRBE EDİLMİŞ DİFERANSİYEL DENKLEMLERİN NÜMERİK ÇÖZÜMLERİ İÇİN OPERASYONEL BİR MATRİS YÖNTEMİ

AN OPERATIONAL MATRIX METHOD FOR NUMERICAL SOLUTIONS OF SINGULARLY PERTURBATED DIFFERENTIAL EQUATIONS

Şuayip YÜZBAŞI

Doç. Dr., Akdeniz Üniversitesi Fen Fakültesi Matematik Bölümü, (Sorumlu Yazar)

ORCID NO: 0000-0002-5838-7063

Gamze YILDIRIM

Doktora Öğrencisi, Akdeniz Üniversitesi Fen Bilimleri Enstitüsü Matematik Anabilim Dalı

ORCID NO: 0000-0002-6020-8618

ÖZET

Bu çalışmada, tekil olarak pertürbe edilmiş iki noktalı sınır değer problemlerinin nümerik çözümleri için operasyonel bir matris yöntemi sunulur. Küçük bir parametresi içeren tekil olarak pertürbe edilmiş diferansiyel denklemler günümüze kadar birçok matematiksel modelde kullanılmıştır ve önem taşımıştır. Bu modellere örnek olarak oşinografi, plazma dinamikleri, elastikiyet, seyreltilmiş gaz dinamikleri, akışkanlar dinamiği, manyeto-hidrodinamik, akışkanlar mekaniği ve aerodinamik verilebilir. Yöntem için, ilk olarak yaklaşık çözüm 1. tip shifted Chebyshev polinomlarına bağlı olarak ifade edilir. Daha sonra, hem 1. tip shifted Chebyshev polinomları hem de yaklaşık çözüm matris formda yazılır. Ardından, 1. tip shifted Chebyshev polinomları ve yaklaşık çözümün matris formları yardımıyla, yaklaşık çözüm formunun türevleri de matris formda ifade edilir. Buradan, Tau metodu kullanılarak problem 1. tip shifted Chebyshev katsayılarını içeren cebirsel bir sisteme indirgenir. Benzer şekilde, yaklaşık çözümün matris formu yardımıyla, koşullar da matris formda yazılır. Problem ve koşullar için oluşturulan cebirsel sistem çözülerek, bilinmeyen 1. tip shifted Chebyshev katsayıları elde edilir. Böylece, aradığımız yaklaşık çözüm 1. tip shifted Chebyshev polinomlarına bağlı olarak bulunur. Yöntem, nümerik örnek için uygulanır. Not edilmelidir ki, cebirsel sistem, Matlab'da oluşturulan kodlar yardımıyla çözülür. Yöntemden elde edilen sonuçlar tablo ve grafiklerde gösterilir. Bu grafikler de Matlab yardımıyla çizilir. Ayrıca, mevcut yöntemden elde edilen sonuçlar ile literatürdeki diğer yöntemlerin sonuçları kıyaslanır. Yapılan kıyaslamalar neticesinde sonuçlar yorumlanır. Böylece, yöntemin etkililiği açıkça görülmüş olur.

Anahtar Kelimeler: 1. Tip Shifted Chebyshev Polinomları, Tekil Olarak Pertürbe Edilmiş Diferansiyel Denklemler, Sınır Değer Problemleri, Yaklaşım Yöntemleri

ABSTRACT

In this study, an operational matrix method is presented for numerical solutions of singularly perturbated two-point boundary value problem. Singularly perturbated differential equations containing a small parameter have been used in many mathematical models and have been important. Examples of these models are oceanography, plasma dynamics, elasticity, diluted gas dynamics, fluid dynamics, magneto-hydrodynamics, fluid mechanics and aerodynamics. For the method, first the approximate solution is expressed depending on the first type shifted Chebyshev polynomials. Then, both the first type of shifted Chebyshev polynomials and the approximate solution are written in matrix form. Then, with the help of the matrix forms of the first type shifted Chebyshev polynomials and the approximate solution, the derivatives of form of the approximate solution are also expressed in matrix form. From there, using the Tau

method, the problem is reduced to an algebraic system containing first type shifted Chebyshev coefficients. Similarly, with the help of the matrix form of the approximate solution, the conditions are also written in matrix form. By solving the algebraic system for problems and conditions, unknown first type shifted Chebyshev coefficients are obtained. Thus, the approximate solution we are looking for is found based on the first type shifted Chebyshev polynomials. The method is applied for the numerical example. It should be noted that the algebraic system is solved with the help of codes generated in Matlab. The results obtained from the method are shown in tables and graphs. These graphs are also plotted with the help of Matlab. In addition, the results obtained from the present method are compared with the results of other methods in the literature. The results are interpreted as a result of the made comparisons. Thus, the effectiveness of the method is clearly seen.

Keywords: First Type Shifted Chebyshev Polynomials, Singularly Perturbated Differential Equations, Boundary Value Problems, Approximation Methods

DEĞİŞKEN KATSAYILI LİNEER NÖTR GECİKMELİ DİFERANSİYEL DENKLEMLERİN YAKLAŞIK ÇÖZÜMLERİ İÇİN BİR KOLLOKASYON YÖNTEMİ

A COLLOCATION METHOD FOR THE APPROXIMATE SOLUTIONS OF LINEAR NEUTRAL DELAYED DIFFERENTIAL EQUATIONS WITH VARIABLE COEFFICIENT

Gamze YILDIRIM

Doktora Öğrencisi, Akdeniz Üniversitesi Fen Bilimleri Enstitüsü Matematik Anabilim Dalı

ORCID NO: 0000-0002-6020-8618

Şuayip YÜZBAŞI

Doç. Dr., Akdeniz Üniversitesi Fen Fakültesi Matematik Bölümü (Sorumlu Yazar)

ORCID NO: 0000-0002-5838-7063

ÖZET

Bu çalışmada, değişken katsayılı lineer nötr gecikmeli diferansiyel denklemlerin yaklaşık çözümlerini bulmak için Pell-Lucas polinomlarına dayalı bir kollokasyon yöntemi çalışılır. Pell-Lucas polinomlarının kesilmiş bir serisi formunda değişken katsayılı lineer nötr gecikmeli diferansiyel denklemlerin yaklaşık çözümleri aranır. Yöntemin ilk adımında, Pell-Lucas polinomları matris formuna getirilerek çözüm formu matris formunda ifade edilir. Daha sonra, problemde bulunan her bir türev için çözüm formunun temsilleri matris formunda ifade edilir. Çözüm formu ve gerekli türevlerin matris formları problemde yerine konulur ve elde edilen denklemde kollokasyon noktaları kullanılarak problem cebirsel bir denklem sistemine indirgenir. Elde edilen bu cebirsel sistem kapalı formda ifade edilir. Problemde var olan koşullar çözüm formu türünden matris formunda ifade edilir. Elde edilen cebirsel sistem ve koşulların matris formları birlikte ele alınarak yeni bir lineer cebirsel sistem elde edilir. Son elde edilen bu lineer cebirsel sistem çözülerek aranılan yaklaşık çözüm olan Pell-Lucas serisindeki katsayılar belirlenir. Belirlenen katsayılar çözüm formu olan seride yerine yazılarak Pell-Lucas polinomlarına dayalı yaklaşık çözüm bulunmuş olur. Ek olarak, rezidüel hata fonksiyonu yardımıyla bir hata problemi oluşturulur. Bu hata problemi önerilen Pell-Lucas kollokasyon yöntemi ile çözülerek hata fonksiyonu tahmin edilir. Problemin tam çözümü bilinmediğinde elde edilen bu tahmini hata fonksiyon sayesinde çözümlerin doğruluğunun ne derecede doğru olduğu hakkında ölçüm yapılması sağlanır. Öte yandan, elde edilen sonuçlar literatürdeki mevcut diğer yöntemlerin sonuçları ile kıyaslanır. Bu çalışmadaki nümerik hesaplamalar ve grafikler Matlab'da hazırlanan kodlar yardımıyla hesaplanır.

Anahtar Kelimeler: Pell-Lucas Polinomları, Kollokasyon Yöntemi, Nötr Gecikmeli Diferansiyel Denklemler, Yaklaşım Yöntemleri

ABSTRACT

In this study, a collocation method based on the Pell-Lucas polynomials is studied to find the approximate solutions of the linear neutral delay differential equations with variable coefficients. Approximate solutions of the linear neutral delay differential equations with variable coefficients in the form of a truncated series of the Pell-Lucas polynomials are sought. Firstly for the method, by bringing the Pell-Lucas polynomials into matrix form, the solution form is expressed in matrix form. Then, the representations of the solution form for each derivative in the problem are expressed in matrix form. The solution form and the matrix forms of the required derivatives are put in place in the problem and the problem is reduced to an algebraic equation system by using the collocation points in the obtained equation. This algebraic system is expressed in closed form. The conditions in the problem are expressed in

matrix form of the solution form. A new linear algebraic system is obtained by considering the matrix forms of the obtained algebraic system and conditions together. The coefficients in the Pell-Lucas series, which is the approximate solution sought, are determined by solving this last linear algebraic system. By writing the determined coefficients instead of the series, the solution form, an approximate solution based on the Pell-Lucas polynomials is found. In addition, an error problem is generated with the help of the residual error function. The error function is estimated by solving this error problem with the proposed Pell-Lucas collocation method. Thanks to this estimated error function, which is obtained when the exact solution of the problem is not known, the measurement is made about the accuracy of the solutions. On the other hand, the obtained results are compared with the results of other methods available in the literature. Numerical calculations and graphics in this study are calculated with the help of codes prepared in Matlab.

Keywords: Pell-Lucas Polynomials, Collocation Method, Neutral Delay Differential Equations, Approximation Methods

BERNSTEIN KOLLOKASYON YÖNTEMİ YARDIMIYLA SİNGÜLER PERTÜRBE OLMUŞ GECİKMELİ DİFERANSİYEL DENKLEMLERİN YAKLAŞIK ÇÖZÜMLERİ

APPROXIMATE SOLUTIONS OF SINGULAR PERTURBATED DELAY DIFFERENTIAL EQUATIONS WITH THE HELP OF THE BERNSTEIN COLLOCATION METHOD

Şuayip YÜZBAŞI

Doç. Dr., Akdeniz Üniversitesi Fen Fakültesi Matematik Bölümü (Sorumlu Yazar)

ORCID NO: 0000-0002-5838-7063

Gamze YILDIRIM

Doktora Öğrencisi, Akdeniz Üniversitesi Fen Bilimleri Enstitüsü Matematik Anabilim Dalı,

ORCID NO: 0000-0002-6020-8618

ÖZET

Bu çalışmada, singüler pertürbe olmuş gecikmeli diferansiyel denklemlerin nümerik çözümlerini elde etmek için, Bernstein polinomları yardımıyla bir kollokasyon yöntemi çalışılır. Bu amaçla, singüler pertürbe olmuş gecikmeli diferansiyel denklemin yaklaşık çözümü Bernstein polinomlarının N. mertebeden kesilmiş bir seri formunda aranır. Yöntem için ilk olarak, Bernstein polinomlarının ve yaklaşık çözümün matris formları oluşturulur. Bu matris formları yardımıyla, denklemde gerekli olan türev bağıntılarının ve gecikmeli terimin matris formları da oluşturulur. Ardından, çözüm formu, çözüm formunun türevlerinin matris formları ve gecikmeli terimin matris formu orijinal denklemde yerine yazılır. Elde edilen bu denklemde eşit aralıklı kollokasyon noktaları kullanılarak, denklem cebirsel bir denklem sistemine indirgenir. Çözüm formunun matris formu yardımıyla, koşulların matris formu da oluşturulur. Yöntem için, oluşturulan cebirsel sistem ve koşulların matris formu kullanılarak, yeni bir cebirsel sistem oluşturulur. Bu sistemin çözümü bize çözüm formundaki bilinmeyen katsayı matrisini verir. Elde edilen katsayı matrisi çözüm formunda yerine yazılarak Bernstein polinomlarına bağlı olan yaklaşık çözüme ulaşılır. Yönteme ek olarak, hata problemi oluşturulur ve bu hata problemi mevcut yönteme göre çözülür. Bu hata problemi için rezidüel hata fonksiyonu kullanılır. Tahmin edilen hata fonksiyonunun avantajı, denklemin tam çözümü bilinmediği durumlarda çözümlerin doğruluğu ile ilgili bilgi vermesidir. Ayrıca, Matlab'da oluşturulacak kodlar yardımıyla yöntem nümerik örnek için uygulanır. Elde edilen sonuçlar tablo ve grafikler yardımıyla ortaya koyulur ve literatürdeki mevcut yöntemlerle kıyaslamalar yapılır.

Anahtar Kelimeler: Bernstein Polinomları, Kollokasyon Yöntemi, Singüler Pertürbe Olmuş Gecikmeli Diferansiyel Denklemler, Yaklaşım Yöntemleri

ABSTRACT

In this study, a collocation method is studied with the help of the Bernstein polynomials to obtain numerical solutions of the singular perturbated delay differential equations. The approximate solution of the singular perturbated delay differential equation is sought in the form of a series of the truncated Bernstein polynomials with the N-order. For the method, firstly, the matrix forms of the Bernstein polynomials and the approximate solution are created. With the help of these matrix forms, the matrix forms of the derivative relations and the delay term required in the equation are also formed. Then, the solution form, the matrix forms of the derivatives of the solution form, and the matrix form of the delayed term are replaced in the original equation. By utilizing equally spaced collcoation points in the

obtained equation, the equation is reduced to an algebraic system of equations. With the help of the matrix form of the solution form, the matrix form of the conditions is also created. For the method, a new algebraic system is created by using the created algebraic system and the matrix form of conditions. The solution of this system gives us the matrix of unknown coefficients in the solution form. By writing the obtained coefficient matrix in the solution form, the approximate solution depending on the Bernstein polynomials is reached. In addition to the method, the error problem is created and this error problem is solved according to the current method. The residual error function is used to construct this error problem. The advantage of the estimated error function is that it provides information about the accuracy of solution when the exact solution of the equation is unknown. In addition, the method is applied for numerical example with the help of codes to be created in Matlab. The obtained results are presented with the help of tables and graphs and the comparisons are made with other methods in the literature.

Keywords: Bernstein Polynomials, Collocation Method, Singular Perturbated Delay Differential Equations, Approximation Methods

STATISTICAL CAPACITY BUILDING AMONG STUDENTS AND USERS OF STATISTICS THROUGH DATA ETHICS AND DATA SCIENCE TECHNIQUES IN NORTH CENTRAL NIGERIA

Monday Osagie Adenomon, PhD, CStat, FRSS, FASI

Department of Statistics, Nasarawa State University, Keffi, Nigeria & NSUK-LISA Stat Lab.

Chair, International Association of Statistical Computing (IASC) African Members Group

Foundation of Laboratory for Econometrics and Applied Statistics of Nigeria (FOUND-LEAS-IN-NIGERIA)

ABSTRACT

Data ethics can be defined as an aspect of ethics that studies and evaluates moral problems related to data generation, recording and sharing. But authenticity, reliability and genuineness of data collection in survey by some students and so called researchers are become questionable because malpractices in data collection (such as doctored data, cooked data etc). These practices are common with students (undergraduate, postgraduate and researchers) and as such, it can mislead government, other researchers, funders and users of statistical data in Nigeria. This paper proffers possible solutions to these problems using the North Central Nigeria as a case study. To curb these menace, data ethics can be taught through specialized lectures, subsidized conferences and workshop, campaign against unethical data collection practices by Foundation of Laboratory for Econometrics and Applied Statistics of Nigeria (aka FOUND-LEAS-IN-NIGERIA) and Laboratory for Interdisciplinary Statistical Analysis (LISA 2020 Network). With these possible solutions, credibility of data collection, curing, dissemination, analysis and sharing will regained its actual status in North Central Nigeria.

Keywords: Statistical Capacity, Data Ethics, Data Science.

THE LONG RUN EFFECTS OF SOME MACROECONOMIC VARIABLES ON GDP OF FINANCIAL INSTITUTIONS IN NIGERIA USING AUTOREGRESSIVE DISTRIBUTED LAG AND FULLY MODIFIED ORDINARY LEAST SQUARES

Monday Osagie Adenomon, PhD, CStat, FRSS, FASI

Department of Statistics, Nasarawa State University, Keffi, Nigeria & NSUK-LISA Stat Lab.

Chair, International Association of Statistical Computing (IASC) African Members Group

Foundation of Laboratory for Econometrics and Applied Statistics of Nigeria (FOUND-LEAS-IN-NIGERIA)

ABSTRACT

In econometrics literature, the Autoregressive Distributed Lag (ARDL) and Fully Modified Ordinary Least Squares (FMOLS) models are often applied in many economic analyses because of their rich methods and robustness when macroeconomic variables are cointegrated. This study applied the ARDL and FMOLS models to examine the long run effects of some macroeconomic variables on Gross Domestic Products (GDP) of financial institutions in Nigeria. To achieve this, annual data covering 1981 to 2015 for loans and advances, savings, lending rates and GDP of Financial Institutions were collected from CBN bulletin. The ADF test revealed that the variables are I(1) except for lending rate which was of I(0) order. The long run coefficients of ARDL(1,1,1,2) and FMOLS models revealed that loans and advances, and lending rates and savings were positively related to GDP in Nigeria but only savings was not significant in the model. FMOLS model possessed minimum standard errors; hence FMOLS model is more robust compared to ARDL model. The estimated models are free from serial correlation, multicollinearity, heteroscedasticity while the models are stable and the residuals of the models are normally distributed. The study recommends that savings and savings culture should be encouraged in Nigeria since economic theory states that savings and investment are related in any economic development.

Keywords: Gross Domestic Product (GDP), Lending Rates, Savings, Loans and Advances, ARDL, FMOLS, Cointegration

THE INTERNET EXCESSIVE USE EFFECT ON THE SOCIAL LIFE AND ACADEMIC PERFORMANCE OF THE MOSUL UNIVERSITY STUDENTS - IRAQ

Eman Salem Khaffaf [1*], Zeyad Tariq Madalah [2]

[1,2]MSc Mental Health Studies/ Lecturer/ College of Nursing/ University of Mosul/ Mosul / Iraq

ABSTRACT

The brought up of the modern technology, information and communication may open new horizons and new changes in various aspects of human life, cultural, intellectual and social, as it greatly affected all patterns the human life. The internet has become an important need in everyday life. Everyone who contemplates the developments that have affected the social life due to modern technology of communication must notice the significant changes in social relations in our societies, so there is no doubt that social relations have been affected by the using of the internet. On the other hand, the internet may affect the students if they are using it negatively. Therefore, the present study aims to assess the effect of the excessive use of the internet on the social life and academic performance of the students at Mosul University. A descriptive study is adopted in the present study by using a structured questionnaire from1st, February to 30th, June 2020. The sample consisted of (235) of undergraduate students where participated randomly from different scientific and humanitarian colleges of the University of Mosul. The study finds that there is a significant relationship between the use of the internet and the present study sample's gender and their residential area at sig = (0.006, 0.000) respectively . The study concludes that the respondents do not have the internet excessive use or addiction. The study also illustrated that the use of the internet does not affect the students' studying negatively but it has affected to some extent the social relationships of the participated students. Finally, It revealed that there is a significant relationship between the use of the internet and the respondents' gender and their residential area.

Keywords: effect, excessive use, addiction, students, social life, academic performance, internet.

REVİZYON İMAR PLANLARINA EN KÜÇÜK KARELER YÖNTEMİ İLE İLÇE DÜZEYİNDE BAKIŞ, SELİM İLÇESİ KARS ÖRNEĞİ

A DISTRICT LEVEL VIEW ON REVISION ZONING PLANS WITH THE SMALLEST SQUARES METHOD, SELİM DISTRICT KARS EXAMPLE

SELİM TAŞKAYA

Öğretim Görevlisi, Artvin Meslek Yüksekokulu, Mimarlık ve Şehir Planlama Bölümü

(sorumlu yazar)

ÖZET

İmar planları, hem mevcut mekansal sorunların tespit edilmesi hem de gelecekte ortaya çıkacak mekansal ihtiyaçların giderilmesi amacıyla yapılan araştırma ve planlama çalışması ile yerleşimin sosyo-ekonomik, demografik ve fiziksel yapısı göz önünde bulundurularak, bir kentsel kimlik oluşturulması, öngörülen ekonomik gelişme senaryosuna uygun olarak arazi kullanım kararlarının üretilmesi ve kentsel yaşam standartlarına uygun, yaşanabilir, sağlıklı bir kentin oluşturulmasını amaçlayan planlardır. Kendi içerisinde farklı çeşitleri olmakla birlikte uygulama imar planı olarak il, ilçe, belde gibi belediyeleri olan nüfusun fazla olduğu yerleşim yerlerinde ihtiyaca cevap verecek geniş çaplı plan revize imar planlarıdır. Çalışmamız Kars İli Selim ilçesinde en küçük kareler yöntemi kullanılarak regresyon analizi ile Selim yerleşmesinin kentsel alan ihtiyacı ve gelişme potansiyeli ortaya çıkarılmıştır. Öngörülen nüfus projeksiyonuna ve hedeflenen sektörel gelişmelere göre plan alternatifleri üretilip, alınan plan kararları doğrultusunda yürürlükteki mevcut 1/5000 Ölçekli Nazım İmar Planı ve 1/1000 Ölçekli Uygulama İmar Planı revize edilerek kentsel gelişim yönü doğrultusunda belirlenecek ilave alanlar için imar planı çalışması irdelenmiştir.

Revize imar planları, mevcut duruma ait imar planının ihtiyaca cevap verecek durumu kaybettiği hallerde imar planını iyileştirme çalışmalarıdır. Çalışmamızda. Basit şekilde nüfusu ortalama olan Selim ilçesi üzerinden nüfus projeksiyonu en küçük kareler yöntemi ile varsayımsal regrasyon olarak hesaplanıp ortalama olarak ortaya kondu. Bu nüfus olası durumunda 30-40 yıl boyunca ilçenin Kars İlinin hangi yönüne nasıl gelişmesine göre konut ticaret yeşil alan oranları belirlendi. Eski imar planında genellikle ayrık 2 ve 3 kat durumunda olana imar adalarının 4 kat çıkarılması, bitişik nizam yapılaşmanın ve ticari alanlarının yapı iznine geçilmesine karar verilmiştir. Tarım arazileri, akaryakıt alanları, vb. alanlarının oranları artırıldı. Bu tip revize planlarının nasıl hangi parametrelere dayanarak yapılması gerekliliği ortaya kondu.

Anahtar Kelimeler: Revize İmar Planı, En Küçük Kareler Yöntemi, Selim İlçesi

ABSTRACT

The zoning plans are designed to create an urban identity, taking into account the socio-economic, demographic and physical structure of the settlement, with the research and planning studies conducted in order to determine the existing spatial problems and to eliminate the spatial needs that will arise in the future, land use in accordance with the envisaged economic development scenario. These are the plans that aim to produce the decisions and create a livable and healthy city in accordance with urban life standards. Although there are different types within itself, the implementation development plan is the revised development plans that will meet the needs in the settlements with high population such as provinces, districts and towns. In our study, the urban area need and development potential of Selim settlement was revealed by regression analysis using the least squares method in Selim district of Kars province. Plan

alternatives were produced according to the projected population projection and targeted sectoral developments, and the current 1/5000 Scaled Master Zoning Plan and 1/1000 Scaled Implementation Zoning Plan were revised in line with the plan decisions, and zoning plan studies were carried out for additional areas to be determined in line with the urban development direction.

Revised development plans are efforts to improve the development plan in cases where the current development plan loses the status to meet the need. In our study. In simple terms, the population projection over Selim district, which has an average population, was calculated as hypothetical regression with the least squares method and presented as an average. In the possible case of this population, housing, trade and green area rates were determined according to which direction of Kars province and how it developed over 30-40 years. In the old development plan, it has been decided to increase the zoning islands to 4 floors, and to pass on the construction permit of the adjacent structuring and commercial areas. Agricultural lands, fuel fields, etc. The rates of the fields were increased. It was revealed how such revision plans should be made based on which parameters.

Keywords: Revised Zoning Plan, Least Squares Method, Selim District

YEŞİL BİNALAR

GREEN BUILDINGS

Cansu SARI TEKİN

Yüksek Mimar, Ankara, TÜRKİYE

ORCID ID: https://orcid.org/0000-0003-3210-9708

ÖZET

Kaynakların hızla tükenmeye başlaması, iklim koşullarının değişmesi ve yapıda kullanılan malzemelerin çevreye ve doğaya verdiği zararları minimum seviyeye indirmek amacıyla ortaya çıkmış olan yeşil binaların teknolojiyle beraber kullanıcıların isteklerine cevap verdiği görülmektedir. Ekolojik dengenin devam etmesine imkan sağlayan ve doğada bir bütün içinde yer alan canlıların bir arada yaşamasına olanak sağlayan bu yapılar, sürdürülebilir malzemeler kullanılarak uzun ömürlü, daha sağlam ve kaliteli yapıların ortaya çıkmasına sebep olmaktadır. Tasarım aşamasından itibaren multidisipliner bir anlayışla ortaya çıkan bu yapıların, belirli standartlar çerçevesinde yapıda uygulanan kriterler ile arazi kullanımı, su, enerji, ısıtma ve soğutma, havalandırma, aydınlatma, atık yönetimi ve geri dönüştürme gibi konuları yenilenebilir enerji kapsamında karşıladığı görülmektedir. Bu kapsamda yapılacak üretimin sağlanabilmesinde bazı sertifika sistemlerinin de ortaya çıktığı da görülmektedir. Çalışmada; "yeşil bina" sistemine katkı sağlayan doğal kaynakların korunması ve sürdürülebilmesi için yapıya etki eden kriterler bu multidisipliner yaklaşım çerçevesinde incelenmiştir.

Anahtar Kelimeler: Yeşil tasarım, sürdürülebilir binalar, yeşil bina sertifika sistemleri

ABSTRACT

It is seen that the green buildings, which have emerged in order to reduce the damage to the environment and nature, with the rapid depletion of resources, changing climatic conditions and the materials used in the building, respond to the demands of the users with technology. These structures, which allow the continuation of ecological balance and allow the living beings in nature to live together in a whole, cause the emergence of long-lasting, more robust and quality structures by using sustainable materials. It is seen that these structures, which emerged with a multidisciplinary approach from the design stage, meet the criteria applied in the building within the framework of certain standards and the subjects such as land use, water, energy, heating and cooling, ventilation, lighting, waste management and recycling within the scope of renewable energy. It is also seen that some certificate systems have emerged in ensuring the production to be made within this scope. In the study; In order to protect and sustain the natural resources that contribute to the "green building" system, the criteria that affect the building have been examined within the framework of this multidisciplinary approach.

Keywords: Green design, sustainable buildings, green building certification systems

MOTION PLANNING OF A CONTINUUM ROBOT IN MEDICAL SURGERIES

Mohammad Jabbari[1], Manizhe Zakeri[2]

[1,2]School of Engineering-Emerging Technologies, University of Tabriz, Tabriz, Iran

ABSTRACT

Continuum robots have become widespread all around the world. They are used for all applications that traditional rigid link robots pose certain limitations, including Medical procedure, Space exploration, and Machine tending. On the one hand, in order to enable the usage of continuum robots in safety-critical applications, such as surgery, it is essential that the continuum robot's tip is moved safely and accurately. On the other hand, due to the kinematics and actuation redundancy of continuum robots, its motion path planning is also a challenging task in medical procedures. In this paper, for safety and control stability of the continuum manipulators in complex constrained environments, a feedback controller is proposed on a one-segment continuum robot, and a suitable path was selected for it to evaluate that controller. Also, we use the constant curvature-bending property of continuum robots for the path planning process. This approach has a feature allowing surgeons to operate patients precisely without considering medical planning problems. This controller is implemented numerically and the accuracy and errors of the results are analyzed. Simulation and analysis results demonstrate the excellent performance of this method and the feasibility of path planning in medical procedures. This could encourage further investigation towards motion planning on multi-segment continuum robots in the future.

Keywords: Continuum Robot, Path planning, Constant Curvature, Robot kinematics

RISK FACTORS AND MOLECULAR ASPECTS IN BRAIN TUMORS PRODUCTION

Maxim Leconiuc

[1]State University of Medicine and Pharmacy "Nicolae Testemitanu"

ABSTRACT

The incidence of brain neoplasm has increased in recent years in industrialized countries. The average reported is 17 per 100 000 people (17.2 / 100 000 for men and 14.6 / 100 000 for women); about half of these tumors are malignant.

Study of risk factors and molecular-genetic aspects in the production of brain tumors.

A narrative synthesis study of the specialized literature, the research articles being selected according to the inclusion and exclusion criteria described in this review.

Relevant scientific literature was systematically reviewed from various publicly available databases. The search strategy was based on identifying previous observational epidemiological studies that examined the relationship between brain neoplasm and occupational and environmental exposure. It also analyzed the literature on the molecular genetic aspects of the development of brain tumors. Finally, the main risk factors were identified, as well as the main genes involved in the oncogenesis of the central nervous system.

Among the given substances, the basic role is played by ionizing radiation, pesticides, formaldehyde, plastic polymers and alkylurea compounds. Following the action of external factors, specific gene mutations occur that determine the phenotypic variability of brain neoplasms.

(1) Genetic, environmental and occupational factors are involved in the development of CNS tumors. (2) Occupational and environmental factors act on the human body through specific chemical and physical substances,which primarily affect the genome Knowledge about the molecular-genetic mechanisms through which the risk factors are determined will help to form a policy of prevention of neuronal cancer and improve the quality of diagnosis and therapy of brain tumors.

Keywords: Brain Neoplasm; occupational risk factors; environmental risk factors; glioma; meningioma; astrocytoma, gene, mutation, mechanism

ULTRA GENELLEŞTİRİLMİŞ EKSPONANSİYEL HİPERBOLİK POTANSİYEL MODELİNİN VARLIĞINDA SPİNİ OLMAYAN GÖRELİ PARÇACIKLARIN SAÇILMA VE BAĞLI DURUMLARININ İNCELENMESİ

THE INVESTIGATION OF BOUND AND SCATTERING STATE SOLUTIONS RELATIVISTIC SPINLESS PARTICLES IN VIEW OF ULTRA GENERALIZED EXPONENTIAL–HYPERBOLIC POTENTIAL MODEL

Ahmet TAŞ

Dr. Öğr. Üyesi, Harran Üniversitesi Sağlık Hizmetleri Meslek Yüksekokulu Optisyenlik Programı, (Sorumlu Yazar)

M. Murat YAŞAR

Öğr. Gör., Harran Üniversitesi Sağlık Hizmetleri Meslek Yüksekokulu Tıbbi Görüntüleme Teknikleri Programı

ÖZET

Göreli ve göreli olmayan Kuantum mekaniğinin temel problemlerinden biri, parçacık denklemlerinden değişik potansiyeller için çözümlerin elde edilmesi ve sistemin bağlı ve saçılma durumlarının belirlenmesidir. Değişik potansiyel modelleri iki ve daha fazla atomlu sistemleri anlamak için önerilmektedir. Bu tür problemlerin atom ve molekül fiziğinde ve fiziğin diğer alanlarının yanı sıra kimyada da uygulamaları vardır. İlk kez, Manning ve Rosen, fizikte ve kimyasal fizikte iki atomlu molekül modellerinde titreşimsel davranışları betimlemek için literatürde kendi adlarıyla anılan potansiyeli önermişlerdir. Bu çalışmada, daha önce ayrı ayrı çalışılan potansiyel modellerinin birkaçını kapsayan Ultra Genelleştirilmiş Eksponansiyel Hiperbolik Potansiyel (UGEHP) modeli ele alınmıştır. Bu model için V(r)=S(r) yaklaşımında Klein-Gordon denklemi standart yöntemle çözülmüş ve elde edilen çözümler hipergeometrik fonksiyonlar cinsinden ifade edilmiştir. Bu çözümler kullanılarak spini 0 olan atom altı parçacıkların bağlı ve saçılma durumları elde edilmiştir. Bilgisayar ortamında Mathematica yazılım programı kullanılarak bağlı ve saçılma durumu çözümlerinden elde edilen sırasıyla; enerji özdeğerleri bağıntısı, enerji özfonksiyonları bağıntısı ve faz kayması eşitliğinin potansiyelin parametrelerine bağlığını açıklayan çizimler yapılmıştır.

Anahtar Kelimeler: Potansiyel Modelleri, Bağlı Durum, Saçılma Durum, Enerji Özdeğerleri, Faz Kayması, Moleküler Dinamik

Teşekkür:

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ABSTRACT

One of the main problems of relativistic and non-relativistic quantum mechanics is to obtain solutions for potentials from the question of potentials and to determine the scattering states as desired. Different potential models are proposed to understand systems with two or more atoms. These types of problems have applications in atomic and molecular physics and in chemistry as well as in other areas of physics. For the first time, Manning and Rosen have proposed the potential, referred to by their name in the literature, to describe vibrational behavior in diatomic molecular models in physics and chemical physics. In addition, the Ultra Generalized Exponential Hyperbolic Potential (UGEHP) model is discussed to explore several of the other

studied potential models. For this model, in the V (r) = S (r) approach, Klein-Gordon equation is solved with the standard method and the solutions obtained are expressed with hypergeometric functions. Conductive and scattering states of subatomic solutions with spin 0 are obtained from these solutions. Mathematica software program was published in computer environment and the results obtained from scattering situation solutions; The drawings explaining the energy eigenvalue relation, the energy eigenfunctions relation and the phase shift dependence on the parameters of the potential have been made.

Keywords: Potential Models, Bound State, Scattering State, Energy Eigenvalues, Phase Shift, Molecular Dynamics

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COMBINED THERAPY OF MARSUPIALIZATION AND ENUCLEATION IN THE TREATMENT OF LARGE RADICULAR CYST

BÜYÜK RADİKÜLER KİSTİN TEDAVİSİNDE MARSUPYALİZASYON VE ENÜKLEASYONUN KOMBİNE TEDAVİSİ

Gökhan GÜRSES

Dr. Öğr. Üyesi, Selçuk Üniversitesi Diş Hekimliği Fakültesi

Ali AKÇAKAYA

Arş. Gör., Selçuk Üniversitesi Diş Hekimliği Fakültesi, (Sorumlu Yazar)

ABSTRACT

Radicular cysts are the most common inflammatory cystic lesions affecting the jaws. They usually progress without symptoms and tend the grow slowly, unless they get infected or expansile. Thus, these lesions are diagnosed during routine radiographic examinations. After the true cyst diagnosis is made histopathologically, clinically and radiographically, treatment planning should be done. Treatment of radicular cysts includes root canal treatment or surgical treatment including enucleation, marsupialization or decompression. There is no consensus among physicians in the surgical treatment of especially large radicular cysts. The aim of all treatments is to remove the cyst completely and without complications. Enucleation has some disadvantages such as the possibility of damaging important anatomical structures and postoperative complications. Marsupialization is a non-aggressive treatment and minimizes complications related to adjacency and size. This case report presents the surgical treatment of a large radicular cyst placed right posterior mandible with enücleation after marsupialization. The shrinkage of the cyst was followed by radiographs during the treatment and follow-up period. When the size of the cyst was reduced to a level where there was no risk of pathological mandible fracture or adjacent nerve injury, enucleation was performed.

In conclusion, the combined use of marsupialization and enucleation therapy is a successful option in the treatment of large radicular cysts.

Keywords: marsupialization, cyst, enucleation

ÖZET

Radiküler kistler çeneleri etkileyen en yaygın inflamatuar kistik lezyonlardır. Enfekte olmadıkça ve ya yayılmadıkça genellikle semptomsuz ilerlerler. Böylece bu lezyonlar rutin radyografik kontroller sırasında teşhis edilirler. Histopatolojik, klinik ve radyografik olarak gerçek kist tanısı konulduktan sonra tedavi planlaması yapılmalıdır. Radiküler kistlerin tedavisi, kanal tedavisi, enükleasyon, marsupyalizasyon, dekompresyon cerrahi operasyonu içerebilir. Özellikle büyük radiküler kistlerin cerrahi tedavisinde hekimler arasında tam bir görüş birliği yoktur. Bütün tedavilerde amaç kistin tamamen ve komplikasyonsuz olarak çıkarılmasıdır. Enükleasyonun önemli anatomik yapılara zarar verme olasılığı ve postoperatif komplikasyonlar gibi dezavantajları vardır. Marsupyalizasyon agresif olmayan bir tedavidir ve komşuluk ve boyutla ilgili komplikasyonları en aza indirir. Bu vaka raporu, sağ arka mandibula bölgesinde bulunan büyük bir radiküler kistin marsupyalizasyonun ardından enükleasyon ile cerrahi tedavisini sunmaktadır. Tedavi ve takip sürecinde radyografiler ile kistin küçülmesi takip edilmiştir. Kistin boyutu patolojik çene kırığı veya komşu sinir yaralanması riskinin olmadığı seviyeye kadar küçülünce enükleasyon yapılmıştır.

Sonuç olarak marsupyalizasyon ve enükleasyon tedavisinin kombine kullanılması büyük radiküler kistlerin tedavisinde başarılı bir seçenektir.

Anahtar Kelimeler: Marsupyalizasyon, enükleasyon, kist

ISOLATED ALVEOLAR FRACTURE: A RARE CASE REPORT

İZOLE ALVEOLAR KIRIK: NADİR VAKA RAPORU

Gökhan GÜRSES

Dr. Öğr. Üyesi, Selçuk Üniversitesi Diş Hekimliği Fakültesi

Ali AKÇAKAYA

Arş. Gör., Selçuk Üniversitesi Diş Hekimliği Fakültesi, (Sorumlu Yazar)

ABSTRACT

Alveolar process fractures are often presented as a complex injury that includes tooth, alveolar bone, periodontal ligament, and pulp. This type of fracture has only a 3% share among all maxillofacial traumas. Most affected teeth are the anterior ones due to their traumatic location and only have a lip to cushion. In this case report, we present an isolated mandibular alveolar fracture because of falling and rehabilitated with two implants.

A 53-year-old male applied to our clinic for the mobility of his mandibular anterior teeth. He stated that mobility started yesterday after his fall which was caused by the curb. According to the patient's report, when he fell, he hit his right cheek on the ground but his anterior teeth and alveolar process were fractured. Considering that two prostheses were in the patient's mouth during the accident, this can be explained by the fact that the impact force coming to the right cheek is transferred to the anterior region by the prosthesis and causes this injury. The affected dentoalveolar segment was removed due to its bad prognosis expectation. Two implants were placed for implant-supported overdenture. There was no complication during the healing period.

In injuries involving more than one tooth, it should be evaluated whether the capacity of the affected segment will be sufficient to function after the treatment.

Keywords: trauma, dentoalveolar fracture, implant

ÖZET

Alveoler kemik kırıkları genellikle diş, alveolar kret, periodontal ligament ve pulpayı içeren kompleks yaralanmalardır. Tüm maksillofasiyal kırıklar içerisinde %3'lük bir orana sahiptirler. Sadece dudakların tampon görevi yapabildiği anterior dişler en çok etkilenen dişlerdir. Bu vaka raporunda düşme sonucu oluşan ve iki implant ile rehabilite edilen bir izole alveol kırığını sunmaktayız.

53 yaşındaki erkek hasta, bir gün önce düşmesi sonrası oluşan mandibula anterior dişlerindeki mobilite nedeniyle kliniğimize başvurdu. Hastanın anlatımına göre, kaldırıma takılarak düşmüş ve sağ yanağını yere vurmuş olmasına rağmen mandibula anterior bölgedeki dişler ve alveolar kemik kırılmıştır. Hastanın hareketli protezlerinin ağzında olduğu göz önünde bulundurulduğunda, düşme kaynaklı oluşan kuvvet mandibular protez ile anterior bölgeye taşınmış ve bu bölgede bir yaralanma oluşturmuştur. Etkilenmiş dentoalveolar parça kalan dişlerle beraber iyi bir prognoz beklenmediği için cerrahi olarak çıkarılmıştır. İmplant destekli overdenture için anterior bölgeye iki adet implant yerleştirilmiştir. İyileşme sürecinde herhangi bir komplikasyon izlenmemiştir.

Birden fazla dişi içeren yaralanmalarda, tedavi sonrasında etkilenen segmentin kapasitesinin işlev görmeye yetip yetmeyeceği değerlendirilmelidir.

Anahtar kelimeler: travma, dentoalveoler kırık, implant

% 2 ÇİNKOKLORÜRLÜ NANOBALONCUKLU LİPOZOMLAR: BAKTERIYEL ENFEKSIYONLARLA MÜCADELEDE YENI BIR ÇIKIŞ YOLU MU?

2% ZINCCHLORIDE NANOBUBBLE LIPOSOMES: A NEW ROUTE TO FIGHT BACTERIAL INFECTIONS?

M.Ertan GÜNEŞ

Öğr. Gör. Dr. Bursa Uludağ Üniversitesi Teknik Bilimler MYO, (Sorumlu Yazar)

Perihan Erkan ALKAN

Öğr. Gör. Dr. Bursa Uludağ Üniversitesi Sağlık Hizmetleri MYO

A.Ümit SABANCI

Dr., T.C. Sağlık Bakanlığı Bursa İl Sağlık Müdürlüğü Çekirge Devlet Hastanesi

Cüneyt ÖZAKIN

Prof. Dr. Bursa Uludağ Üniversitesi Tıp Fakültesi Tıbbi Mikrobiyoloji Anabilim Dalı

ÖZET

Ozon oldukça etkili antivirütük ve antibakteriyel bir ajandır. Ancak gaz halinde stabil değildir. Çalışmanın hipotezi, ozonun doymamış yağ içeren taşıyıcılar içerisinde nanobaloncuklar halinde stabilitesini arttırmaktır. Yine antibakteriyel etkinliği nedeniyle bir çok kozmetik üründe de kullanılan çinko ile nano baloncuklu ozon solüsyonu kombine edilerek antibakteriyel etkinliği yüksek bir ürün elde edilmesi amaçlanmıştır. % 2 çinkoklorürlü nanobaloncuklu lipozom solüsyonunun, CLSI M07 A9 standart test yöntemi ile antibakteriyel testleri yapılmış ve solüsyonun Minimal İnhibisyon Konsantrasyon (MİK) değeri ve zamana bağlı etkisi belirlenmiştir. Nanopartikül lipozom solüsyonunun kararlılık testi için ise ASTM F 1980 standardına göre, bir yıllık stabilite karşılığı olarak 37 gün ve 55 ºC' de test edilmiştir. %2 çinkoklorürlü nano baloncuklu lipozom solüsyonunun minimal inhibisyon konsantrasyonu (MİK) Escherichia coli (ATCC 25922) ve Metisiline dirençli Staphylococcus aureus (MRSA) (ATCC 12493) suşları için 1.562 ppm olarak saptanmıştır. % 2 çinkoklorürlü nanobaloncuklu lipozom solüsyonunun 2000 ve 1750 ppm konsantrasyonlarının Staphylococcus aureus (ATCC 12493) üzerindeki antibakteriyel etkinliği 1. saat itibari ile başladığı tespit edilmiştir. Solüsyonun 2000 ppm'lik konsantrasyonu, Escherichia coli (ATCC 25922) suşu üzerinde 2. dakikadan itibaren inhibisyon etkisini göstermiştir. ASTM F 1980 standardına göre, bir yıllık stabilite testlerinde nanopartikül lipozom solüsyonunun etkinliğini koruduğu tespit edilmiştir. Çalışmamız yeni geliştirilen solüsyonun uzun süre etkinliğini koruduğunu ve antibakteriyel bir ajan olarak farklı alanlarda kullanılabileceğini göstermiştir. Üretilen nano baloncuklu ozon solüsyonu için TR201804452A2 numarası ile patent başvurusu yapılmıştır.

Anahtar Sözcükler: Lipozom Ozon, Çinkoklorür, Antibakteriyel Etki, Stabilite

ABSTRACT

Ozone is a highly effective antiviral and antibacterial agent. However, it is not stable in its gaseous state. The hypothesis of the study focuses on the possibility of increasing the stability of ozone by the use of nanobubble carriers containing unsaturated oils. The aim of the study is to obtain a product with high antibacterial activity by combining the nanobubble ozone solution with zinc, a compound widely used by the cosmetics industry due to its inherently high antibacterial effects. 2% zincchloride nanobubble solutions are tested for their antibacterial activity by using CLSI M07 A9 standard testing methodology. The solutions' Minimum Inhibitory Concentration (MIC) value and time-dependent antibacterial activity are determined.

Nanobubble liposome solutions stability tests are carried out according to ASTM F 1980 standards, at 55 ºC for 37 days as a one-year stability equivalent. The MIC value of the 2% zincchloride nanobubble solution is estimated to be 1.562 ppm on for Escherichia coli (ATCC 25922) and Methicillin-resistant Staphylococcus aureus (MRSA) (ATCC 12493) strains. It is recorded that 2000 and 1750 ppm concentrations of 2% zincchloride nanobubble solution on Staphylococcus aureus (ATCC 12493) strains initiated antibacterial activity as of the first hour. 2000 ppm concentrations of the solution exhibited inhibitory effects on the Escherichia coli (ATCC 25922) strains starting from the 2nd min. It is observed that the nanobubble liposome solution retained its antibacterial effectiveness in one-year stability tests, according to the ASTM F 1980 standards. The study shows that the newly developed nanobubble solution sustains its antibacterial effectiveness for a long period and may be used in multiple areas as an antibacterial agent. A patent application for the nanobubble liposome solution is filed under the number TR201804452A2.

Keywords: Liposome Ozone, Zincchloride, Antibacterial Effect, Stability

CLINICAL COURSE OF INFECTIOUS MONONUCLEOSIS IN CHILDREN

S.Nykytyuk

Ternopil National Medical University by I.Ya. Horbachevsky

ABSTRACT

Infectious mononucleosis (IM) is a clinical syndrome that is most commonly associated with primary Epstein–Barr virus (EBV) infection. IM may present as a mild infectious illness of young children, but in young adults primary EBV infection can cause a type of IM known as the Pfeiffer's Drusenfieber (glandular fever) or "kissing disease". A variety of symptoms, such as upper respiratory tract infection, otitis media, abdominal complaints, hepatitis, and enlargement of the cervical lymph nodes, tonsillitis and/or pharyngitis, and moderate to high fever may be observed. According to WHO, every year the virus contaminates 16 to 800 people at 100 thousand populations, in more than 50 % of children during the first 10 years of life and in 80-90 % of adults the specific antibodies to the virus are revealed as a marker of infection.

The aim of our study is to present a case of IM in a 2 years old child hospitalized in Ternopil regional hospital.

The child gets sick acutely with enlargement of left cervical lymph nodes, low-grade fever, catarrhal signs and pain and swallowing of the left parotic gland. From past history: the child experienced left-sided sialadenitis 3 month ago. In the hospital on the objective examination the left-sided sialadenitis, intoxication syndrome, and lymphadenopathy were diagnosed, and immunological methods had revealed EBV capsid antigens in his blood, Ig M at 0,3 (0.8 negative, more than 1.1 – positive), Ig G > 8.0 (0.8 negative, more than 1.1 - positive). That is the sign of chronicity of infection.

Knowledge of the EBV life cycle is important to better understand clinical symptoms and EBV diagnostics. Patients with EBV infection who present clinically with infectious mononucleosis invariably experience accompanying fatigue. Fatigue may be profound initially but usually resolves within 3 months. Some patients experience prolonged fatigue and, after initial recovery, enter a state of prolonged fatigue without the features of infectious mononucleosis.

A CASE OF PANUVEITIS IN A CHIL WITH LYME BORRELIOSIS

Nykytyuk S.[1], Stoyan A.[2]

Ternopil National Medical University by I. Horbachevsky[1]

Ternopil Regional Children Hospital[2]

ABSTRACT

Lyme borreliosis (LB) is a multisystem infectious disease caused by Borrelia burgdorferi sensu lato and transmitted to humans by tick bite.

The aim of this study was to estimate panuveitis caused by Borrelia burgdorferi sensu lato infection.

We performed a case-control study. Diagnostic workup revealed borrelial antibodies in serum: Elisa and immunoblot.The level of cytokines (IL-1β) in the serum of patients was determined by ELISA with using test systems produced by CJSC Vector-Best.

On June 13, 2017, a 15-year- girl was referred to the Ternopil Region hospital, Ukraine, with arthralgy, a 5-day history of a red eye with pain provoked by eye movement, photophobia; blurring; light sensitivity; decreased vision; and seeing floaters. From the history it is known: tick bite on the back of the body month ago, Antibiotic treatment was not prescribed. Erythema migrans more than 10sm , headacke near 1 month. MRT was perfomed: two-side sinusitis. Status localis: The only abnormal finding on physical examination was a red and painful left eye. No skin lesions were uncovered, and neurologic examination disclosed no abnormalities. Ophthalmologic examination revealed impaired vision in the left eye (0.5 Snellen equivalent) while visual acuity in the right eye was normal (1.0 Snellen equivalent). The pupil was normal, and the lens was clear. The left optic disk was swollen (also seen on optic coherence tomography and ultrasound), pink, without evident hemorrhages, the vessels were slightly congested, the posterior pole, fovea and peripheral chorioretina appeared normal. Diagnosis of Lyme borreliosis was substantiated by demonstration of Ig M-187U/ml to Borrelia burgdorferi sensu lato,immunoblot-Ospc borrelia afzelia,garinii IgM-positive,Toxopasma gondii Antibody Ig-239,4.MO/Ml.At the acute course of Lyme-borreliosis in the serum of patients increases the level of pro-inflammatory IL-1β. Initial laboratory findings revealed a normal C-reactive protein value (2,5 mg/L) and a slightly elevated leukocyte count (11×10^9/L) with normal differential white cell counts. Basic biochemical blood tests as well as concentration of serum protein, fibrinogen, antinuclear antibodies and C3 were normal or negative. Dianosis of acute, 1-sided panuveitis with optic disc edema in a child in whom diagnostic work-up revealed LNB. Doxacyclini 4mg/kg was prescribed for 21 day.

Panuveitis is a rare sign of Lyme disease.The necessity of appointing preventive treatment of Lyme borreliosis in children who have been exposed to ticks has been proved

APPLICATION OF THE GLC METHOD ACCORDING TO THE PHARMACOPOEIAL REQUIREMENTS OF KAZAKHSTANI MEDICINAL PLANT MATERIALS - SIBERIAN FIR (ABIES SIBIRICA), PINE FAMILY

G.M. Sayakova, J.E. Beksultanov

S.D. Asfendiyarov Kazakh National Medical University, Tole bi av. 94, Almaty, Kazakhstan

ABSTRACT

The state program of the Republic of Kazakhstan for the development of import substitution of medicines is aimed at maximizing the provision of the pharmaceutical market with domestic products. Currently, special attention is paid to filling the market with domestic medicinal products. This is due to the peculiarities of their pharmacological action (therapeutic action, efficacy, safety) and important advantages over synthetic drugs (polyvalence of action, ideal combination of various active substances, low side effects, etc.).

One of the promising objects of research is the domestic Siberian fir (Abies sibirica), which has valuable therapeutic effects: bactericidal, antiviral, antifungal, regenerating, anti-inflammatory and immunomodulatory. In our scientific work, using the example of the Siberian fir essential oil, the features of identification and determination of the quantitative content of compounds in a complex mixture of organic substances of natural origin by the method of gas-liquid chromatography are discussed. The conditions for obtaining the chromatographic profile of representative and characteristic components of essential oil according to the State Pharmacopoeia of the Republic of Kazakhstan have been determined.

Keywords: Siberian fir, needles, chemical composition, GLC method, essential oils.

ПРИМЕНЕНИЕ ЛЕКАРСТВЕННОГО РАСТЕНИЯ «РОМАШКА (CHAMOMILLA RECUTITA (L.) RAUSCHERT» В НАРОДНОЙ МЕДИЦИНЕ

Студент 4 курса Алихан Акжайна

Научный руководитель: Момбеков С.Е.

Ромашка лекарственная – травянистое однолетнее растение относящееся к семейству сложноцветные, высотой 10-60 см. Стебли бороздчатые, ветвистые, внутри полые. Листья рассеченные, сидячие, расположены очередно. Язычковые цветки – белого цвета, пестичные – желтого цвета, образуют корзиночные соцветия. Плод представляет собой семянку. Период цветения – май – сентябрь. Период созревания плодов начинается в июле.

Ромашка лекарственная произрастает в Западной Сибири, на территории средней полосы европейской части России. Встретить растение можно в посевах, на пустырях, обочинах дорог.

Растение известно также под названиями Ромашка ободранная, Ромашка аптечная.

Химический состав растения

В соцветиях ромашки содержится около 0,3% эфирного масла, флаваноиды, азулен, ситостерин, каротин, холин, кумарины, полисахариды, органические кислоты, горечи, камеди, витамины.

Фармакологические свойства ромашки

Цветки ромашки обладают спазмолитическим, дезинфицирующим, антиаллергическим, противовоспалительным, жаропонижающим, антисептическим, ветрогонным, желчегонным, седативным, противосудорожным и легким обезболивающим действием.

Растение относится к средствам растительного происхождения. В составе эфирных масел содержатся: левоменол, бисаболол оксид А, бисаболол оксид В, бисаболон оксид А, камазулен, спатуленол; в группе флавоноидов встречаются флавоновые гликозиды, флавоноловые гликозиды, агликоны, включая кверцетин, изорамнетин, патулетин, а также иацединем, кризоспенол, кризоспленетин; в группе гидроксикумаринов, включая умбеллиферон, встречается герниарин; раманогалактуронан.

ЛРС Ромашки уменьшает протеолитическую активность пепсина, оказывает противовоспалительное действие. Благодаря наличию камазулена и эфирных масел, ингибирует перекисное окисление липидов, чем обусловлено антиоксидантное действие. Оказывает спазмолитическое, противовоспалительное, противомикробное действие (в отношении Staphylococcus spp. и Candida spp.), улучшает процессы регенерации тканей. Обладает также дезодорирующим и противозудным действием.

В данном время Ромашка, как лекарственное растительное сырье широко используется в народной медицине.

COVID-19 PANDEMİSİ EVDE SAĞLIK HİZMETLERİNİ NASIL ETKİLEDİ?

HOW DID THE COVID-19 PANDEMIA AFFECT HOME HEALTH SERVICES?

Esra KURT CANPOLAT

Uzman Doktor, Adıyaman Eğitim ve Araştırma Hastanesi Başhekim Yardımcısı

ÖZET

Evde sağlık hizmetleri; bireyin sağlığını korumak, yükseltmek, yeniden sağlığına kavuşturmak amacıyla gerekli sağlık ve sosyal hizmet desteğinin profesyonel düzeyde ve aile bireyleri tarafından bireyin yaşadığı ortamda sunulması şeklinde tanımlanabilir. Aralık 2019'da (COVID-19) salgını ilk olarak Çin'in Wuhan kentinde tespit edildi, hızla yayılarak 7 Nisan 2021 tarihi itibariyle dünyada 133.050.027 onaylanmış vaka, 107.300.824 iyileşen vaka varken virüs nedeniyle 2.866.728 kişi öldü. Tanımlayıcı nitelikte olan bu çalışmada 01.12.2019-29.02.2020 tarihleri Pandemi öncesi(PÖ)dönem, 01.03.2020-01.06.2020 tarihleri arası Pandemi dönemi olarak kabul edilmiştir. Belirtilen aylarda Evde Sağlık Hizmeti (ESH) alan hastaların yaş, cinsiyet, eşlik eden kronik hastalıkları, hastaların ESH takibinden çıkma nedenleri, ESH alan hastaların aylık ölüm sayıları gibi paramatreler Pandemi öncesi ve Pandemi dönemi şeklinde kıyaslanmıştır. Verilere Adıyaman Eğitim ve Araştırma Hastanesi ESH Aylık Hastane Bilgi Formlarının retrospektif incelenmesiyle ulaşılmıştır. Araştırmamızda PÖ kadın/erkek oranı:1.5 iken pandemide 1.23tür.PÖ'de 65 yaş üstü ESH alanlar %67 iken pandemide bu oran %72dir.PÖ, ESH alan hastalarda eşlik eden kronik hastalıklar; Koroner Arter Hastalığı(KAH) (3 aylık dönemde:1800 vaka), Senil demans/serilite (1777 vaka), Aritmi(1775 vaka), DM(1352 vaka) şekindeydi. Pandemide bu sıralama KAH (3 aylık dönemde 1806) Aritmi(1774 vaka)), Senil demans/serilite (1773 vaka), DM(1387 vaka)şeklinde olup PÖ'de de pandemide de ensık eşlik eden hastalık KAH olmuştur. Gerek PÖ gerekse pandeminin etkili olduğu dönemde; 1.Sırada hasta muayenesi 2.Sırada yara pansumanı, 3. Sırada ım enjeksiyon işlemi yapılmış olup her iki dönemde de verilen hizmet sıralamalası aynıydı. PÖ kişilerin takipten çıkarılma sebepleri; Ölüm %60, iyileşme %27 iken Pandemideki sıralama %57 ile ölüm ardından %25 ile Tedaviyi reddetmeydi. PÖ %6.6 ile (n:8) kişi tedavi redle ESH takibinden çıkmışken, pandemide %25 (n:33) kişinin tedaviyi reddetmesi; kişilerin sağlık çalışanlarından uzak durmak istemesi, korku ve endişe şeklinde yorumlanabilir. ESH alan hastaların aylık ölüm sayıları Aralık 2019 ile Mayıs 2020 arasında aylara göre sırasıyla; 26,27,20,15,34,34 kişi şeklindeydi.

Anahtar Kelimeler: Evde Sağlık Hizmetleri, COVID-19, Pandemi Öncesi- Pandemi

ABSTRACT

Home health services; It can be defined as providing the necessary health and social service support at a professional level and by family members in the environment where the individual lives, in order to protect, improve and restore the health of the individual. In December 2019, the (COVID-19) outbreak was first detected in Wuhan, China, it spread rapidly and as of April 7, 2021, there were 133.050.027 confirmed cases, 107.300.824 recovered cases in the world, while 2.866.728 people died due to the virus. In this descriptive study, the dates 01.12.2019-29.02.2020 were accepted as the pre-pandemic (PP) period and the period between 01.03.2020-01.06.2020 was pandemic period. Parameters such as age, gender, concomitant chronic diseases of patients receiving Home Health Service (HHS) in the specified months, reasons for discontinuing HHS follow-up, monthly deaths of patients receiving HHS were compared as pre-pandemic and pandemic period. The data were obtained by retrospective examination of Adıyaman Training and Research Hospital HHS Monthly Hospital Information Forms. In our

study, while the PP female / male ratio is 1.5, it is 1.23 in the pandemic. While 67% of HHS recipients over the age of 65 are 67% in PP, this rate is 72% in a pandemic. PP,Concomitant chronic diseases in patients receiving HHS; Coronary Artery Disease (CAD) (In the 3-month period: 1800 cases), Senile dementia / cerility (1777 cases), Arrhythmia (1775 cases), DM (1352 cases). In the pandemic, CAD (1806 in a 3-month period) Arrhythmia (1774 cases), Senile dementia / serility (1773 cases), DM (1387 cases). The most common accompanying disease in both PP and pandemic was CAD. During the period when both PP and pandemic; Patient examination was performed in the first row, wound dressing in the second row, and injection procedure in the third row. The service ranking in both periods was the same.PP,reasons for dismissal of HHS persons; While death was 60%, recovery was 27%, the ranking in the pandemic death was 57%, refuse treat was 25%. With 6.6% PÖ (n: 8), the person left the ESR follow-up with refusal to treat, whereas the fact that this rate is 25% (n: 33) in a pandemic . This situation can be interpreted as people's desire to stay away from healthcare workers during the pandemic period, as fear and anxiety.The monthly deaths of patients receiving HHS between December 2019 and May 2020 are; 26,27,20,15,34,34 persons.

Keyworlds: Home Health Services, COVID-19, Before Pandemic - Pandemic

EL ALETLERİNDE İŞ SAĞLIĞI VE GÜVENLİĞİ

OCCUPATIONAL HEALTH AND SAFETY IN HAND TOOLS

Abdulhalık YEŞİLYURT

Ankara Yıldırım Beyazıt Üniversitesi, Fen Bilimleri Fakültesi, İş Sağlığı ve Güvenliği Yüksek Lisans Programı,

ORCID NO: 0000-0003-3523-9153 (Sorumlu Yazar)

Dr.Dilek ÖZTAŞ

Doç. Dr., Ankara Yıldırım Beyazıt Üniversitesi, Tıp Fakültesi, Halk Sağlığı,

ORCID NO: 0000-0002-8687-7238

Abdullah YILDIZBAŞI

Dr. Öğr. Üyesi, Ankara Yıldırım Beyazıt Üniversitesi, Fen Bilimleri Enstitüsü,

ORCID NO: 0000-0001-8104-3392

Ergün ERASLAN

Prof., Ankara Yıldırım Beyazıt Üniversitesi, Fen Bilimleri Enstitüsü,

ORCID NO: 0000-0002-5667-0391

ÖZET

Günümüz şartlarında inşaat, sanayi ve endüstri gibi alanlarda el aletleri kullanılmaktadır. El aletleri, kol gücüyle ve herhangi bir başka enerji yardımı ile çalıştırılabilirler. El aletleri, çeşitli maddeleri sıkıştırmak, karıştırmak, kesmek, düzeltmek, asmak, zımbalamak, delmek, ısıtmak, çevirmek, sürmek, şekil vermek veya işaretlemek için kullanılır. El aletleri keskin kenarlı, sivri uçlu, kare şeklinde, kıskaç ağızlı ve olağandışı sıcak veya soğuk olabilir. El aletleri, kullananlar ve hatta orada bulunan, yapılan işle ilgisi olmayan başkaları içinde tehlikeli olabilir ve yaralanmalara da neden olabilirler. El aletleri ile çalışırken herhangi bir iş kazasına neden olmamak için bazı kurallara uymak gerekir. El aletleri kullanırken; uygun olmayan alet kullanmak, aletleri yöntemine uygun kullanmamak, yetersiz bakım ve uygun olmayan depolamalar başlıca iş kazalarınının nedenlerindendir. Birçok kaza el aletlerinin veya aletlerin bazı kısımlarının kırılmasından dolayı meydana gelir. El aletleri yalnızca yapıldıkları işler için kullanılmalıdır. El aletlerinin yapıldıkları işler için kullanılmamaları halinde tehlike oluşturur. Çünkü alet kırılabilir, fırlayabilir veya kayabilir ve sonuç olarak bir kazaya neden olabilirler. Çelikten yapılmış darbe aletleri güvenlik bakımından oldukça etkilidirler. Yumuşak çelikten başlıklar darbe karşısında saçaklanır ve alet bu saçaklarından zamanında kurtulmazsa, bunu izleyen kullanışlarında saçaklar kopup fırlayacak ve çevredeki kimselere zarar verebilecektir. Keskin kenarlı veya sivri uçlu el aletleri kullanılmadıkları zaman keskin kenar ve uçlarının koruyucu başlıklar altına alınması gerekir. El aletleri periyodik olarak kontrol edilmelidir. El aletleri kullanımında eğitim ve çalışma tarzının düzenli şekilde konrolünün yapılması gerekmektedir.

Anahtar Kelimeler: El aletleri, İş Sağlığı ve Güvenliği, Kazalar, Tehlike, Eğitim

ABSTRACT

In today's conditions, hand tools are used in areas such as construction, industry and industry. Hand tools can be operated with arm power and with the aid of any other energy. Hand tools are used for clamping, mixing, cutting, straightening, hanging, punching, punching, heating,

turning, driving, shaping or marking various materials. Hand tools can be sharp-edged, pointed, square-shaped, with a pincer mouth, and unusually hot or cold. Hand tools, users, and even others who are not involved in the work being done, can be dangerous and can cause injuries. When working with hand tools, some rules must be followed in order not to cause any work accident. When using hand tools; Using unsuitable tools, not using the tools properly, insufficient maintenance and improper storage are the main causes of work accidents. Many accidents occur when tools or parts of tools break. Hand tools should only be used for the work for which they were made. It creates danger if hand tools are not used for the work they are made for. This is because the tool may break, fly off or slide and consequently cause an accident. Impact tools made of steel are very effective in terms of safety. If the soft steel heads are frayed in the face of the impact and the tool does not get rid of these eaves in time, the fringes will rupture and fly off and damage the people around. When sharp-edged or pointed hand tools are not used, their sharp edges and tips should be taken under protective caps. Hand tools should be checked periodically. It is necessary to regularly control the training and working style in the use of hand tools.

Keywords: Hand Tools, Occupational Health and Safety, Accidents, Danger, Education

ÜNİVERSİTE ÖĞRENCİLERİNİN REÇETESİZ İLAÇ KULLANIM DURUMLARININ BELİRLENMESİ

ASSESSMENT OF NON-PRESCRIPTION MEDICATION USE AMONG UNIVERSITY STUDENTS

Artun ONUKER

Araştırma Görevlisi Dr., İzmir Katip Çelebi Üniversitesi, Tıp Fakültesi, Halk Sağlığı Anabilim Dalı, (Sorumlu Yazar)

Dilan ERBAŞ

Dönem 3 öğrencisi, İzmir Katip Çelebi Üniversitesi, Tıp Fakültesi

Asya Banu BABAOGLU

Dr. Öğr. Üyesi, İzmir Katip Çelebi Üniversitesi, Tıp Fakültesi, Halk Sağlığı Anabilim Dalı

ÖZET

Günümüzde ilaçların kolay temin edilebilmesi, gelişen teknolojiye bağlı olarak bilgiye hızlı ulaşılabilmesi, değişen sağlık politikaları gibi faktörler bireylerin bilinçsiz ve kendi kendine ilaç kullanım oranlarını arttırmıştır. Reçetesiz ilaç kullanımı, zehirlenme, semptomları gizleme ve hastalığın tanılanmasını geciktirme, bağımlılık ve hatta ölüm gibi istenmeyen sonuçlara neden olabilir. Ülkemizde üniversite öğrencilerinin çeşitli nedenlerle ilaçları bilinçsizce ve yanlış tükettiklerini gösteren çalışmalar mevcuttur. Bu araştırmada üniversite öğrencilerinin reçetesiz ilaç kullanma durumlarının ve bu davranışa etki eden faktörlerin tespit edilmesi amaçlanmıştır.

Kesitsel türde planlanan araştırma evrenini İzmir'de bir üniversitede okuyan 11.577 öğrenci oluşturmakta olup, %95 güç, %50 sıklık ve %5 hata payı kabul edildiğinde ulaşılması gereken en küçük örneklem büyüklüğü 372 olarak belirlenmiştir. Araştırmacılar tarafından güncel literatüre dayandırılarak hazırlanan bir anket çevrimiçi olarak kartopu örnekleme yöntemi kullanılarak öğrencilere ulaştırılmıştır.

Çalışmaya 383 kişi katılmış olup %68,1'i kadın, yaş ortalaması 19,98 (±1,522)'dir. Öğrencilerin yaklaşık yarısı (%46,5) reçetesiz ilaç kullandıklarını belirtmiştir. Sürekli ilaç kullanımını gerektiren bir hastalığı bulunan öğrencilerin reçetesiz ilaç kullanma oranları, sürekli ilaç kullanmayı gerektiren bir durumu olmayan öğrencilere göre yüksekti (p=0,013). En sık reçetesiz ilaç kullanma nedenleri, hastalığın hafif olduğunun düşünülmesi (%64), daha önce doktor tarafından benzer şikayet için reçete edilmiş bir ilaç olması (%59,6) ve öğrencinin kendi tecrübesine göre şikayetine iyi geleceğini düşündüğü bir ilaç olması (%38,2) olarak belirlenmiştir. Öğrencilerin %18'i sağlık kuruluşlarında bekleme süresi uzun olduğu için ve %15'i ise okul yoğunluğu nedeniyle reçetesiz ilaç almayı tercih ettiklerini ifade etmişlerdir. Doktora ulaşmada güçlük çekme, tedaviyi daha ucuza mal etme veya sosyal güvencenin bulunmaması gibi nedenleri gerekçe gösterenlerin oranı sırasıyla %7,9, %3,4 ve %2,2 idi.

Araştırma sonuçları, öğrencilerin doktora ulaşmasını engelleyen olumsuz bir durum olmamasına rağmen reçetesiz ilaç kullanma oranının yüksek olduğunu göstermektedir. Olası istenmeyen sonuçlara yol açabilecek bu durumun önüne geçebilmek için üniversite öğrencilerine kampüs içinde farkındalık çalışmaları yapılması ve her ne sebeple olursa olsun ilaç kullanma ihtiyacı duydukları durumda öncelikle sağlık kuruluşuna başvurmaları gerektiği konusunda bilgilendirme yapılması önerilmektedir.

Anahtar Kelimeler: Reçete, İlaç, Üniversite, Öğrenci

ABSTRACT

Factors such as easy availability of drugs, rapid access to information due to developing technology, and changing health policies have increased the rate of unconscious and self-medication use of individuals. Non-prescription drug use can lead to undesirable consequences such as intoxication, hiding symptoms and delaying the diagnosis of the disease, addiction, and even death. In our country, there are studies showing that university students consume drugs unconsciously and incorrectly for various reasons. In this study, it was aimed to determine the non-prescription drug use of university students and the factors that affect this behaviour.

The research universe of this cross-sectional study consists of 11,577 students studying at a university in Izmir and the smallest sample size to be reached was determined as 372 when 95% power, 50% frequency and 5% margin of error are considered.

A total of 383 people participated in the study, the average age was 19.98 (± 1.522) and 68.1% of the participants were women. Almost half of the students (46.5%) stated that they used non-prescription drugs. The rate of non-prescription medication use of students with a disease requiring continuous medication use was higher than the students who did not have a condition requiring continuous medication ($p = 0.013$). The most common reasons for using non-prescription drugs were believing to have a mild disease (64%), using a drug previously prescribed by a doctor for similar complaints (59,6%), and a drug that the student thought would be good for his/her complaint according to previous experiences (38,2%). Of the students 18% stated that they preferred to take non-prescription drugs because of the long waiting time in health institutions and 15% because of school intensity. The rates of those who cited reasons such as having difficulty in reaching a doctor, cheaper treatment or lack of social security were 7.9%, 3.4% and 2.2%, respectively.

Research results show that although there is no negative situation that prevents students from reaching a doctor, the rate of using non-prescription drugs is high. In order to prevent this situation that may lead to possible undesirable consequences, it is recommended that university students should be informed about the need to apply to the health institution first in case they need to use medication for whatever reason.

Keywords: Prescription, Medicine, University, Student

COVID-19 PANDEMİ DÖNEMİNDE HEMŞİRELİK EĞİTİMİNDE TEKNOLOJİNİN KULLANIMI: ARTIRILMIŞ VE SANAL GERÇEKLİK UYGULAMALARI

USE OF TECHNOLOGY IN NURSING EDUCATION DURING COVID-19 PANDEMIA: AUGMENTED AND VIRTUAL REALITY APPLICATIONS

Şeyda KAZANÇ

Öğretim Görevlisi, Tokat Gaziosmanpaşa Üniversitesi Hemşirelik Esasları Anabilim Dalı,

(Sorumlu Yazar)

Şerife KARAGÖZOĞLU

Prof. Dr., Sivas Cumhuriyet Üniversitesi Hemşirelik Esasları Anabilim Dalı

ÖZET

Covit-19 pandemisi, Dünya çapında eğitimin her kademesinde özellikle yükseköğretimde önemli zorluklar yaşanmasına neden olmuş, pandemi öncesi dönemde yüz yüze gerçekleştirilen eğitim acil ve beklenmedik bir şekilde çevrimiçi olarak yürütülmeye başlanmıştır. Hayatımızın büyük bir parçasını oluşturan teknolojik gelişmeler bu süreçte de önem ve gerekliliğini göstererek, eğitim-öğretimin vazgeçilmez enstürmanları haline gelmiştir. Hemşirelik eğitiminde de benzer süreç izlenmiş ve yüz yüze yürütülen teorik ve uygulama temelli eğitimler uzaktan eğitim teknolojileri kullanarak yürütülmeye başlanmıştır. Pandemi nedeniyle uzaktan gerçekleşen eğitim sürecindeki aksaklıkların yönetilmesi ve giderilmesinde eğitimin daha kaliteli ve etkin sürdürülmesinde teknoloji önemli bir rol oynamıştır. Çevrimiçi uzaktan eğitim süreci yalnızca eğitim içeriğinin kullanılan sisteme yüklenmesi değil, öğrenciler için sorumluluk, esneklik ve seçim sağlayan bir öğrenme süreci olmuştur. Etkili bir öğrenme için dikkatli planlama, tasarım ve hedeflerin belirlenmesini gerektiren karmaşık bir süreç yaşanmıştır. Öğrenciler, kullanılan yazılım ve bilgisayar teknolojileri sayesinde uygulama sürecini izleyebilmekte ve gerçekleştirdikleri eylemin değerlendirmesini yapabilmektedir. Bilgisayar teknolojisinin kullanıldığı yapılan çalışmalarda öğrencilerin memnuniyet, beceri ve kendilerine olan güvenlerinin arttığı, kaygılarının azaldığı belirlenmiştir. Bu doğrultuda kullanılan eğitim yöntemlerinden biri olan sanal gerçeklik uygulamaları uzaktan öğretim süreçlerinde klinik uygulamaya hazırlık aşaması olarak büyük bir boşluğu doldurabilmektedir. Bu bağlamda bu derleme çalışmamızda, teknolojinin eğitim hayatındaki önemi, ileri teknolojinin ürünü olan ve pandemi döneminde önemi katlanarak artan sanal gerçeklik uygulamalarının hemşirelik eğitiminde kullanımı üzerinde durulmuş ve örneklendirmeler ile bu uygulamaların önemi-gereği tartışılmıştır.

Anahtar Kelimeler: Pandemi, Hemşirelik eğitimi, Artırılmış Gerçeklik, Sanal Gerçeklik

ABSTRACT

The Covit-19 pandemic has caused significant difficulties at all levels of education, especially in higher education, worldwide, and face-to-face training in the pre-pandemic period began to be carried out urgently and unexpectedly online. Technological developments, which constitute a large part of our lives, have become indispensable instruments of education by showing their importance and necessity in this process. A similar process was followed in nursing education, and face-to-face theoretical and practice-based trainings were started using distance education technologies. Technology has played an important role in the management and elimination of disruptions in the education process that occurred due to the pandemic in a better quality and effective way. The online distance education process has not only been the uploading of educational content to the system used, but a learning process that provides responsibility,

flexibility and choice for students. There has been a complex process requiring careful planning, design and setting goals for effective learning. Thanks to the software and computer technologies used, students can follow the application process and evaluate the action they take. In studies using computer technology, it was determined that students' satisfaction, skills and self-confidence increased, and their anxiety decreased. Virtual reality applications, one of the training methods used in this direction, can fill a huge gap in distance education processes as a preparation stage for clinical practice. In this context, in this review study, the importance of technology in education life, the use of virtual reality applications, which are the products of advanced technology and whose importance has increased exponentially during the pandemic period, are emphasized and the importance and necessity of these applications are discussed with examples.

Keywords: Pandemic, Nursing education, Augmented Reality, Virtual Reality

HASTANE DIŞI KARDİYAK ARREST VAKALARINDA EKİP ÇALIŞMASI VE CPR UYGULAMALARININ KALİTESİ: HEMŞİRELİK BAKIŞ AÇISIYLA

TEAMWORK AND QUALITY OF CPR PRACTICES IN OUT-OF-HOSPITAL CARDIAC ARREST CASES: FROM A NURSING PERSPECTIVE

Şerife KARAGÖZOĞLU

Prof. Dr. Sivas Cumhuriyet Üniversitesi Sağlık Bilimleri Fakültesi Hemşirelik Bölümü,

(Sorumlu Yazar)

Esra ELİK

Yüksek Lisans Öğrencisi, Sivas Cumhuriyet Üniversitesi Sağlık Bilimleri Enstitüsü Hemşirelik Esasları Anabilim Dalı

ÖZET

Hastane dışı kardiyak arrest vakaları 112 çalışanlarının en çok müdahalede bulunduğu vakalardır. Vakaların çoğuna yerinde veya ambulansta müdahale edilmektedir. Kardiyak arrest, serebral ve miyokardiyal iskemik hasar ve yaşamsal organlara yetersiz perfüzyon nedeniyle kalp debisinde ciddi azalmanın meydana geldiği acil bir durumdur. Ölüm oranlarının en çok görüldüğü vaka türlerinin başında kardiyak arrest gelmektedir. Bu tablonun tedavisi için Kowenhouen tarafından 1960'da kapalı göğüs kompresyonu tanımlanmasından günümüze kadar özellikle son on yılda ileri kardiyak yaşam desteği konusunda birçok değişiklik yaşanmıştır. Bu süre içinde dünyadaki gelişmeler doğrultusunda sürekli yenilenen kardiyopulmoner resüsitasyon (CPR), kardiyak arrest sonrasında sağ kalım zinciri olarak adlandırılan bir dizi hayat kurtarıcı eyleme dönüşmüştür. Yüksek kalitede CPR ile hastanın önceki yaşam kalitesi ve fonksiyonel sağlık durumuna geri dönülmesi amaçlanır. Bu noktada vakaya müdahale eden acil sağlık çalışanlarının bilgi, beceri ve tutumları son derece önem arz etmektedir. Sağlık çalışanlarının vakaya müdahale şekillerinin doğru ve etkili olması, vaka yönetimi ve postkardiyak arrest bakımı ölüm oranlarının düşmesinde oldukça etkilidir. Ancak sağlık çalışanlarının bilgi-deneyim eksikliği yaşanılan kaygıyı artırabilmekte ve bireye yapılan müdahaleleri olumsuz etkileyebilmektedir. Dolayısı ile sağlık çalışanlarının acil vakalara yaklaşımları ve müdahalelerinde ekip anlayışına sahip olmaları CPR uygulamasının kalitesini belirler. Bu anlamda acil sağlık çalışanlarının arasında hemşirelerin yer alması koordinasyon açısından büyük bir avantaj sağlar. Hemşireler arrest vakalarında profesyonel bilgi, beceri ve deneyimlerini kullanarak hastayı hayata döndürmeye önemli katkıda bulunan ekibin vazgeçilmez üyeleridir. Bu derleme çalışma ile sağlık hizmet sunucusu olan ve özveriyle çalışan sağlık çalışanlarının ekip ruhuyla gerçekleştirdiği CPR uygulamalarına bir bakış ve gösterilen performansın incelenmesi hedeflenmiştir.

Anahtar Kelimeler: Kardiyak Arrest, Kardiyopulmoner Resüsitasyon, Ekip Çalışması, CPR Uygulaması

ABSTRACT

Out-of-hospital cardiac arrest cases are the 112 most frequently intervened cases. Most cases are handled on-site or in an ambulance. Cardiac arrest is an emergency case in which severe reduction in cardiac output occurs due to cerebral and myocardial ischemic damage and insufficient perfusion to vital organs. Cardiac arrest is the most common type of death. From the definition of closed-chest compression by Kowenhouen in 1960 to the present day, there have been many changes in advanced cardiac life support, especially in the last decade. During this time, cardiopulmonary resuscitation (CPR), which is constantly renewed in line with

developments in the world, has turned into a series of life-saving actions called the survival chain after cardiac arrest. High-quality CPR is aspired after restoring the patient's previous quality of life and functional health status. At this point, the knowledge, skills, and attitudes of emergency health workers who intervene in the case are vital. Accurate and effective forms of case intervention by health workers, case management and postcardiac arrest care are very effective in reducing death rates. But the lack of knowledge and experience of health workers can increase anxiety and negatively affect individual interventions. Therefore, the fact that health workers have a team understanding in their approach and intervention to emergency cases determines the quality of CPR practice. In this sense, the inclusion of nurses among emergency health workers provides a great advantage in terms of coordination. Nurses are indispensable members of the team who make a significant contribution to bringing the patient back to life using their professional knowledge, skills, and experience in arrest cases. This review aim is to look at the CPR practices are performed by health workers who are health service providers and work with dedication in a team spirit to examine the performance shown.

Keywords: Cardiac Arrest, Cardiopulmonary Resuscitation, Teamwork, CPR Application

GEÇMİŞTEN GÜNÜMÜZE HEMŞİRELİK EĞİTİMİNDE SİMÜLASYON UYGULAMALARI

SIMULATION APPLICATIONS IN NURSING EDUCATION FROM PAST TO PRESENT

Şeyda KAZANÇ

Öğretim Görevlisi, Tokat Gaziosmanpaşa Üniversitesi Hemşirelik Esasları Anabilim Dalı, (Sorumlu Yazar)

Şerife KARAGÖZOĞLU

Prof. Dr. Sivas Cumhuriyet Üniversitesi Hemşirelik Esasları Anabilim Dalı

ÖZET

Hemşirelik her çağda insan hayatına dokunan toplum ve bireylerle yakından ilişki içinde olan bir meslek grubudur. Bu nedenle hemşirelik eğitimi bilişsel, duyuşsal ve psikomotor alanlarda meslek üyelerini yetiştirerek, toplumda mesleki rollerin etkin olarak kullanılabilmesini hedefler. Günümüzde hemşirelik eğitiminin 2/3'si uygulama üzerinden gerçekleştirilmektedir. Uygulama sürecinin hem labaratuar hem de klinik ayağı bulunmakta, labaratuvar uygulamaları klinik uygulamalar için hazırlık süreci olarak kullanılmaktadır. Günümüzde labaratuvarlarda hemşirelik eğitiminde kullanılan maketler de teknolojinin gelişimi ile paralel gelişim göstermiştir. Plastikten yapılmış basit iskelet, vücudun tekbir uzvunu gösteren 2 ya da 3 boyutlu modellerden doğru ve yanlış gerçekleştirilen uygulamalara tepki veren, internet ve bilgisayarla verilerin değiştirilebildiği, insanlara yüksek benzerliği olan simülatörler ile eğitime geçilmiştir. Günümüzde maket ve labaratuvarların klinik ortamla benzerliğinin yüksek olduğu ortamlarda verilen eğitim öğrencilerin klinik uygulamaya daha hazır çıkmasına olanak sağlamaktadır. Öğrencilerin bireysel ve hızlı olarak çalışmaları, hatanın güvenli bir ortamda yapılması ve zarar verme riskinin olmaması, düşük maliyetli olması, hızlı bir şekilde geri dönüş sağlaması, etkili ve bilişsel bir öğrenme sağlaması, probleme odaklanma ve her öğrencinin ortak bir deneyim kazanması simülasyonun avantajları arasında belirtilmektedir. Simülasyon eğitiminin geceleği düşünüldüğünde, eğitiminin maliyetli olması, eğitim sürecinde potansiyel faydalarının etkili yöntemlerle değerlendirilememesi bazı kurumlarda eğitim ve öğretim tercihleri arasında yer almamasına neden olmaktadır. Bu doğrultuda değerlendirmelerin simülasyon uygulamalarından elde edilen kanıtlar doğrultusunda yapılarak karar verilmesi gerekmektedir. Simülasyon yöntemini eğitim sürecinde yetersiz olarak kabul eden herhangi bir kanıt bulunmaması, eğitimde aktif olarak kullanılacağını göstermektedir. Bu bağlamda çalışmamızda simülasyon eğitiminin tarihsel süreci, günümüzde kullanımı ve gelecekteki potansiyel durumu ele alınmıştır.

Anahtar Kelimeler: Simülasyon uygulamaları, Simülasyon tarihi, Hemşirelik eğitimi

ABSTRACT

Nursing is a profession group that is in close contact with the society that touches human life in every age. Cognitive education aims to train affective and psychomotor profession members, so that professional roles can be used effectively in the society. Today, 2/3 of nursing education is carried out through practice. There are both laboratory applications and clinical legs for application applications, and laboratory applications are widely used for clinical applications. The development of parallel development with the development of technology used in nursing education in today's laboratories. The training was started with simulators that react to right and wrong applications from 2 or 3 dimensional models, can be changed by internet and computer, and have high resemblance to humans. Today, training programs given in environments where

models and laboratories are similar to the clinical environment, enable clinical standing. The advantages of the simulation are that students work individually and quickly, that the error is made in a safe environment and that there is no risk of harm, low cost, rapid return, providing an effective and cognitive learning, focusing on the problem, and gaining a common experience for each student. Considering the night time of simulation education, the cost of its education and the inability to evaluate its potential benefits in the education process with effective methods causes it not to be among education and training preferences in some institutions. In this direction, the evaluations should be made in line with the evidence obtained from the simulation applications and a decision should be made. The absence of any evidence that accepts the simulation method as insufficient in the training process indicates that it will be used actively in education. In this context, the historical process of simulation training, its use today and its potential in the future are discussed in our study.

Keywords: Simulation applications, Simulation history, Nursing education

MOTORLU ARAÇLARDA İŞ SAĞLIĞI VE GÜVENLİĞİ

Rüveyda KOCUR

Ankara Yıldırım Beyazıt Üniversitesi, Fen Bilimleri Enstitüsü İş Sağlığı ve Güvenliği Yüksek Lisans Öğrencisi, Kırıkkale Üniversitesi İnşaat Mühendisliği

ORCID ID: 0000-0002-0236-6511

Dilek ÖZTAŞ

Doç. Dr. Öğr. Üyesi, Ankara Yıldırım Beyazıt Üniversitesi, Halk Sağlığı

ORCID ID: 0000-0002-8687-7238

Abdullah YILDIZBAŞI

Dr. Öğr. Üyesi, Ankara Yıldırım Beyazıt Üniversitesi, Fen Bilimleri Enstitüsü

ORCID ID: 0000-0001-8104-3392

Ergün ERASLAN

Prof. Dr. Öğr. Üyesi, Ankara Yıldırım Beyazıt Üniversitesi, Fen Bilimleri Enstitüsü

ORCID ID: 0000-0002-5667-0391

ÖZET

Motorlu araçlar; ısı enerjisini mekanik enerjiye dönüştürerek hareket veren, yük ve yolcu taşımak amacıyla karayollarında kullanılan makinelerdir. Kullandıkları yakıta göre ve kullanım amaçlarına göre sınıflandırılırlar. İş makineleri ve kaldırma makineleri yani forklift ve vinçler motorlu araçlara örnektir. İş makineleri 2918 Sayılı Karayolları Trafik Kanunu'ndaki tanıma göre; yol, inşaat makineleri ile benzeri tarım, sanayi, bayındırlık, milli savunma ile çeşitli kuruluşların iş ve hizmetlerinde kullanılan iş amacına göre üzerine çeşitli ekipmanlar monte edilmiş; karayolunda insan, hayvan, yük taşımasında kullanılamayan motorlu araçlardır. Örneğin; ekskavatör, dozer, greyder, loder, silindir, skrayper, tünel açma makinesi gibi. Forklift ve vinçler ise herhangi bir yükü bulunduğu yerden yukarıya kaldırarak veya yer değiştirerek istifleyen, taşıyan, istenilen konuma getiren iş makineleridir. Bu iş makinelerini kullanmaya yetkili kişilere operatör ismi verilir.Bir kişinin operatör olabilmesi için öncelikle G sürücü belgesine sahip olması ve MEB Özel Öğretim Kurumları Genel Müdürlüğünden yetki almış kuruluşlardan, teorik ve uygulamalı sınav sonucu başarılı olmaları gerekmektedir.Operatörlerin oluşabilecek her türlü kazanın önüne geçebilmek adına iş sağlığı ve güvenkiği eğitimi almaları ve uygulamaları gerekmektedir.İş kazalarının önüne geçebilmek adına iş makinelerinin bakımının düzenli olarak sağlanması, iş makinesi çalışırken gerekli emniyet tedbirlerinin alınması, çalışma alanının emniyetinin sağlanması, iş makinesi park edilirken dikkatli olunması gerekir. Önlem olarak acil durum planı yapması, kişilerin bilinçlendirilmesi, ilk yardım malzemeleri ve yangın söndürme araçları uygun yerlerde hazır bulundurulması ve çalışma sahasının yeterli genişlikte olmasına özen gösterilmelidir. Motorlu araç ve iş makinelerinin;verimli çalışması,uzun ömürlü olması,ekonomik çalışması için bakım ve onarımları gerekli periyotlarda yapılmalıdır.

Anahtar Kelimeler: Motorlu Araç ve İş Makineleri, İş Sağlığı ve Güvenliği, Önlemler

ABSTRACT

Motor vehicles are machines that give motion by converting heat energy into mechanical energy and are used on highways for the purpose of transporting cargo and passengers. They are

classified according to the fuel they use and their intended use. Construction machines and lifting machines, i.e. forklifts and cranes, are examples of motorized vehicles. Construction machinery according to the definition in the Road Traffic Law No. 2918; road, construction machinery and similar agriculture, industry, Public Works, National Defense and various organizations used in the work and services according to the purpose of the work mounted on various equipment; people, animals, motor vehicles can not be used in the transportation of cargo on the highway. For example; excavator, dozer, grader, loder, cylinder, skrayper, tunneling machine. Forklifts and cranes are work machines that stack, carry, and bring any load to the desired position by lifting or moving it up from where it is located. The persons authorized to use these work machines are given the name of the operator. In order for a person to be an operator, they must first have a G driver's license and be successful as a result of theoretical and practical exams from organizations authorized by the General Directorate of private educational institutions of the MEB. Operators are required to receive and practice Occupational Health and safety training in order to prevent any accidents that may occur. In order to prevent work accidents, it is necessary to ensure the maintenance of work machines regularly, take the necessary safety measures when the work machine is running, ensure the safety of the work area, and be careful when the work machine is parked. As a precaution, care should be taken to make an emergency plan, raise awareness of people, keep first aid supplies and fire fighting tools ready in appropriate places, and ensure that the work area is sufficiently wide. For efficient operation,longevity,economical operation of motor vehicles and construction machinery, maintenance and repair should be done in the necessary periods.

Keywords: Motor Vehicles and Construction Machinery, Occupational Health and Safety, Precautions

KORONER GİRİŞİM SONRASI PERİFERİK VASKÜLER KOMLİKASYONLARIN ÖNLENMESİNDE KULLANILAN YÖNTEMLER VE HEMŞİRENİN ROLÜ

Emine KORKMAZ

Uzman Hemşire, Kayseri Şehir Eğitim ve Araştırma Hastanesi, Sertifikalı Eğitim Koordinatörlüğü, (Sorumlu Yazar)

Şerife Karagözoğlu

Prof. Dr. Cumhuriyet Üniversitesi Sağlık Bilimleri Fakültesi, Hemşirelik Bölümü

ÖZET

Kardiyovasküler hastalıklar gelişmiş ülkelerdeki morbidite ve mortalitenin en sık nedenidir ve total ölümlerin 1/3'ünden sorumludur. Koroner Arter Hastalığı'nın (KAH) prevalansı Türkiye ve diğer gelişmekte olan ülkelerde giderek artmakta olup hastalığın ortaya çıkışını ve seyrini etkileyen çok sayıda risk faktörünün olduğu belirlenmiştir. KAH'ın en sık sebebi koroner aterosklerozdur. KAH'nın tanısında, günümüz koşullarında halen standart yaklaşım Koroner Anjiografi (KAG) olmakla birlikte KAH'nın hem tanısı hem de tedavisinde Perkütan Koroner Girişimler (PKG) uygulanabilmektedir. Hem KAG hem de PKG için en sık tercih edilen periferal vasküler giriş yeri femoral arterdir. Koroner girişime bağlı komplikasyonlar major (ölüm, Mİ, inme) veya minor (aritmiler, geçici iskemik atak, vasküler giriş yeri komplikasyonları, böbrek yetmezliği, kontrast ajana bağlı allerjik reaksiyonlar) olmak üzere iki gruba ayrılır. Sıklıkla karşılaşılan vasküler komplikasyonlar ise hematom, ekimoz, kanama ve ağrıdır**.** Vasküler komplikasyon gelişimi açısından en önemli risk faktörleri ileri yaş, kadın cinsiyeti, düşük vücut ağırlığı, kronik hastalık varlığı, prosedürün tipi ve prosedür esnasında kullanılan ilaçlardır. Günümüzde koroner girişim sonrasında vasküler komplikasyonların kontrolünde klasik kum torbası yöntemi yaygın olarak kullanılmaktadır. Kum torbası yönteminin yanında çeşitli marka ve modellerde damarsal kapama ve kompresyon cihazları da vasküler komplikasyonların kontrolünde kullanılabilmektedir. Yapılan çalışmalarda vasküler komplikasyonların önlenmesinde diğer bir yöntem olarak soğuk uygulamadan bahsedilmektedir. KAG veya PKG sonrası hasta bakımını; işlem öncesi, işlem sırası ve işlem sonrası olmak üzere üç başlık altında incelemek mümkündür. Sağlık ekibi içinde önemli bir yere sahip olan hemşirelerin KAG ve PKG de olası komplikasyonların azaltılması ve önlenmesinde önemli sorumlulukları bulunmaktadır. Hemşirelik uygulamalarındaki amaç, olası komplikasyonların önlenmesi, hastanın erken mobilizasyonunun sağlanması, ağrıyı azaltmak ve yaşam kalitesini artırmaktır.

Anahtar Kelimeler: Koroner girişim; Periferik vasküler komplikasyon; Kum torbası; Close ped; Soğuk uygulama

ABSTRACT

Cardiovascular diseases are the most common cause of morbidity and mortality in developed countries and responsible for 1/3 of total deaths. The prevalence of Coronary Artery Disease (CAD) is increasing in Turkey and other developing countries and is determined that a large number of risk factors influencing the onset and course of the disease. The most common cause of CAH is coronary atherosclerosis. In the diagnosis of CAD, the standard approach is still Coronary Angiography (CAG), but Percutaneous Coronary Interventions (PCI) can be applied in both diagnosis and treatment of CAD. The most preferred peripheral vascular access site for both CAG and PCI is the femoral artery. Complications related to coronary intervention are divided into two groups as major (death, MI, stroke) or minor (arrhythmias, transient ischemic attack, vascular access site complications, kidney failure, allergic reactions due to contrast

agent). Common vascular complications are hematoma, ecchymosis, bleeding and pain. The most important risk factors for the development of vascular complications are advanced age, female gender, low body weight, presence of chronic disease, the type of the procedure and the drugs used during the procedure. Nowadays, the classical sandbag method is widely used in controlling vascular complications after coronary intervention. Besides the sandbag method, various brands and models of vascular closure and compression devices can also be used in controlling vascular complications. In some studies cold application is mentioned as another method in preventing vascular complications. Patient care after CAG or PCI can be evaluated under three headings: before the procedure, during the procedure and after the procedure. Nurses, who have an important part in the healthcare team, have important responsibilities in reducing and preventing possible complications after CAG and PCI. The purpose of nursing practices is to prevent possible complications, to ensure early mobilization of the patient, to reduce pain and to increase quality of life.

Keywords: Coronary intervention, Peripheral vascular complication, Sandbag, Close pad, Cold application.

INVESTIGATION OF SPINAL POSTURE, DEPRESSION AND QUALITY OF LIFE OF FORMAL CAREGIVERS OF THE DISABLED CHILDREN AND ELDERLY INDIVIDUALS

ENGELLİ VE YAŞLI BİREYLERE FORMAL BAKIM VERENLERİN SPİNAL POSTÜR, DEPRESYON VE YAŞAM KALİTESİNİN İNCELENMESİ

Seda KARAMAN, MSc*

Ozlem ÇINAR OZDEMIR, PhD**

* Lecturer, Ondokuz Mayıs University, Faculty of Health Science, Department of Physiotherapy and Rehabilitation

ORCID ID: 0000-0002-4301-3261

**Asst. Prof., Izmir Demokrasi University, Faculty of Health Science, Department of Physiotherapy and Rehabilitation

ORCID ID: 0000-0002-9205-5652

ABSTRACT

The aim of the study was to investigate the relationship between spinal posture, depression and quality of life of the formal caregivers of children with disabilities and elderly individuals.

This study included 64 formal caregivers in disabled children and elderly care and rehabilitation centers in Bolu, Turkey. The socio-demographic characteristics of the individuals were recorded. Depression states of caregivers were evaluated with Beck Depression Inventory (BDI), Short Form-36 (SF-36) was used to asses quality of life. Spinal posture values of individuals were measured using Spinal Mouse® as 4 different parameters: thoracic curvature, lumbar curvature, 'hip' (sacral) angle, and trunk angle of inclination. The normal distribution of the data was examined with the Shapiro-Wilk test. Pearson correlation test was used to compare parametric data, and Spearman correlation test was used to compare non-parametric data. $p < 0.05$ was considered statistically significant.

It was observed that there was a significant correlation between the depression scores of individuals and sub-parameters of quality of life such as physical function (PF), role limitation due to emotional problems (RE), social function (SF), bodily pain (BP) and general health perception (GH) (r=.-,335 p=,007; r=-,299 p=,016; r=.-,290 p=,020; r=-,314 p=,012; r=-,419 p=,001). There was significant correlation between sacral angle measurement and depression score (r=,261 p=,037); lumbar curvature and sacral angle measurement and physical function sub-patameter (PF) (r=,280 p=,025; r=-,265 p=,034). Likewise, it was seen that there was significant correlation between the sacral angle measurement and bodily pain (BP) sub-parameter (r=-,250 p=,046).

In this study, it was observed that physical and pysicosocial problems and quality of life may be related in formal caregivers. Caregivers can be educated by taking care of their health from all aspects with physical and social support and solution suggestions, and these problems may be prevented.

Keywords: Disabled children, Eldery, Caregiver, Spinal postur, Depression, Quality of life

ÖZET

Çalışmanın amacı, engelli çocuklara ve yaşlı bireylere formal bakım veren personelin spinal postürü, depresyon düzeyleri ve yaşam kalitesi arasındaki ilişkiyi incelemekti.

Bu çalışmaya Türkiye'de Bolu ilinde bulunan engelli çocuk ve yaşlı bakım ve rehabilitasyon merkezlerinde engelli çocuklara bakım veren 64 bakım personeli dahil edildi. Bireylerin sosyo-demografik özellikleri kaydedildi. Bakım verenlerin depresyon durumları Beck Depresyon

Envanteri ile değerlendirildi, yaşam kalitesini değerlendirmek için Short Form-36 kullanıldı. Bireylerin spinal postür değerleri Spinal Mouse® kullanılarak 4 farklı parametre olarak ölçüldü: torakal açı, lumbar açı, "kalça" (sakral) açı ve inklinasyon. Verilerin normal dağılımı Shapiro-Wilk testi ile incelenmiştir. Parametrik verilerin karşılaştırılmasında Pearson korelasyon testi, parametrik olmayan verilerin karşılaştırılmasında Spearman korelasyon testi kullanıldı. $p < 0.05$ istatistiksel olarak anlamlı kabul edildi.

Bireylerin depresyon puanları ile fiziksel işlevsellik, emosyonel sorunlara bağlı rol kısıtlılığı, sosyal işlevsellik ve ağrı gibi yaşam kalitesi alt parametreleri arasında anlamlı bir ilişki olduğu görülmüştür (r = .-, 335 p =, 007; r = -, 299 p =, 016; r = .-, 290 p =, 020; r = -, 314 p =, 012; r = -, 419 p =, 001). Spinal postür ölçümlerinde sadece 'kalça' (sakral açı) ölçüm değerleri ile depresyon skoru arasında anlamlı bir korelasyon bulunurken (r =, 261 p =, 037); lumbar açı ve sakral açı ile yaşam kalitesi alt parametrelerinden fiziksel işlevsellik arasında anlamlı bir ilişki olduğu saptandı (r=,280 p=,025; r=-,265 p=,034). Benzer şekilde, sakral açı değeri ile yaşam kalitesi alt parametrelerinden ağrı puanı arasında anlamlı bir ilişki olduğu görüldü (r = -, 250 p =, 046).

Bu çalışmada formal bakım verenlerde fiziksel, psikososyal sorunlar ve yaşam kalitesinin ilişkili olabileceği görüldü. Bakım veren sağlığı her yönden ele alınarak, fiziksel ve sosyal destek ve çözüm önerileriyle bakıcılar eğitilebilir, bu sorunların önüne geçilebilir.

Anahtar Kelimeler: Engelli çocuk, Yaşlı, Bakım veren, Spinal postür, Depresyon, Yaşam kalitesi

ПРЕИМУЩЕСТВА И НЕДОСТАТКИ ДИСТАНЦИОННОГО ОБРАЗОВАНИЯ В УСЛОВИЯХ РАЗВИТИЯ ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ

Юрьева Юлия Александровна

воспитатель-методист

г. Харьков, Украина

АННОТАЦИЯ

В статье рассматриваются новые требования к современному образованию, совершенствованию образовательных наук, начиная от дошкольного образования, продолжая средней школой, заканчивая Высшим образованием. Сегодня, рассматривая новые мировые проблемы, остро встал вопрос о дистанционном образовании. На сегодняшний день, в силу пандемии, когда все общеобразовательные заведения работают дистанционно, информационные системы должны работать в полную силу. Современные условия кардинально меняют требования к специалистам и подготовке кадров. Именно сейчас необходимо понять незаменимость и развитие дистанционного образования, его продвижение и внедрение. Дистанционное образование дает возможность получить знания всем желающим, независимо от их места проживания. Основная задача- развить доступ к Интернет-сети.

Ключевые слова. Дистанционное образование, подготовка кадров, развитие современных информационных технологий.

ABSTRACT

The article considers new requirements for modern education, improvement of educational sciences, starting from preschool education, continuing with secondary school and ending with Higher Education. Today, considering new world problems, the issue of distance education has risen sharply. Today, due to the pandemic, when all educational institutions operate remotely, information systems should work at full capacity. Modern conditions radically change the requirements for specialists and training. It is now necessary to understand the need and development of distance education, its promotion and implementation. Distance education makes it possible to get knowledge for everyone, regardless of their place of residence. The main task is to develop access to the Internet network.

Keywords. Distance education, training of personnel, development of modern information technologies.

PRENATAL IMAGING DIAGNOSIS OF COARCTATION OF AORTA

Pușnei Alexandru

Department of Radiology and Medical Imaging, Testemitanu State University of Medicine and Pharmacy, Chisinău, Republic of Moldova

ABSTRACT

Background:

Prenatal diagnosis of coarctation of the aorta (CoA) might be quite difficult, giving the high amount of false-positive diagnoses. The purpose of this study was to compare the association between different ultrasound signs and their usefulness in correctly predicting CoA.

Methods:

PubMed, Google Scholar, Medline, Embase, and Cochrane databases were searched for studies from 2010 untill now. The included studies were evaluated with Newcastle-Ottawa scale. The data was analyzed with Excel.

Results:

From 119 articles identified, 4 (505 fetuses at risk for CoA) were included. Mean z scores of mitral valve diameter ($p<0.001$), aortic valve diameter ($p<0.001$) and aortic isthmus ($p=0.01$ in sagittal view, and $p<0.001$ in 3 vessels and trachea view) were lower, while mean z scores of tricuspid valve diameter ($p=0.01$) and pulmonary valve diameter ($p<0.001$) were higher in those with CoA than those without CoA. The right/left ventricular diameter and volume ratios ($p=0.02$ and $p=0.001$), tricuspid/mitral valve ($p=0.002$), main pulmonary artery/ascending aorta ($p=0,002$) and pulmonary/aortic valve diameter ratios were higher, while mitral/tricuspid valve diameter ($p<0.001$) and aortic isthmus/arterial duct diameter ($p<0.001$) ratios were lower in those with CoA. Ascending aorta to descending aorta angle < 20,31°, transverse aortic arch to descending aorta angle ≥96.15° and a left common carotid–to–left subclavian artery distance >4,5 mm were strongly associated ($P<0.0001$) with CoA. Coarctation shelf was also associated with CoA ($P<0.0001$). The highest accuracy in prenatal detecting of CoA was obtained when different ultrasound signs were integrated in multiparametric models.

Conclusion:

In order to improve the detection rate of CoA, i suggest using a prediction model that combines two or more ultrasound parameters.

Key words: coarctation of aorta, diagnosis, prenatal.

INVESTIGATION OF THE PRESENCE OF *Listeria monocytogenes* IN MINCED MEAT SAMPLES SOLD IN ISTANBUL PROVINCE*

Arda Alara ULUDAG

Doctorate Student, Institute of Graduate Studies in Science, Istanbul University, Department of Biology, 34116, Istanbul, Turkey

ORCID ID: 0000-0002-9896-3707

(Coreresponding Author)

Asst. Prof. Dr. Elif Ozlem ARSLAN

Asst. Prof., Istanbul Univertsiy, Faculty of Science, Department of Biology, Section of Fundamental and Industrial Microbiology, 34134, Istanbul, Turkey

ORCID ID: 0000-0003-1294-7376

Ayten KIMIRAN

Prof. Dr., Istanbul Univertsiy, Faculty of Science, Department of Biology, Section of Fundamental and Industrial Microbiology, 34134, Istanbul, Turkey

ORCID ID: 0000-0002- 0210-2751

ABSTRACT

Genus *Listeria* is microorganisms that are Gram-positive, non-spore-forming and facultative anaerobe, which can be found in soil, faeces, water, wastewater, plants, nutrients, human, animal and animal feed. Among the 21 different species of the *Listeria* genus, *Listeria monocytogenes* is the most common and listeriosis agent in humans. Meat and meat products have a very important role in foodborne infections. In this context, it is aimed to determine the presence of *L. monocytogenes* bacteria, which are dangerous for public health, in minced meat samples sold in Istanbul province.

In our study, the culture method of the United States Department of Agriculture-Food Safety and Inspection Service (USDA-FSIS) was used for the isolation of *L. monocytogenes* from the minced meat samples. Antibiotic resistance profiles of *L. monocytogenes* isolates were determined by disc diffusion method.

The bacteria identified as *L. monocytogenes* were examined for the presence of *iap* and *hlyA* gene regions by the polymerase chain reaction (PCR) method and *16S rRNA* sequence analysis was also performed. As a result of biochemical tests, it was determined that 21 of 186 suspect isolates obtained by traditional culture methods were *L. monocytogenes*. When antibiotic susceptibility tests of 21 strains identified as *L. monocytogenes* are evaluated, it was found to be resistant to Amoxicillin/Clavulanic acid (14.28%), penicillin (9.52%), cefaclor (9.52%), vancomycin (9.52%), ciprofloxacin (9.52%) and trimethoprim-sulfamethoxazole (9.52%) and susceptible to ampicillin (100%) and tetracycline (100%).

It was determined that only 16 of the strains identified as *L. monocytogenes* by biochemical techniques had *iap* and *hlyA* gene regions. The *16S rRNA* sequences obtained from the sequence analysis of 16 strains confirmed as *L. monocytogenes* were identified and sorted based on the GenBank database with the NCBI BLAST program.

In our study with minced meat offered for sale in Istanbul, although, the *L. monocytogenes* isolation rate (17%) and the incidence of antibiotic resistance of the isolated *L. monocytogenes* bacteria are low, as *L. monocytogenes* bacteria are not allowed in food, it was concluded that

minced meat may pose a public health risk.

Keywords: *Listeria monocytogenes*, *hlyA*, antibiotic susceptibility, PCR, minced meat

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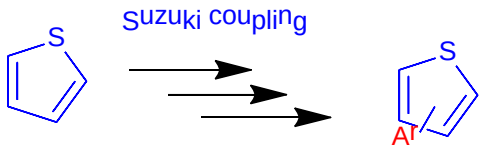
ARYLATION OF THIOPHENE BASED MOLECULES VIA SUZUKI MIYAURA REACTION IS VERSATILE TOOLS

Nasir Rasool[a]

[a] Department of Chemistry, Government College University Faisalabad, Faisalabad 38000, Pakistan

ABSTRACT

Thiophene moiety is found to be very potent in various biological activities Arylated thiophene types molecules can be used used as chemotherapeutic anti-inflammatory antibacterial antifungal antiviral antioxidant insecticidal anti-nociceptive anti-tubercula, anti-diabetic and anti-depressant agents. During the last three decades, carbon-carbon coupling for the synthesis of biaryls has replaced classical approaches such as Ullman coupling reactions. Suzuki-Miyaura reaction is one of the most important Pd-catalyzed cross-coupling reactions of aryl halides with organoboronic acids to synthesize biaryls Therefore arylation of thiophene based molecules by Suzuki reaction with using two different bases together with various electron rich and electron poor aryl boronic acids is an excellent methodology with good yield of the products. Arylation through Suzuki coupling methodology has advantages over other conventional methods. Further has been noted that, this methodology has good functional group tolerance and provide excellent yield.



Keywords: Thiophene Arylation, Suzuki reaction , Carbon – carbon bond formation, base, aryl boronic acids

INFLUENCE OF NANOVESICLE TYPE, NANOLIPOSOME AND NANONIOSOME, ON ANTIOXIDANT AND ANTIMICROBIAL ACTIVITIES OF ENCAPSULATED MYRTLE EXTRACT: A COMPARATIVE STUDY

Hayedeh Gorjian,[a] Nader Ghaffari Khaligh,[a,b] Zeynab Raftani Amiri,[a]

[a] Department of Food Science and Technology, Sari Agricultural Sciences and Natural Resources University, Sari, Iran

[b] Nanotechnology and Catalysis Research Center, Institute of Postgraduate Studies, University of Malaya, 50603 Kuala Lumpur Malaysia

ABSTRACT

In this study, the myrtle extract-encapsulated nanoliposomes of nanoliposomes were fabricated using the different ratios of Lecithin/sunflower and Span80/Tween 80, respectively, under cholesterol-free and organic solvent-free conditions. Contrary to much of the current literature , the GC-MS analysis of the hydroethanolic extract of myrtle revealed that the major compounds were 1,2,3-benzenetriol (40.62%) followed by 3,5,7-trihydroxy-2-isopropyl-chromen-4-one (28.37%). Moreover, our results approved that as-obtained nanovesicles were temperature and pH-sensitive. The thermal stability studies showed a significant improvement in the thermal stability of the myrtle extract after encapsulation. It is worth mentioning the N3 formulation was more thermal stable than the L3 formulation, however, its transition temperature (T_m) was lower. In order to study the effect of nanovesicle type on biological activity, the antioxidant and antimicrobial activities of myrtle extract-encapsulated nanoliposomes of nanoliposomes were investigated. Our results showed that the release rate of extract from nanovesicles plays a crucial role to control biologicals activities, whereas the myrtle extract-encapsulated nanoliposomes exhibited higher antioxidant activity compared with that nanoniosomes. The L1 formulation exhibited the lowest values of IC50 (24±1.98 µg/ml) and EC50 (166 mg/ml) for DPPH and FRAP analyses, respectively, due to the highest release rate. Also, The L1 formulation with the lowest MIC and highest Zone inhibition displayed the strongest antibacterial activities against *S. aureus*, *E.coli*, and *S. enteritidis*.

Keywords: Myrtle (*Myrtus communis L.*) extract, Encapsulation, Nanovesicle, Antioxidant, Antimicrobial activity

EFFECT OF PHYTOCHROMES ACTIVATION ON PHYSIOLOGICAL AND BIOCHEMICAL PROCESSES IN PLANTS WITH DIFFERENT TYPES OF DEVELOPMENT

Vasyyi Zhmurko, Olha Avksentieva, Yevheniia Batuieva

Department of physiology and biochemistry of plant and microorganisms

V. N. Karazin Kharkiv National University, Kharkiv, Ukraine

ABSTRACT

Activation of phytochromes stimulates considerable changes in physiological and biochemical processes in plants. But these effects of phytochrome activation on plants with different photoperiodic sensitivity, spring and winter crops, and early-maturing and late-maturing plants have not been studied. We investigated the effect of phytochrome activation by red light (RL 660 nm) on enzyme and phytohormones activity, carbohydrates and protein metabolism in wheat lines (*Triticum aestivum L.*) isogenic by VRN and PPD genes, and in soybean E lines (*Glycine max (L.) Merr.*), spring and winter rapes (*Brassica napus var. Oleifera*), early and late ripening tomato varieties (*Lycopersicon esculentum Mill.*). In conditions *in vitro* during the irradiation of the callus cultures of the VRN and PPD genes isolines of wheat with red light (RL), morphogenesis processes got intensified. Red light irradiation of callus cultures of soybean isogenic lines E genes *in vitro* enhanced morphogenetic processes in photoperiodically neutral (PPN) lines with recessive *e1e2* genes more significant than in short-day lines (SD) with dominant E1E2 genes. Under *in vitro* conditions in the callus culture of spring rape and early-ripe tomato varieties, RL exposure enhanced morphogenetic processes more significantly than in winter rape and late-ripe tomato varieties. The RL irradiation of plants of soybean lines isogenic by the E genes led to increase both in growth processes and in activity of GA and IAA, but at the same time it resulted in a decrease in ABA activity, as well as a decrease in the accumulation of carbohydrates in the leaves of the SD line; also it didn't change the intensity of these processes in the PPN line. Irradiation of RL of tomato seedlings caused an acceleration of the transition to the late-ripening plants flowering, without changing the timing of transition to flowering in early-ripening plants planted in open field. After irradiation with RL, the activity of sucrose phosphate synthase, sucrose synthase, invertase and amylase, as well as the accumulation of carbohydrates in leaves of tomato seedlings plants changed. So, the effects of phytochrome activation can be realized through genetic control of plants development.

Key words: phytochrome, RL (660 nm), plant development rates, physiological and biochemical processes

EVALUATION OF THE EFFECT OF A431 EPIDERMIS SKIN CANCER CELL STIFFNESS USING ATOMIC FORCE MICROSCOPY

M. Zakeri[a], J. Faraji[a*], E. Baradari[a]

[a] Department of Mechanical Engineering, University of Tabriz, Tabriz, 51666 14766, Iran

ABSTRACT

Cancer is one of the most complex diseases of the present century and its study has faced many challenges. On the other hand, measuring cell stiffness due to changes in the cytoskeletal structure of cancer cells can be used to early diagnosis. One way to study the mechanical properties of the cell surface is to use atomic force microscopy (AFM). Various studies have examined cancer from the perspective of biomechanical component analysis, which has either experimentally measured the Young's modulus for a cancerous cell or used the closest reality model to extract the Young's modulus. In this study, experimental studies are used to get behavior of force-indentation curve. For this purpose, A431 cancer cells (epidermis skin cancer) were used. Then we tried to make appropriate quantitative models on the data and specifically calculate the Young's modulus. Two models, Hertz and Johnson, Kendall-Roberts (JKR), were used to get the Young's modulus. Examining the results obtained from the two models. It is clear that the Young's modulus obtained from the JKR model is much lower than the Hertz model due to the use of adhesion forces in the JKR model. These results can be well used in the early detection of cancer.

IN VITRO INHIBITION OF *HERPES SIMPLEX* VIRUS TYPE -1 REPLICATION BY *LACTOBACILLUS* POSTMETABOLITES

Neli Vilhelmova-Ilieva[1*], Georgi Atanasov[2], Lora Simeonova[1], Lili Dobreva[1], Kapka Mancheva[3], Madlena Trepechova[1], Kristina Kostova[1], Svetla Danova[1]

[1] The Stephan Angeloff Institute of Microbiology, Bulgarian Academy of Sciences Sofia 1113, Bulgaria, 26 Acad. Georgi Bonchev str

[2] Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences,; Sofia 1113, Bulgaria, 25 Acad. Georgi Bonchev Str.;

[3] Institute of Biophysics and Biomedical Engineering, Bulgarian Academy of Sciences,; Sofia 1113, Bulgaria, 23 Acad. Georgi Bonchev Str.;

ABSTRACT

Herpes simplex virus (HSV) is a coated, double-stranded DNA virus from the *Herpesviridae* family. HSV-1 causes major infections of the mouth, throat, face, eyes, central nervous system (encephalitis), as well as infections in the anal-genital area. Of a great concern is Neonatal herpes simplex, usually caused by vertical transmission of HSV to the new-born.

A chemotherapy based on the use of nucleoside analogues has been developed for herpesvirus infections. The first selective HSV inhibitor most widely used was the guanosine analogue acyclovir (ACV). A disadvantage of such anti-HSV agents is the relatively rapid formation of resistant mutants, which leads to failure of therapy.

In recent years, inhibitors of herpes replication with a different mechanism of action than nucleoside analogues have been searched. Several studies have been made with natural products, that have lower cytotoxicity and low rate of formation of resistant mutants. A large number of probiotic lactic acid bacteria (LAB) and their metabolites, which have revealed numerous biological activities and benefits for human health, are also receiving widespread attention. However, their activity against a number of infectious diseases is a strain -specific. With this aim, 11 post-metabolites, obtained during fermentation of 6 pre-selected *Lactobacillus* probiotic strains on HSV-1 replication were evaluated. We investigated two vaginal strains (*Limosilactobacillus fermentum* and *Ligilactobacillus salivarius*) and four *Lactiplantibacillus plantarum* isolated from Bulgarian fermented dairy products.

The highest selective index (79.75) was calculated *for L. plantarum* cell-free supernatants (CFS), followed by a high molecular weight fraction of cell fragments of *L. fermentum* culture (S6) (SI = 34.63), post-metabolite of late exponential *L. plantarum* (S4) (SI = 28.26) and neutralized cell-free supernatant of *L. fermentum* (S9) = 28.11). These results are promising, due to the low toxicity of tested postmetabolites to eukaryotic cells. However, further characterization of active compounds is needed and is still in progress.

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ANTITUMOR POTENTIAL OF MILTEFOSINE-LOADED NANOSTRUCTURED LIPID CARRIERS FOR THE TREATMENT OF BREAST CANCER

Fakhar ud Din[1], Zakir Ali[1], Humzah Jamshaid[1], Hadeeqa Nazish[1], Husna Khalid[1], Basalat Imran[1], Adnan Anjum[1] Ijaz ul Haq[1]

[1]Nanomedicine Research Group, Department of Pharmacy, Faculty of Biological Sciences, Quaid-i-Azam University, Islamabad 45320, Pakistan

ABSTRACT

Background: The purpose of this study was to investigate the suitability of nanostructured lipid carriers (NLCs) loaded with miltefosine (HePC) as an anticancer drug for the treatment of breast cancer.

Methods: HePC-NLCs were prepared using a microemulsion technique and then evaluated for particle size, polydispersity index (PDI), incorporation efficiency, in vitro release of entrapped drug, and hemolytic potential. Furthermore, pharmacokinetic, biodistribution, and liver toxicity analyses were performed in Sprague Dawley rats, and antitumor efficacy was evaluated in Michigan Cancer Foundation-7 (MCF-7) and squamous cell carcinoma-7 (SCC-7) cells in vitro and in tumour-bearing BALB/c mice in vivo. Advanced analyses including survival rate, immunohistopathology, and terminal deoxynucleotidyl transferase dUTP nick end labelling (TUNEL) assays were performed to evaluate apoptosis in vivo.

Results: The average particle size of the HePC-NLCs was 143 ± 16 nm, with a narrow PDI (0.104 ± 0.002), and the incorporation efficiency was found to be 91 ± 7%. The NLCs released HePC in a sustained manner, and this release was significantly lower than that of free drug. The in vitro hemolytic assay demonstrated a significantly reduced hemolytic potential (~9%) of the NLCs compared to that of the test formulations. The HePC-NLCs demonstrated enhanced pharmacokinetic behavior over free drug, including extended blood circulation and an abridged clearance rate in rats. Furthermore, the HePC-NLCs exhibited higher cytotoxicity than the free drug in MCF-7 and SCC-7 cells. Moreover, the HePC-NLCs showed significantly enhanced ($P < 0.005$) antitumor activity compared to that of the control and free drug-treated mouse groups. Tumour cell apoptosis was also confirmed, indicating the antitumor potential of the HePC-NLCs.

Conclusions: These findings demonstrate the ability of NLCs as a drug delivery system for enhanced pharmacokinetic, antitumor, and apoptotic effects, most importantly when loaded with HePC.

Keywords: Breast cancer; Miltefosine; Nano lipid carriers; Sustained release; Bioavailability; Pharmacokinetics; Toxicity; Antitumor efficacy; Apoptosis.

DEVELOPMENT OF METHODS FOR THE PREPARATION OF HYDROGELS WITH A COMPLEX OF SULFADIMEDINE INCLUSION WITH B-CYCLODEXTRIN

G.U. Begimova[1,2], K.A. Kim[1], D.A. Berillo[1]

[1]S.D. Asfendiyarov Kazakh National Medical University, Tole bi av. 94, Almaty, Kazakhstan;

[2]Kazakhstan Engineering-Technological University, al-Farabi av. 89/21, Almaty, Kazakhstan;

ABSTRACT

In the pharmaceutical industry, the complexing method is widely used in the production of new medicine forms. The stability of the resulting complexes of the biologically active substance and the inert carrier depends not only on the chemical properties of the active component, but also on the properties of the matrix itself. New hydrogels have been synthesized that are suitable as a carrier for the controlled release of therapeutic substrates. This study confirms a relatively inexpensive, environmentally friendly, non-toxic, and effective method for modifying alginate polymers for pH-controlled delivery of therapeutic molecules. Such criteria as harmlessness, hypo-allergenicity, accessibility and biodegradability are important when choosing a matrix substance. All these requirements are met by cyclodextrins (CD). They are unique natural macrocycles of carbohydrate nature with a cylindrical cavity. The transdermal route of drug delivery is quite complex, but reliable for local and systemic action. The advantage of the method is to optimize the concentration of the active substance; in the ease of stopping therapy by simply removing it from the surface of the skin.

In the laboratory of Pharmaceutical and Toxicological chemistry, Pharmacognosy and Botany, the physicochemical, mechanical and antibacterial properties of polymer materials based on alginate and cyclodextrin were studied. The idea of creating polymer films based on polysaccharide hydrogels with embedded cyclodextrin molecules gives a more favorable interaction effect. First, polysaccharides-natural compounds that belong to renewable sources-are readily available. Secondly, hydrogels retain water, so it is possible to retain exudate from wounds. Cyclodextrins increase the solubility of the drug, due to the formation of an inclusion complex. As a" guest " in the complex, sulfadimidine and lidocaine were considered as analgesic substances. The films will be effective in the treatment of knee, hip joints and open wounds, depending on the drug included.

Keywords: alginate; hydrogel; pH-dependence; cyclodextrin, release; bioavailability.

KATARAKT CERRAHİSİNDE PROFİLAKTİK FARKLI GRUP ANTİBİYOTİKLERİN KULLANIMININ DEĞERLENDİRİLMESİ

EVALUATION OF THE USE OF DIFFERENT GROUPS OF PROFILACTIC ANTIBIOTICS IN CATARACT SURGERY

Op. Dr. Nagehan Can

Torbalı Devlet Hastanesi, İzmir, Türkiye

ORCID ID:0000-0002-1423-5519

ÖZET

Amaç: Katarakt cerrahisi yapılan hastalarda profilaktik intrakameral %0,5 moksifloksasin solüsyonunun ve intrakameral sefuroksim aksetil kullanımının güvenliğinin belirlenmesi. Gereç ve Yöntem: Ocak 2018-2020 yılları arasında katarakt ameliyatı olan ve intrakamaral moksifloksasin veya intrakameral sefuroksim verilen vakalarda preoperatif ve postoperatif 1.aylık sonuçlar incelendi. Ön kamara reaksiyonu, en iyi düzeltilmiş görme keskinliği (EDGK) ve kornea kalınlıkları ölçüldü. Postoperatif 1. Gün 1. Hafta 2. Hafta ve 1. Ayda ölçümler alındı. Hastalara standart göz muayenesi yapıldı. Fakoemülsifikasyon cerrahisinin sonunda 99 hastaya 0,1 mL intrakameral %0,5 moksifloksasin solüsyonu ve 105 hastaya 0,1 mL 1,0 mg/mL intrakameral sefuroksim aksetil verildi. Ameliyat sonrası ölçümler yapıldı. Preoperatif elde edilen veriler postoperatif verilerle karşılaştırıldı. İstatistiksel analiz için paired-t testi kullanıldı. P değeri 0,05'ten küçük olanlar istatistiksel olarak anlamlı kabul edildi. Bulgular: Çalışmaya 204 göz dahil edildi. Ortalama yaş 78,5 ± 10, 15 (59-85 yaş) idi. En iyi düzeltilmiş görme keskinliği (EDGK) 0,5± 0,15 idi. Postoperatif ilk gün bütün gözlerde ön kamarada 0 ile +2 arasında hücre ve reaksiyon mevcuttu. İntrakamaral sefuroksim aksetil yapılan 2 hastada, moxifloksasin yapılan 1 hastada toksik anterior segment sendromu (TASS) gelişti. Hiçbir hastada endoftalmi gelişmedi. Sefuroksim grubunda birinci ayda ortalama santral korneal kalınlıkta (SKK) artış 10,50 µm idi ve istatistiksel olarak anlamlı bulunmadı. Moxifloksasin grubunda ortalama SKK artış 18,12 µm idi ve istatistiksel olarak anlamlı değildi. Sonuç: İntrakameral %0,5 mg/m moksifloksasin ve 1mg/0,1ml sefuroksim aksetil katarakt cerrahisi yapılan kişilerde güvenli kullanılabilir. Görme keskinliği, korneal kalınlık, ön kamara reaksiyonu açısından iki grup arasında anlamlı bir fark izlenilmedi. Katarakt ameliyatlarında cerrahi sırasında uygulanan intrakamaral antibiyotik enjeksiyonları güvenlidir.

Anahtar kelimeler: katarakt, antibiyotik, profilaxi, endoftalmi

ABSTRACT

Purpose: To determine the safety of prophylactic intracameral 0.5% moxifloxacin ophthalmic solution and intracameral cefuroxime axetil use in patients undergoing cataract surgery. Materials and Methods: Anterior chamber reaction, best corrected visual acuity (BCVA) and corneal thickness were measured before and at the end of the first month in patients who had cataract surgery between January 2018 and 2020 and were given intracameral moxifloxacin or intracameral cefuroxime. Standard eye examination was performed on the patients. At the end of phacoemulsification surgery, 99 patients received 0.1 mL intracameral 0.5% moxifloxacin ophthalmic solution and 105 patients received 0.1 mL 1.0 mg / mL intracameral cefuroxime axetil. Postoperative measurements were made and the results of both groups were compared. Preoperative data were compared with postoperative data. Paired-t test was used for statistical analysis. P values less than 0.05 were considered statistically significant. Results: 204 eyes were included in the study. The mean age was 78.5 ± 10.15 years (59-85 years). Best corrected visual acuity (BCVA) was 0.5 ± 0.15. On the first postoperative day, all eyes had a cell and flare

reaction between 0 and +2 in the anterior chamber. Toxic anterior segment syndrome (TASS) developed in 2 patients treated with intracameral cefuroxime axetil and 1 patient treated with moxifloxacin. Endophthalmitis did not occur in any patient. The mean central corneal thickness (CCT) increase in the first month in the cefuroxime group was 10.50 µm and was not statistically significant. The mean increase in CCT in the moxifloxacin group was 18.12 µm and was not statistically significant. Conclusion: Intracameral 0.5% mg / m moxifloxacin and 1mg / 0.1ml cefuroxime axetil can be used safely in patients undergoing cataract surgery. There was no significant difference between the two groups in terms of visual acuity, corneal thickness, and anterior chamber reaction.During the cataract surgery using profilactic antibiotic enjection to the anterior chamber is safety.

Key Words: cataract, prolilaxi, antibiotic,endophthalmia

KRONİK LENFOSİTİK LÖSEMİ İLE İLİŞKİLİ PATOJENİK VARYANTLARIN TESPİTİ

DETECTION OF PATHOGENIC VARIANTS ASSOCIATED WITH CHRONIC LYMPHOCYTIC LEUKEMIA

Gözde ÖZTAN

Öğr. Gör. Dr, İstanbul Tıp Fakültesi Tıbbi Biyoloji AD

(Sorumlu Yazar)

ÖZET

Kronik lenfositik lösemi (KLL) batı ülkelerinde görülen ve tipik olarak yaşlı hastalarda ortaya çıkan klinik seyir oldukça değişken en yaygın lösemi türüdür. Lösemik transformasyon, klonal B hücrelerinin apoptozunu bozan spesifik genomik değişikliklerle başlatılmaktadır. Genetik parametreler, hastalığın hızlı ilerlemesi, tedaviye direnç ve kısa hayatta kalma riski taşıyan KLL hastalarının belirlenmesinde prognostik değerleri göstermektedir. KLL gelişimi için önemli olan spesifik SNP (tek nükleotid polimorfizm)'lerin tanımlanmasıyla tüm KLL hastaları için hastalık patogenezinin ve tedavi seçeneklerinin daha iyi anlaşılması mümkün hale gelebilecektir.

Çalışmamızda, Malacards İnsan Hastalık Veritabanı üzerinden KLL hastalığı ile ilişkili genlerin ve hastalığa yol açabileceği düşünülen patojenik varyasyonların NCBI ClinVar aracılığıyla tespiti amaçlanmıştır.

NRAS genindeki, rs11554290 [(NM_002524.5(NRAS):c.182A>C (p.Gln61Pro)] missense patojenik varyant, TP53 genindeki, rs121913343 [(NM_000546.5(TP53):c.817C>A (p.Arg273Ser)] missense patojenik varyant, HRAS genindeki, rs28933406 [(NM_005343.4(HRAS):c.181C>G (p.Gln61Glu)] missense patojenik varyant ve BRAF genindeki, rs397516896 [(NM_001374258.1(BRAF):c.1900G>A (p.Asp634Asn)] missense patojenik varyantları belirlenmiştir. Ardından PharmGKB veritabanı kullanarak KLL'ye yönelik varyant ve ilaç fenotipi arasındaki bağlantılar ortaya konulmuştur. Buna göre, rs1801131 [(NM_005957.4(MTHFR):c.1286A>C (p.Glu429Ala)] patojenik olduğu düşünülen missense varyant için Allel G'nin, genotip TT'ye kıyasla KLL hastalarında progresyonsuz (ilerlemesiz) sağkalımın artmasıyla ilişkili olduğu tespit edilmiştir. rs1801133[(NM_005957.5(MTHFR):c.665C>T (p.Ala222Val)] ilaca yanıt gösteren missense varyantta genotip GG, genotip AA+AG'ye kıyasla KLL'de antineoplastik ajanlarla tedavi edildiğinde progresyonsuz sağkalımın artmasıyla ilişkili bulunmuştur. rs1801157 (CXCL12 3'UTR) varyantta ise genotip CT + TT, genotip CC'ye kıyasla KLL hastalarında alemtuzumab, klorambusil, siklofosfamid, fludarabin, prednizon, rituksimab veya vinkristine yanıtta azalma ile ilişkilidir.

Sonuç olarak, KLL'de görülen genetik varyasyonların hastalığın seyri, patogenezi ve tedaviye yanıtta etkili olduğu gösterilmiştir. KLL'nin genetik temelinin daha iyi anlaşılması, hedefe yönelik tedavi seçeneklerinin belirlenmesinde önem taşımaktadır.

Anahtar Kelimeler: Kronik lenfositik lösemi, patogenez, varyant, tek nükleotid polimorfizm, klonal B hücreleri

ABSTRACT

Chronic lymphocytic leukemia (CLL) is the most common type of leukemia with a highly variable clinical course seen in Western countries and typically occurring in elderly patients. Leukemic transformation is initiated by specific genomic changes that disrupt the apoptosis of clonal B cells. Genetic parameters show prognostic values in identifying patients with CLL at

risk of rapid progression, resistance to treatment, and short survival. By identifying specific SNPs (single nucleotide polymorphisms) that are important for the development of CLL, it will be possible to better understand the disease pathogenesis and treatment options for all CLL patients.

In our study, we aimed to detect genes associated with CLL disease and pathogenic variations that are thought to cause the disease through the NCBI ClinVar through the Malacards Human Disease Database.

rs11554290 [(NM_002524.5 (NRAS): c.182A> C (p.Gln61Pro)] missense pathogenic variant in the NRAS gene, rs121913343 [(NM_000546.5 (TP53): c.817C> A (p.Arg273Ser)] missense pathogenic variant in the TP53 gene, rs28933406 [(NM_005343.4 (HRAS): c.181C> G (p.Gln61Glu)] missense pathogenic variant in the HRAS gene and rs397516896 [(NM_001374258.1 (BRAF): c.1900G> A (p.Asp634Asn)] missense pathogenic variants in the BRAF gene were identified. Then, using the PharmGKB database, the links between the variant for CLL and the drug phenotype were revealed. Accordingly, it was found that Allele G for the rs1801131 [(NM_005957.4(MTHFR):c.1286A>C (p.Glu429Ala)] missense variant considered to be pathogenic was associated with increased progression-free survival in CLL patients compared to genotype TT. In the rs1801133 [(NM_005957.5 (MTHFR): c.665C> T (p.Ala222Val)] drug-responsive missense variant genotype GG was associated with increased progression-free survival when treated with antineoplastic agents in CLL compared to genotype AA + AG. In the rs1801157 (CXCL12 3'UTR) variant, genotype CT + TT is associated with reduced response to alemtuzumab, chlorambucil, cyclophosphamide, fludarabine, prednisone, rituximab or vincristine in CLL patients compared to genotype CC.

As a result, it has been shown that genetic variations seen in CLL are effective in the course of the disease, pathogenesis and response to treatment. A better understanding of the genetic basis of CLL is important in determining targeted treatment options.

Keywords: Chronic lymphocytic leukemia, pathogenesis, variant, single nucleotide polymorphism, clonal B cells

INCLUSION COMPLEXES WITH B-CYCLODEXTRIN AND THEIR USE FOR MEDICAL PURPOSES

K.A. Kim[1], G.U. Begimova[1,2]

[1]S.D. Asfendiyarov Kazakh National Medical University, Tole bi av. 94;

[2]Kazakhstan Engineering-Technological University, al-Farabi av. 89/21, Almaty, Kazakhstan;

ABSTRACT

Cyclodextrins were first discovered by Villas in 1891. The scientist discovered special dextrins in the decomposition products of starch, which were stable to acid hydrolysis - cellulose. F. Shardinger in 1903 isolated two crystalline compounds from starch products, investigated their properties and named them α-dextrin and β-dextrin. Cyclodextrins are molecular vessels, compounds with the unique nature of nanostructures that have a hydrophobic cavity on the inside and hydrophilic on the outside. These can hold non-ionized and non-polar molecules inside the cavity as a "guest". With the help of this hydrophilic outer surface of cyclodextrin - the "guest" molecules can dissolve in water thanks to the hydrophilic outer surface of the cyclodextrin - the "host" molecule. That is why the main interest in the study of these compounds is tied to their ability to create complexes in the form of "host-guest" with various organic and inorganic compounds.

In our work, we used the coalescence method to obtain a host-guest complex. Under laboratory conditions, when grinding cyclodextrin and a medicinal substance in a mortar with minimal addition of water, an inclusion complex can be obtained, which we did. Stirring was continued until the mixture in the mortar was smooth. After complexation, the mixture was dried without treatment, sieved, and stored in a sealed container for further research. To establish that the drug (sulfadimidine) was incorporated into the cavity of the cyclodextrin torus, studies were carried out using UV spectroscopy and IR spectroscopy.

The study of the process of creating an inclusion complex with β-cyclodextrin and its introduction into a polymer dosage form were carried out successfully. When synthesizing a hydrogel material (without and with finding a complex inclusion in the form of β-cyclodextrin and a drug), regularities in the preparation technology and additional nuances were revealed.

VENA SEFANA MAGNA ABLASYONUNDA RADYOFREKANS İLE CYANOACRYLAT EMBOLİZASYONU TEDAVİLERİNİN KARŞILAŞTIRILMASI

COMPARISON OF RADIOFREQUENCY AND CYANOACRYLATE EMBOLIZATION TREATMENTS IN VENA SAFENA MAGNA ABLATION

Zafer Cengiz ER

Dr. Öğr. Üyesi, Bozok Üniversitesi Tıp Fakültesi Kalp Damar Cerrahisi A.D.

(Sorumlu yazar)

Sameh ALAGHA

Dr. Öğr. Üyesi, Bozok Üniversitesi Tıp Fakültesi Kalp Damar Cerrahisi A.D.

ÖZET

Amaç

Kronik venöz yetmezliği (KVY) sık görülen, iş gücü ve yaşam kalitesinde kayıplara neden olan bir hastalıktır. Tedavisinde vena sefana magna (VSM) ablasyonu için kullanılan Radyofrekans ve cyanoacrylat embolizasyon tekniklerinin karşılaştırılarak değerlendirilmesi amaçlanmıştır.

Materyal ve Metot

Bozok Üniversitesi Tıp Fakültesi Kalp ve Damar Cerrahisi Kliniği'ne Kasım 2015-Ocak 2020 tarihleri arasında başvuran venöz yetmezliği olan, semptomatik 220 hasta çalışmaya dahil edildi. Hastalar 1.grup Radyofrekans, 2. grup cyanoacrylat embolizasyon uygulaması yapılanlar olarak gruplandırıldı. Ameliyat öncesi dönemde venöz alt ekstremite renkli Doppler ultrasonografi (RDUS) ile reflü varlığı ve VSM çapları açısından hastaların tamamı değerlendirildi. RDUS ile VSM çapı 5,5 mm üzeri ve safeno-femoral reflü süresi 0,5 sn. den daha uzun olan, VMS'si tortiyoze olmayan hastalar çalışmaya dâhil edildi. Demografik açından benzer olan iki grupta 110 vaka çalışmaya dâhil edildi. Hastalar işlem sonrası birinci haftada poliklinik kontrolüne ve birinci ve altıncı aylarda RDUS kontrolüne çağırıldı.

Bulgular

İşlem sonrası ilk ayda yapılan RDUS kontrol tetkikinde VSM de RFA grubunda 110 hastadan 108 vakada (%98,18) obliterasyon sağlanmıştı. CAE grubunda 110 vakanın tamamında VSM oblitere oluşmuştu. Altıncı ayda ise RFA grubunda 107 vakada (%97,27) ve CAE grubunda 109(%99,09) VSM obliterasyonu mevcuttu. RFA grubunda işlem sonrası ilk bir ay içerisinde %8,18 ekimoz , % 0,90 selüllit, % 1,81 tromboflebit görüldü. CAE grubunda komplikasyonlar %10,90 ekimoz, % 2,72selüllit, % 0,90 tromboflebit oranında saptandı. İşlem süresi RFA grubunda ortalama 32,14 dk. olurken, CAE grubunda 15,32 dk. olarak geçti. İşlem öncesi sorulan sekiz semptomun hastalara sorularak kaydedildi. Altı ay sonraki kontrollerde tekrar sorularak farklar karşılaştırıldı. Semptomlarda değişim sonuçları benzer olup ciddi fark saptanmadı.

Sonuçlar

Minimal invaziv KVY tedavileri olan RAF ve CAE teknikleri uygun hastalarda klasik cerrahi kadar etkilidirler. Aralarında etkinlik ve komplikasyonlar olarak ciddi fark olmamakla beraber kısa işlem süresi avantajı ile CAE öne çıkmaktadır.

Anahtar Kelimeler: Radyofrekans ablasyo**,** n- butyl cyanoacrylat, Embolizasyon, Venöz yetmezlik

ABSTRACT

Goal: Chronic venous insufficiency (CVI) is a common disease that causes labor and quality of life losses. It was aimed to compare and evaluate the radiofrequency and cyanoacrylate embolization techniques used for vena cephaana magna (VSM) ablation in its treatment**.**

Materials and Methods: 220 symptomatic patients with venous insufficiency who applied to the Department of Cardiovascular Surgery of Bozok University Faculty of Medicine between November 2015 and January 2020 were included in the study. Patients were grouped as 1. group Radiofrequency and 2. group as cyanoacrylate embolization. In the preoperative period, all patients were evaluated in terms of the presence of reflux and VSM diameters with venous lower extremity color Doppler ultrasonography (CDUS). With RDUS, the VSM diameter is over 5.5 mm and the sapheno-femoral reflux time is 0.5 seconds. Patients who were longer than those whose VMS was not tortuous were included in the study. 110 cases in two demographically similar groups were included in the study. Patients were called for outpatient clinic control in the first week and CDUS control in the first and sixth months after the procedure.

Results: In the CDUS control examination performed in the first month after the procedure, obliteration was achieved in 108 cases (98.18%) out of 110 patients in the RFA group in VSM. VSM obliterated in all 110 cases in the CAE group. At the sixth month, VSM obliteration was present in 107 cases (97.27%) in the RFA group and 109 (99.09%) in the CAE group. In the RFA group, 8.18% ecchymosis, 0.90% cellulitis and 1.81% thrombophlebitis were seen in the first month after the procedure. In the CAE group, complications were detected at a rate of 10.90% ecchymosis, 2.72% cellulitis, and 0.90% thrombophlebitis. The average procedure time in the RFA group is 32.14 minutes. while in the CAE group, 15.32 min. passed as. Eight symptoms asked before the procedure were asked to the patients and recorded. At the controls six months later, the differences were compared by asking again. The change results in symptoms were similar, and no serious difference was found.

Results: RAF and CAE techniques, which are minimally invasive CVI treatments, are as effective as classical surgery in eligible patients. Although there is no significant difference between them in terms of efficiency and complications, CAE stands out with its short procedure time advantage.

Keywords: Radiofrequency ablation, n-butyl cyanoacrylate, Embolization, Venous insufficiency

VENÖZ YETMEZLİĞİ TEDAVİSİNDE ENDO VENÖZ LAZER ABLASYON; VAKA SERİSİ

ENDO VENOUS LASER ABLATION IN THE TREATMENT OF VENOUS INSUFFICIENCY; CASE SERIES

Zafer Cengiz ER

Dr. Öğr. Üyesi, Bozok Üniversitesi Tıp Fakültesi Kalp Damar Cerrahisi A.D.

(Sorumlu yazar)

Sameh ALAGHA

Dr. Öğr. Üyesi, Bozok Üniversitesi Tıp Fakültesi Kalp Damar Cerrahisi A.D.

ÖZET

Amaç: Kronik venöz yetmezlik nedenli vena saphena magna'da (VSM) Endo Venoz Lazer Ablasyon tedavisi uyguladığımız hastaların sonuçlarının incelenmesidir.

Materyal ve metot: Bozok Üniversitesi Tıp Fakültesi Araştırma Hastanesinde 2016 ile 2020 tarihleri arasında kronik venöz yetmezlik nedenli (KVY) safen ven lazer ablasyonu uyguladığımız hastalar çalışmaya dahil edildi. Renkli dopler ultrasonografi (RDUS) ile VSM çapı 5,5 mm üzeri ve safeno femoral reflü süresi 0,5 sn. den daha uzun olan 126 hastada 137 ekstremiteye Endo Venöz Lazer Ablasyon (EVLA) uyguladık. Hastaların işlem sonrası onuncu gün poliklinik muayenesi birinci ve altıncı aylarda RDUS tetkikiyle kontrolleri yapılarak değerlendirildi. Preop dönemde hastaların semptomları soruldu. Operasyon sonrası altıncı aydaki kontrollerinde semptomları tekrar sorularak, oluşan değişim için; iyileşme, hafif iyi, aynı ve artma tarzında bildirilen anket uygulandı. Uygulanan tedavini hastaların şikâyetlerindeki değişim ve dolayısıyla memnuniyetleri değerlendirilmeye çalışıldı.

Bulgular: Yaş ortalaması 39,4±11,6 ve ortalama safen çapı 7,85±2,6 idi. İşlem süresi ortalama 35±8,6 dk. ve işlem sonrası ortalama taburculuk zamanı 89,17±12 dk. oldu. Altı aylık takipte tam oklüzyon oranımız %96,36 olarak sonuçlandı. Postop birinci ay VSM'nın RDUS kontrolünde 2 hastada (%1,45) parsiyel rekanilizasyon, altı aylık sonraki RDUS kontrolünde 5 vakada (%3,64) VSM' da parsiyel rekanalizasyon oluştu. Vakalarımızda görülen komplikasyonlar 46 vakada ekimoz %33,57 ve 17 vakada %12,40 hematomdu. Derin ven trombozu ve pulmoner emboli gelişen hastamız olmadı. Dermatolojik hassasiyeti olan bir hastamızda işlem sonrası hafif cilt yanığı, 7 hastada (%5,10) selüllit, 10 hastada(%7,29) flebit gelişip medikal olarak tedavisi sağlandı olup medikal tedavi ile geçti. Altı ay sonraki kontrolde, en fazla iyileşmede %63,50 ile 87 vakada ağrı hissinde tamamen geçme olarak tarif ederlerken, onu sırasıyla %59,09 ile kramp, %42,10 karıncalanma, %40,21 şişlik takip etti

Sonuç: Endovenöz tekniklerin gelişmesi ile EVLA yüksek oklüzyon düşük komplikasyon oranları, kısa işlem ve taburculuk süresiyle, konvansiyonel cerrahiye önemli alternatif olmuştur. KVY tedavisinde hasta memnuniyetini sağlamakta, gelişen teknolojiye rağmen sahada olan kısıtlılıkların ve komplikasyonların azaltılmasında uygun teknikle hasta seçimi, hasta eğitimi hâlihazırda önemini korumaktadır.

Anahtar Sözcükler: Endo Venöz Lazer Ablasyon, Venöz Yetmezlik

ABSTRACT

Purpose: To examine the results of patients who have been treated with Endo Venous Laser Ablation in the vena saphena magna (VSM) due to chronic venous insufficiency.

Materials and methods: Patients who underwent saphenous vein laser ablation due to chronic venous insufficiency (CVI) at Bozok University Medical Faculty Research Hospital between 2016 and 2020 were included in the study. With color doppler ultrasonography (RDUS), the VSM diameter is above 5.5 mm and the safeno femoral reflux time is 0.5 seconds. We applied Endo Venous Laser Ablation (EVLA) to 137 extremities in 126 patients who were taller than those. Patients were evaluated by outpatient clinic examination on the tenth day after the procedure and controls with CDUS examination in the first and sixth months. The symptoms of the patients were asked in the preoperative period. In the sixth month after the operation, the symptoms were asked again and for the change that occurred; The questionnaire, which reported improvement, slightly good, the same and increasing style, was applied. An attempt was made to evaluate the treatment applied, the change in the patients' complaints and therefore their satisfaction.

Results: The mean age was 39.4 ± 11.6 and the mean saphenous diameter was 7.85 ± 2.6. The average procedure time is 35 ± 8.6 minutes. and the mean discharge time after the procedure 89.17 ± 12 min. happened. Our complete occlusion rate was 96.36% in the six-month follow-up. Partial recanalization occurred in 2 patients (1.45%) in the postoperative first month VSM control, and in 5 cases (3.64%), partial recanalization occurred in the VSM in 6 months later. The complications seen in our cases were ecchymosis 33.57% in 46 cases and hematoma 12.40% in 17 cases. No patient developed deep vein thrombosis or pulmonary embolism. In one of our patients with dermatological sensitivity, a mild skin burn, cellulite in 7 patients (5.10%), phlebitis in 10 patients (7.29%) developed after the procedure, and medical treatment was provided. At the control six months later, 63.50% of the cases described the pain as total relief in 87 cases, followed by cramping with 59.09%, tingling 42.10% and swelling 40.21%, respectively.

Conclusion: With the development of endovenous techniques, EVLA has become an important alternative to conventional surgery, with high occlusion rates, low complication rates, short procedure and discharge time. Ensuring patient satisfaction in the treatment of CVI, patient selection with appropriate technique and patient education are still important in reducing the limitations and complications in the field despite the developing technology.

Keywords: Endo Venous Laser Ablation, Venous Insufficiency

CLINICAL AND PHARMACOLOGICAL ANALYSIS OF TREATMENT IN THE ELDERLY AND LONG-LIVED IN A HOSPITAL

Nurgazieva Guldana Yermychamedovna

S.D.Asfendiyarov KazNMU NP JSC

2nd year resident of the Department of Clinical Pharmacology,

Almaty city, Republic of Kazakhstan

Scientific supervisors:

Curator: Assistant Professor of the Department of Clinical Pharmacology,

doctor of the highest category **Erkinbekova Gulnara Bekbosynovna,**

Almaty, Republic of Kazakhstan

Candidate of Medical Sciences, Associate Professor of the Department of Clinical Pharmacology, doctor of the highest category **Temirgalieva Elmira Maratovna,**

Almaty, Republic of Kazakhstan

Assistant of the Department of Clinical Pharmacology **Nazarbekova Dinara Zhunusbekovna**

Relevance of the topic:

So far, according to WHO, it is predicted that by 2050 the number of elderly and long-living people on the planet will increase from 600 million to 2 billion. According to international statistics, the share of elderly people in Germany is 24%, the United States-16%, Ukraine-18%, Russia-15%. At the beginning of 2012, people in the age group "65 years or more" in Kazakhstan accounted for 6.6%.

The duration of inpatient medical care for the elderly and long-lived is on average 15-20% higher than in the working-age population.

Based on the above data, in the future the need to reduce the share of costs for the treatment of the elderly, the elderly and centenarians, prevent polypharmacy in the treatment process, focus on adaptation to longevity, taking into account social, physiological characteristics and polymorbidity arises in institutions of compulsory social health insurance and health care of the Republic of Kazakhstan, which are the prologue of personalized medicine.

Materials and method of research:

Retrospective analysis of the medical record and prescription sheet in elderly and long-lived patients who received treatment in a hospital.

In the course of the study, the medical records and treatment of 1,146 patients who received inpatient treatment in the hospital with a diagnosis of CHD, hypertension, COPD, pneumonia, pancreatitis, gastric ulcer and cirrhosis were analyzed. According to the WHO and Kazakhstan Ministry of Health classification, the number of men/women aged 60 to 74 years was relatively 47/179, the elderly 75 to 89 years-230/581, and centenarians over 90 years - 66/43. The obtained indicators were compared with 2017-2018.

A analysis of diagnoses from the patient treatment plans for 2017 and 2018 was conducted.

While study was found: many cases of polypharmacy; the administration of several drugs belonging to the same group; the incorrect prescription of antibiotics; information about drug allergies was not attached to the treatment card, monitoring organization not been notified; the unneeded prescription of vitamins; the prescription of medicines that are not included in the treatment guidelines and KNF; drugs was not written under the international non-proprietary

names of medicines; absence of monitoring to determine the rightness or wrongness of the treatment, coagulation tests, urinalysis, liver enzymes, kidney function; lack of substantiation of the drugs included in the treatment or excluded from treatment, the discrepancy of the drug in the leaves of treatment and hospital records of.

Expected result

1. Development of recommendations for the implementation of methods to prevent polypharmacy in the treatment of elderly patients and centenarians.

2. Inclusion of the proposed methods in treatment protocols for elderly and long-lived patients.

3. Implementation of methods for prevention of polypharmacy in the treatment process.

4. Develop guidelines for city and medical practitioners.

THE MOST COMMON MICROORGANISMS IN PATIENTS WITH POST-INTUBATION TRACHEAL STENOSIS AND THEIR SENSITIVITY TO ANTIBACTERIAL DRUGS

Resident physician, clinical pharmacologist (KazNMU named after S.D. Asfendiyarov)
Satayev A

Temirgalieva E. M

Associate professor of the Department of Clinical Pharmacology (KazNMU named after S.D. Asfendiyarov), Candidate of Medical Sciences.

Akimniyazova B. B.

Doctor of thoracic surgery.

Introduction: The treatment of patients with post-intubation tracheal stenosis is still a challenge, despite the extensive experience in managing this category of patients and the use of high-tech surgical methods of correction. The relevance of the topic is connected to the high antibiotic resistance of the microflora of the tracheobronchial tree due to the inadequate care of chronic cannula carriers, which causes both complications and the increase in treatment duration, and, subsequently, the duration of disability and a decrease in the patient's quality of life.

Objective: to identify the most common microorganisms in chronic cannula carriers and their antibiotic sensitivity.

Material: microbiological culture analysis from trachea and tracheostomy tube, antibiotic sensitivity, and treated antibiotic therapy are taken as the main criteria for selecting the effectiveness of restorative therapy after reconstructive surgical interventions on the trachea.

Discussion: The contingent of patients consisted of 30 people, including men-17, women-12 people, in the age category ranging from 18 to 65 years. All of them underwent a full examination, a collection of complaints and anamnesis, a local examination, a smear analysis to determine the microflora and sensitivity to antibacterial drugs, preoperative videobronchoscopy, CT examination of the neck organs. According to the results of microbiological analyses, the most frequently identified groups of microorganisms are: Staphylococci (Staphylococcus aureus, Staphylococcus epidermidis), Pseudomonas (Pseudomonas aeruginosa, Pseudomonas puticla). Other groups of microorganisms were also identified, among them: Pseudomonas (Moraxella catarrhalis, Pseudomonas shitrer, Pseudomonus fluorescens, Pseudomonas stutzeri), Staphylococci (Staphylococcus haemolyticus, Staphylococcus pseudintermidus), Streptococci (Streptococcus viridians, Streptococcus mitis, Streptococcus pneumoniae), Enterobacter (Enterobacter cloaca, Escherihia coli, Citrobacter fleundii). Taking into account the sensitivity results, drugs from the group of cephalosporins, fluoroquinolones, aminoglycosides, and carbapenems were prescribed.

Conclusion: Antibiotic therapy with mandatory consideration of the isolated microflora and its sensitivity allows to avoid repeated hospitalization of these patients with complications, to reduce the antibiotic resistance of microorganisms, and to reduce the hospitalization stay.

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WAVE HEIGHT ESTIMATION WITH FLOW SPEED BY USING ELM AND ANN METHODS

Narin KARABULUT

PhD. Student, Firat University, Faculty of Technology, Department of Mechatronics Engineering

(corresponding author)

Yagmur OLMEZ

Research Assistant, Firat University, Faculty of Technology, Department of Mechatronics Engineering

Gonca OZMEN KOCA

Associate Professor, Firat University, Faculty of Technology, Department of Mechatronics Engineering

ABSTRACT

Wave height estimation is a critical factor in the efficient operation of many offshore and coastal engineering activities. A machine learning framework is developed to estimate ocean wave conditions. By supervised training of machine learning models on many thousands of iterations of a physics based wave model, representations of significant wave heights can be used to estimate ocean conditions. In this study, estimation of wave height has been proposed to obtain with a single parameter which is the flow speed and contains the same physical effects at different deep. Extreme Learning Machine (ELM) and Artificial Neural Network (ANN) models have been studied by using different values of the specified parameter for buoy of Mediterranean Sea in Turkey. Various evaluation criteria (*R_square*, RMSE, MSE and MAE) have also been used to validate the performance of the wave height estimation. The best results are obtained as *0.941* and *0.889* of *R-square* values for ELM and ANN by considering all input parameters, respectively. The best *RMSE* values are achieved as *0.044* and *1.490* for ELM and ANN, respectively. It was seen that the calculation time was higher in ANN method than ELM. In order to better observe the difference between the examined and predicted values, a graphic drawing has realized. In addition, a scatter plot has drawn to show the estimated values in a specific area. Considering the results in general, wave height estimation has been realized using the flow speed parameter at four different depths of the sea and it was seen that ELM method provides better performance than ANN, among these estimation methods.

Keywords: Wave height, flow speed, ELM, ANN

DRY TURNING OPTIMIZATION OF INCONEL 718 USING CERAMIC COMPOSITE CUTTING TOOL BASED ON TAGUCHI AND TOPSIS APPROACHES

Hanane Boumaza [1], Salim Belhadi[2], Mohamed Athmane Yallese[2], Abdelkrim Haddad[1] and Kouahla Ilyas [2]

[1]Applied Mechanics of New Materials Laboratory-LMANM, May 8th 1945 University, P.O. Box 401, Guelma 24000, Algeria.

[2]Mechanics and Structures Research Laboratory (LMS), May 8th 1945 University, P.O. Box 401, Guelma 24000, Algeria.

ABSTRACT

Known as a heat-resistant super-alloy, Inconel 718 which is a precipitation hard-enable nickel-based alloy can withstand severe mechanical stresses and strains while remaining corrosion and creep resistant. Nickel Alloy 718 displays high tensile and creep-rupture properties at temperatures up to 704°C as well as a thermal conductivity of 6.5W/mK at a temperature range of 0-100°C. Furthermore, it does not show any spontaneous hardening during heating and cooling. These properties lead it to be highly desired for the manufacturing of aircraft, rocket and submarine engine components. Unfortunately, and due mainly to all these Inconel alloys inherent characteristics that lead them to be the ideal choice in harsh environments, it likewise makes them extremely difficult to machine into a desired final shape generating high cutting forces and poor surface finish. Machinability studies of Inconel 718 had been carried out by earlier researchers mostly at low or medium and even high cutting speed. The present study focuses on experimental investigation along with an effective approach to optimize the turning characteristics of the Inconel 718 refractory steel with multiple response outputs represented by the surface roughness (Ra) and the material removal rate (MRR). TOPSIS method was applied, and Taguchi's signal-to-noise ratio (S/N) was employed to obtain the best combination using the larger-the-better approaches for multi-optimization. Machining was performed with a ceramic composite cutting tool (CC670) and the tests carried out according to the Taguchi design (L18). The objective was to identify the best combination of the cutting parameters represented by the cutting speed (Vc), the feed rate (f), the depth of cut (ap) and the insert radius (r), for the minimization of (Ra) and simultaneous maximization of (MRR).

Keywords: Machining, Surface roughness, MRR, Taguchi, TOPSIS.

COVID-19 PANDEMİ SÜRECİNDE EKLEMELİ İMALAT YÖNTEMİ İLE ÜRETİLEN BİYO SİPERLİKLERİN MEKANİK ÖZELLİKLERİNİN İNCELENMESI

EXAMINATION OF THE MECHANICAL PROPERTIES OF BIO VISORS PRODUCED BY ADDITIVE MANUFACTURING METHOD DURING THE COVID-19 PANDEMIC PROCESS

İsmail TOPCU

Dr. Öğr. Üyesi, Alanya Alaaddin Keykubat Üniversitesi Rafet Kayış Mühendislik Fakültesi Metalurji ve Malzeme Mühendisliği Bölümü

ÖZET

Dünya genelinde yaşarken tanık olduğumuz ve bütün dünyayı etkileyen Yeni Tip Covid-19 bütün dünyada olduğu gibi ülkemizi de derinden etkilemiştir. Bu kapsamda salgının hızını azaltmak, tedavilerin aksamaması ve salgından daha az insanın etkilenmesi için virüsün enfekte biçimine bağlı olarak polimer tabanlı siperlikler tasarlanmıştır. Bu kapsamda özellikle tedavi sürecinde virüsle karşı karşıya kalan ve çok yoğun çalışan sağlık çalışanlarının izole edilmesi için çözümlerin üretilmesi gerekmektedir. Eklemeli imalat yöntemi ile üretilen ekipmanların tamamı Yeni Tip Koronavirüs testleri esnasında, sağlık personelinin maksimum seviyede korunması amaçlandı. Tüm hastane ve sağlık personeli için çok önemli olan ve hasta ile yüz yüze çalışırken personeli aerosollerden koruyacak biyo siperlikler için daha güncel ve fonksiyonel farklı ölçüler ve tasarımlar yapıldı.Bu çözümlerin en önemli özelliği çok çabuk tasarlanıp üretilmesi, fonksiyonel olması, biyo uyumlu ve kolay üretiliyor olmasıdır. Eklemeli imalat ile (3D yazıcılar) üretimleri yapılan siperliklerin ihtiyaç sahiplerine ulaştırılması gerçekleştirilmiştir. Çalışmamızda da sağlık personelleri için üretilen üç ayrı tip siperliğin mekanik özellikleri incelenmiştir. İncelemeler neticesinde aynı üründe boyutlar ve kalınlıkların artırılması ile artırılan dayanıklılığın baskı hızı düşürülmesi ve hassasiyetin 0.1 mikrona çekilebilmesi ile farklı mekanik özelliklerin elde edildiği gözlemlenmiştir.

Yapılan çalışmalar sonucunda üretilmiş olan biyo siperliklerden en iyi mekanik özellikler KS140 siperliklerinden elde edilmiştir. Sırası ile aynı yöntem ile üretilmiş olan ve karşılaştırmaya tabi olan diğer modellerden KS100 ve US100 tip modellleri olmuştur.

Anahtar Kelimeler: Eklemeli imalat, siperlik, covid19

ABSTRACT

The New Type Covid-19, which we witnessed while living around the world and affected the whole world, has deeply affected our country as it does all over the world. In this context, polymer-based visors have been designed depending on the infected form of the virus in order to reduce the speed of the epidemic, prevent the treatment and to affect less people from the epidemic. In this context, solutions should be produced to isolate healthcare workers who are exposed to the virus and working very intensively, especially during the treatment process. All of the equipment produced with the additive manufacturing method was aimed to protect the healthcare personnel at the maximum level during the New Type Coronavirus tests. More up-to-date and functional different measurements and designs have been made for bio visors, which are very important for all hospitals and healthcare personnel and will protect the personnel from aerosols while working face to face. The visors produced by

additive manufacturing (3D printers) were delivered to those in need. In our study, the mechanical properties of three different types of visors produced for healthcare personnel were examined. As a result of the investigations, it was observed that different mechanical properties were obtained in the same product by increasing the dimensions and thicknesses, decreasing the printing speed and reducing the sensitivity to 0.1 micron.

The best mechanical properties of the bio visors produced as a result of the studies were obtained from the KS140 visors. The KS100 and US100 type models, which were produced by the same method and were subject to comparison, respectively.

Keywords: Additive manufacturing, visor, covid19

COVİD-19 PANDEMİ SÜRECİNDE İHTİYAÇ DUYULAN PLA BİYOSİPERLİKLERİN EKLEMELİ İMALAT YÖNTEMİ İLE ÜRETİMİ

MANUFACTURING OF PLA BIOPSYPERCUITS NEEDED IN THE COVID-19 PANDEMIA PROCESS BY ADDITIVE MANUFACTURING METHOD

İsmail TOPCU

Dr. Öğr. Üyesi, Alanya Alaaddin Keykubat Üniversitesi Rafet Kayış Mühendislik Fakültesi Metalurji ve Malzeme Mühendisliği Bölümü

ÖZET

Dünya genelinde yaşarken tanık olduğumuz ve bütün dünyayı etkileyen Covid-19 bütün dünyada olduğu gibi ülkemizi de derinden etkilemiştir. Bu kapsamda salgının hızını azaltmak, tedavilerin aksamaması ve salgından daha az insanın etkilenmesi için virüsün enfekte biçimine bağlı olarak polimer tabanlı siperlikler tasarlanmıştır. Bu kapsamda özellikle tedavi sürecinde virüsle karşı karşıya kalan ve çok yoğun çalışan sağlık çalışanlarının izole edilmesi için çözümlerin üretilmesi gerekmektedir. Bu çözümlerin en önemli özelliği çok çabuk tasarlanıp üretilmesi, fonksiyonel olması, biyo uyumlu ve kolay üretiliyor olmasıdır. Eklemeli imalat ile (3D yazıcılar) üretimleri yapılan siperliklerin ihtiyaç sahiplerine ulaştırılması gerçekleştirilmiştir. Çalışmamızda da sağlık personelleri için üretilen üç ayrı tip siperliğin mekanik özellikleri incelenmiştir. İncelemeler neticesinde aynı üründe boyutlar ve kalınlıkların artırılması ile artırılan dayanıklılığın baskı hızı düşürülmesi ve hassasiyetin 0.1 mikrona çekilebilmesi ile farklı mekanik özelliklerin elde edildiği gözlemlenmiştir.

Kullanış açışından delgeçli US100 modeli rahat gibi görünse de bir süre sonra asetatlarda delikten çıkma problemi ve tırnaklarda kırılma yaşandığı tespit edilmiştir. Üretilen siperliklerin hassasiyet mikronları ve yazma hızları düştükçe her modelde daha dayanıklı ürün elde edildiği tespit edilmiştir.

Anahtar Kelimeler: Eklemeli imalat, siperlik, covid19

ABSTRACT

Covid-19, which we witnessed while living around the world and affected the whole world, has deeply affected our country as it is in the whole world. In this context, polymer-based visors have been designed depending on the infected form of the virus in order to reduce the speed of the epidemic, prevent the treatment and to affect less people from the epidemic. In this context, solutions should be produced to isolate healthcare workers who are exposed to the virus and working very intensively, especially during the treatment process. The most important feature of these solutions is that they are designed and produced very quickly, they are functional, biocompatible and easy to produce. The visors produced by additive manufacturing (3D printers) were delivered to those in need. In our study, the mechanical properties of three different types of visors produced for healthcare personnel were examined. As a result of the investigations, it was observed that different mechanical properties were obtained in the same product by increasing the dimensions and thicknesses, decreasing the printing speed and reducing the sensitivity to 0.1 micron.

Although the US100 model with hole puncher seems to be comfortable from the opening of use, it has been determined that after a while, there is a problem with the transparency in the transparencies and a break in the nails.As the sensitivity micron and writing speeds of the

produced visors decreased, it was determined that more durable products were obtained in each model.

Keywords: Additive manufacturing, visor, covid19

FRACTIONAL ADAPTIVE CONTROL OF A SELF-EXCITED COMBUSTION SYSTEM

Marwa Boudana[1], Samir Ladaci[1,2] and Jean Jacques Loiseau[3]

[1]National Polytechnic School of Constantine, Department of E.E.A.N.V. Ali Mendjli, Constantine, Algeria.

[2]Laboratory of Signal Processing, SP-Lab, Mentouri University, Constantine, 25000, Algeria.

[3]LS2N-CNRS, Ecole Centrale de Nantes, Nantes, France.

ABSTRACT

The aim of this work is to design a fractional order adaptive controller for a class of self-excited combustion systems. First, modelling of the combustion system to be controlled will be derived without considering the time-delays. Then, the minimum fixed controller structure guaranteed to stabilise the combustion system will be presented. The adaptive controller is based on STR configuration and a fractional adaptive version of this controller will be introduced.

Self-excited combustion oscillations arise from a coupling between unsteady combustion and acoustic waves, and can cause structural damage to many combustion systems. Active control provides a way of extending their stable operating range by interrupting the damaging thermo-acoustic interaction. The active controller considered injects unsteadily some fuel into the burning region, thereby altering the heat release rate, in response to an input signal detecting the oscillation. Although the feasibility of such control configuration has been demonstrated on laboratory-scale experiments over 15 years ago, the triple challenge for full-scale applications is to adapt the controller response to varying operating conditions and guarantee that the controller will cause no harm while relying as little as possible on a particular combustion model.

Modelling of the system:

The general open-loop combustion process to be controlled is described by:

$$W_0 = k_0 \frac{Z_0(s)}{R_0(s)} \quad (1)$$

Where k0 is a positive constant and Z_0 and R_0 are two monic polynomials. Furthermore, Z_0 and R_0 are 'coprime' polynomials, which means that they have no common factors. We assume that Z_0 is a stable polynomial (i.e. it has only zeros in $Real(s) < 0$), whereas $R_0(s)$ has unstable zeros since our system exhibits self-excited oscillations. Finally, if R0 has degree n, Z_0 has degree $n - n*$

Where, $n*$ is the relative degree to be known.

Phase lead compensator:

The following equation represents the transfer function of a phase lead compensator will be used to stabilize the system:

$$K(s) = k_c * \frac{s+z_c}{s+p_c} \quad (2)$$

Where p_c and z_c are some positive constants such that $p_c > z_c$.

To improve the response of our first order compensator an adaptive version will be used.

Adaptive phase lead compensator:

The adaptive version of this regulator, called Self-Tuning Regulator (STR), is given in the following figure, where the arrow crossing a circle indicates an adaptive control parameter.

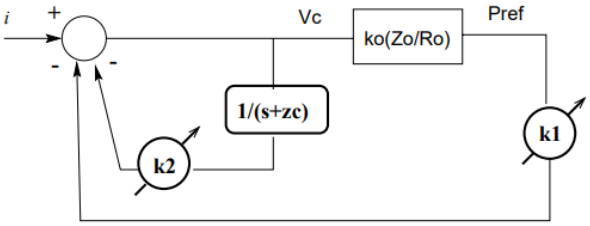

Figure 1. Adaptive controller configuration

The STR which guarantees the stability of the system is described by the following adaptive law:

$$V_c(t) = K^T(t) * d(t)$$

$$\dot{K}(t) = -P_{ref}(t) * d(t) \quad (3)$$

Where V_c is the control signal and P_{ref} is the output and some input noise i.

The fractional order adaption law is derived from (3) by introducinf a fractional order integral in the algorithm:

$$K^{\alpha}(t) = -P_{ref}(t) * d(t) \quad (4)$$

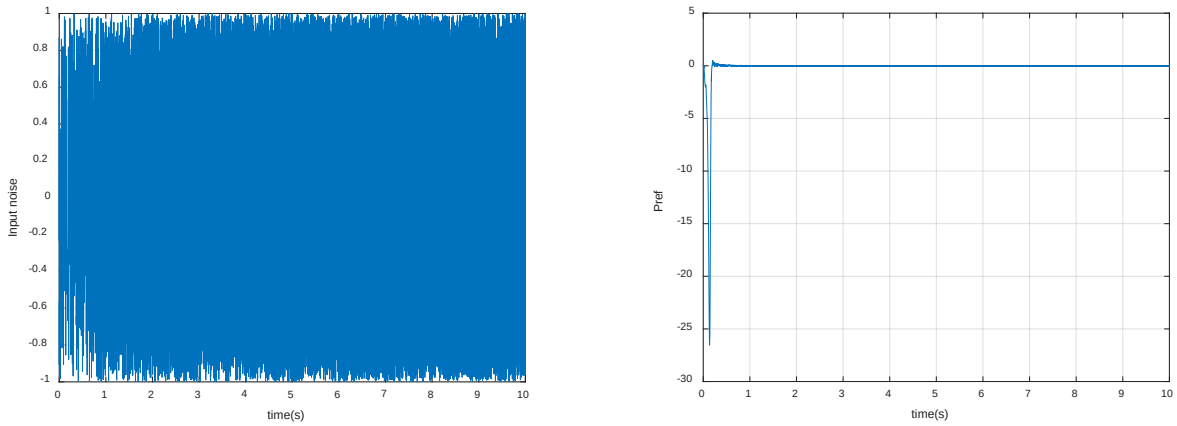

Figure 2. Simulation results for a fractional adaptive control (a) input signal, (b) system output.

Figure 2 shows that the proposed controller is able to stabilize the combustion system in presence of input disturbance. Further research will concern the improvement of robustness and performance of the system with time-delays.

Keywords: Fractional order control; adaptive control; self-excited combustion system; stability.

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MODERN CONSTRUCTION SOLUTION OF FRICTION DIAPHRAGM FOR MONOLITHIC CONCRETE BUILDINGS

I.Mumladze

Georgian Technical University, M. Kostava st. #77, 0166, Tbilisi, Georgia

ABSTRACT

Earthquakes are one of nature's most violent events. From an economic point of view, it is recommended to take additional seismic measures for buildings to reduce the maximum movements and deformations of the load-bearing frame of the building. The issues discussed in the article are related to increasing the seismic resistance of project buildings through seismic protection systems. In view of the above and from an economic point of view, diaphragms may be considered as active seismic elements of tall buildings. A useful model of friction diaphragm for monolithic reinforced concrete buildings, its construction solution and installation technology are proposed.

RESEARCH AND CONTROL OF PROTECTED INDUSTRIAL SYSTEMS

Igor V. Naumeyko

Kharkov National University of Radioelectronics, Ukraine

ABSTRACT

The dynamic models of the complex ergatic objects' behavior, presented in the form of differential equations and their systems were studied. Their stability and other properties are researched. Methods of analysis and reduce of harmful factors and their impact on people were theoretically proved. Conditions for removing the critical points in dynamics of hazards distribution are offered. Systems of the harmful external factors protection is the object of study. Subject of research is the system of two nonlinear differential equations as the model of technical systems with protection. The object of protection is described by logistic equation and defense system - by non-linear differential equation with security functions of rather general form. This project describes critical modes analysis and stationary states' stability of protected systems with harmful influences. Numerical solutions of general problem and analytical solutions for the case of fixed expected harmful effects have been obtained. Three types of general models for "Man-machine-environment" systems were studied. Each describes some kind of practically important quality of object in an appropriate way. And all together they describe the object in terms of it's safe operation. Their further detailing process results to either well known, or some new subsystems' models. Systems with "fast" protection at a relatively slow dynamics of the object were studied. This leads to the models with small parameter and asymptotic solutions of differential equations. Some estimates for protection cost in different price-functional were obtained. We consider different functions in the right part of equation, which describes the dynamics of defense. Calculations, analysis and graphical representations were done with the help of mathematical packages.

STRESS EFFECT ON ENERGY STORAGE PROPERTIES OF BATIO$_3$ BULK CERAMICS

Nishchay Saurabh and Satyanarayan Patel*

Department of Mechanical Engineering, Indian Institute of Technology Indore, Indore, 453 552, Madhya Pradesh, India

***ORCID NO: 0000-0002-4165-1040**

ABSTRACT

Ferroelectric materials belong to a subclass of pyroelectric and piezoelectric materials. Hence, it exhibits piezoelectric, pyroelectric and ferroelectric properties, making them promising materials for various applications such as sensor, actuator, transducer, energy storage, thermal/vibration energy harvesting and solid-state refrigeration. The effect of stress and temperature on lead-free barium titanate (BaTiO3) bulk ferroelectric ceramics is explored in the present work. Polarization-electric field (P-E) hysteresis loops were measured under various uniaxial compressive stresses at different temperatures. The effect of stress and temperature on hysteresis parameter maximum polarization (Pmax), remnant polarization (Pr) and coercive electric field (Ec) and energy storage capacity was analyzed. The Pmax and Pr decreases from 21.61 μC/cm2 to 9.47 μC/cm2 and 5.22 μC/cm2 to 1.33 μC/cm2, respectively, with increasing stress from 5 MPa to 160 MPa at 25 °C. This is because stress produces the domain pinning/rotation away from the direction of the applied electric field. However, temperature increases the thermal relaxation of domains, which also decreases hysteresis parameters. Hence, hysteresis parameter alteration can help to reduce hysteresis loss and improve the energy storage capacity. The energy storage density enhanced from 94 to 100 kJ/m3 and efficiency varies from 57% to 62%, respectively, as the stress varies from 5 MPa to 40 MPa at 25 °C. The energy storage density decreased 94 to 83 kJ/m3 (at 5 MPa) and 100 to 87 kJ/m3 (at 40 MPa) as the temperature varies from 25 to 127 °C. It can be concluded that stress biasing helps to achieve higher energy storage density and efficiency in BaTiO3.

Keywords: Ferroelectric, Lead-free ceramics, $BaTiO_3$, Energy storage

ALEV GECİKTİRİCİ KATKI MADDELERİNİN PVC DUVAR KAPLAMALARI ÜZERİNDEKİ ETKİLERİNİN İNCELENMESİ

INVESTIGATION OF THE EFFECTS OF FLAME RETARDANT ADDITIVES ON PVC WALL COVERINGS

Selin ÖZDEMİR

Sanem Plastik Tasarım Merkezi

(Sorumlu Yazar)

İrem FİNCAN

Sanem Plastik Tasarım Merkezi

Özgür ÇOPKUR

Sanem Plastik Tasarım Merkezi

Mustafa BİRİCİKÖZCAN

Sanem Plastik Tasarım Merkezi

ÖZET

PVC'den üretilmiş malzemeler günlük yaşantımızda önemli bir yere sahip olup, tüketimi de günden güne artmaktadır. PVC, ısıl ve/veya oksidatif bozunması sürecinde dehidroklorinasyon reaksiyonundan dolayı ortama zehirli gazlar açığa çıkarır. Bu sebeple alev geciktirici katkı maddeleri içeren PVC formülasyonları giderek daha fazla önem kazanmaktadır.

Bu çalışmada, alev geciktirici katkı maddelerinin PVC ürünler üzerindeki etkileri incelenmek üzere, endüstriyel ölçekte üretim yapan ve bir planet ekstrüzyon kalender sistemi kullanan işletmede; yumuşak PVC film üretimi ile başlayıp yapı sektöründe kullanılmak üzere duvar kaplaması ürününe dönüşüm prosesleri üzerinde incelenmiştir.

Alev geciktirici katkı maddesi olarak farklı miktarlardaki Alkil Aril Fosfat, Aluminyum Trihidroksit, Antimon trioksit ve Çinko borat kompleksi bileşiklerinin farklı oranlardaki karışımları kullanılmıştır. Önce her bir katkının etkisi ayrı ayrı incelenmiş, daha sonra farklı oranlarda bileşime eklenerek etkileri gözlemlenmiştir.

Alev geciktirici katkılar, PVC formülasyonuna fiziksel olarak karıştırılmıştır. Alev geciktirici katkı maddelerinin ürünler üzerindeki etkilerinin net olarak gözlemlenebilmesi için yapılan çalışmalarda, planet ekstrüzyon proses değişkenlerinde herhangi bir değişiklik yapılmamıştır.

Elde edilen PVC film örneklerinin ısıl ve mekanik özellikleri incelenmiş olup, elde edilen örneklere yanmazlıklarının incelenmesi için yanma reaksiyonu öncesinde ve sonrasında Fourier dönüşümlü kızılötesi spektroskopisi (FTIR) analizleri ve mekanik özelliklerinin incelenmesi için kopma uzama testleri uygulanmış, sonuçlar incelenerek alev geciktirici katkıların son ürünün yanmazlık, ısıl dayanım ve mekanik özellikleri üzerinde nasıl etki yaptığı incelenmiştir.

Anahtar kelimeler: PVC Duvar kaplaması, Alkil Aril Fosfat, Aluminyum Trihidroksit, Antimon trioksit, Çinko borat

ABSTRACT

Materials made of PVC have an important place in our daily life and their consumption is increasing day by day. PVC releases toxic gases into the environment due to its

dehydrochlorination reaction during its thermal and / or oxidative decomposition process. For this reason, PVC formulations containing flame retardant additives are becoming more and more important.

In this study, in order to investigate the effects of flame retardant additives on PVC products, in an industrial-scale enterprise using a planetary extrusion calender system; It has been investigated on the processes starting with the production of soft PVC film and transforming it into a wall covering product for use in the building sector.

Mixtures of different amounts of Alkyl Aryl Phosphate, Aluminum Trihydroxide, Antimony trioxide and Zinc borate complex compounds in different amounts were used as flame retardant additives. First, the effect of each additive was examined separately, then added to the composition in different proportions and their effects were observed.

Flame retardant additives are physically mixed into the PVC formulation. In studies conducted to clearly observe the effects of flame retardant additives on the products, no changes have been made in the planetary extrusion process variables.

The thermal and mechanical properties of the obtained PVC film samples were examined, Fourier transformed infrared spectroscopy (FTIR) analyzes were applied to the samples obtained before and after the combustion reaction to examine their incombustibility and the rupture elongation tests were applied to examine the mechanical properties. How it affects the thermal resistance and mechanical properties has been examined.

Keywords: PVC Wall covering, Alkyl Aryl Phosphate, Aluminum Trihydroxide, Antimony trioxide, Zinc borate

UNIVERSAL PARAMETER CALCULATION METHOD METAL CUTTING MODES

УНИВЕРСАЛЬНАЯ МЕТОДИКА РАСЧЕТА ПАРАМЕТРОВ РЕЖИМА РЕЗАНИЯ МЕТАЛЛОВ

Shvets S. V.

Sumy State University, Ukraine

ABSTRACT

Using the concept of the ultimate work (service life) of the blade, a universal, simple and understandable method for calculating the parameters of the cutting mode has been created for the entire existing range of tool materials from different manufacturers.

By controlling the resource consumption of the blade with a certain geometry, allowable wear and material by assigning the depth of cut, feed and tool life when processing material with specific mechanical properties, the cutting speed is calculated.

The life cycle of the cutting system is determined by the durability of the blade, the safety margin, which is consumed at a certain rate, depending on the operating conditions. The reliability resource does not depend on how its reserve is spent, if the change in the operating mode does not cause radical changes in the properties of the tool material (upon reaching the critical temperature, ultimate loads, chemical transformations). Consequently, the greatest work that can be performed for a given blade wear is constant and does not depend on cutting conditions. This allows, in the presence of design formulas that allow to establish the functional relationship between the parameters of the cutting mode used for a certain period of time, and the work performed at the same time, to set the values of the parameters of the cutting mode at the given values of the tool life and wear of the blade.

АННОТАЦИЯ

На основе концепции предельной работы режущего инструмента создана универсальная, простая и понятная методика расчета параметров режима резания для всего существующего ассортимента инструментальных материалов разных производителей.

Скорость резания рассчитывается путем управления расходом ресурса работоспособности лезвия с определенной геометрией. Учитывается допустимый износ, глубина резания, подача и стойкость инструмента при обработке материала с определенными механическими свойствами.

Жизненный цикл системы резания определяется долговечностью лезвия, запасом прочности, который расходуется с определенной скоростью в зависимости от условий эксплуатации. Ресурс надежности не зависит от того, как расходуется его резерв, если изменение режима работы не вызывает радикальных изменений свойств материала инструмента (при достижении критической температуры, предельных нагрузок, химических превращений). Следовательно, наибольшая работа, которую можно выполнить при заданном износе лезвия, является постоянной и не зависит от условий резания. Это позволяет при наличии расчетных формул, обеспечивающих функциональную взаимосвязь между параметрами режима резания и выполняемой при этом работы, установить значения параметров резания при заданных значениях стойкости инструмента и износа лезвия.

YOĞUN BAKIM ÜNİTESİNDE COVID-19 POZİTİF HASTALARLA ÇALIŞAN HEMŞİRENİN DENEYİMLERİ: OLGU SUNUMU

THE EXPERIENCES OF A NURSE GIVING THE NURSING CARE TO COVID-19 POSITIVE PATIENTS: A CASE REPORT

Dr. Öğr. Üyesi Fatma BİRGİLİ

Muğla Sıtkı Koçman Üniversitesi, Sağlık Bilimleri Fakültesi, Hemşirelik Bölümü, Muğla-TÜRKİYE

ORCID ID: 0000-0003-0942-2122

Prof. Dr. Nezihe BULUT UĞURLU

Muğla Sıtkı Koçman Üniversitesi, Sağlık Bilimleri Fakültesi, Hemşirelik Bölümü, Muğla-TÜRKİYE

ORCID ID: 0000-0003-2860-1169

ÖZET

Dünya Sağlık Örgütü, Pandemi ve Salgın Hastalıklar Dairesi (WHO-PED), COVID-19'dan etkilenen popülasyonlar üzerindeki etkiyi azaltmak, uluslararası yayılmayı sınırlandırmak ve yeniden ortaya çıkan salgın hastalıkları ele almak için stratejiler, girişimler ve mekanizmalar geliştirir. Politikaların ve protokollerin bir kısmı, hastalarla nasıl başa çıkılacağı konusunda hemşireler tarafından yönetilen sağlık ekibinin rolüne odaklanmıştır. COVID-19 yeni bir virüs salgını olduğundan, tüm COVID-19 protokollerinin esas olarak hemşireler tarafından uygulanması beklenmektedir. Hemşirelerin rolü, hasta bakımda hasta bakımının ötesine geçmektedir. Hemşireler, dünya çapında üçüncü önde gelen ölüm nedeni olarak kabul edilen COVID-19 gibi bulaşıcı hastalıkları yönetmek ve azaltmak için sağlık hizmetlerinin hazırlanmasında ve sunumunda çok önemli bir rol oynamaktadır

Yapılan çalışmalarda toplam COVID-19 pozitif vakalarının % 5 ila 20'si bir yoğun bakım ünitesine (YBÜ) kabul edilmeyi gerektirmiş ve akut solunum sıkıntısı sendromu geliştiren kritik hastalarda mortalite yaklaşık % 50 olmuştur. COVID-19 hastalarında, sağlık çalışanlarının COVID-19'a maruz kalma riski yüksektir ve kişisel koruyucu ekipman (KKE) kullanımı zorunludur. COVID-19'lu YBÜ hastalarında aerosol üreten prosedürler gerçekleştirmek için negatif basınçlı odalar önerilmektedir. Ne yazık ki, Yoğun Bakım Ünitesinde negatif basınçlı odalar bulunmamaktadır. Bu nedenle tüm YBÜ klinik alanı (yatak ünitesi, hemşire istasyonu, toplantı alanı vb.) *"Kontamine alan"* olarak kabul edilmiştir . Sağlık çalışanlarının KKE'larının giyilmesi ve çıkarılması için iki ayrı alan oluşturulmuştur. KKE ihtiyacı, hemşirelik iş yükünü ve yorgunluğu önemli ölçüde artırmıştır. Koruyucu ekipmanların kullanılması vücut ısısını artırmakta ve sadece birkaç saat tolere edilebilmektedir. Bu nedenle, izole hastalara ayrılmış odalarda bakım için her 2-3 saatte bir rotasyon düzenlenmiştir. YBÜ, YBÜ deneyimi olmayan diğer kliniklerden rotasyona gelen ya da yeni mezun hemşireler tarafından desteklenmek zorunda kalmıştır. Ayrıca, COVID-19 yoğun bakım ünitelerine hasta yakınlarının girmesi yasaklanmış, bu nedenle, teması sağlamak için hastalar ve yakınları arasında iletişim sağlanmıştır. Tüm bu zorlu koşullarda kesintisiz hizmet sağlayan YBÜ hemşirelerinin çalışma süreçleri gözden geçirilmeli, sağlık güvenliği sağlanmalı ve desteklenmelidir. Bu olgu sunumunda pandemi sürecinde COVID-19 pozitif hastalara bakım veren bir YBÜ hemşiresinin karşılaştığı sorunlar ile ilgili duygu ve düşünceleri, baş etme stratejileri açıklanmaktadır.

Anahtar kelimeler: covid-19, hasta, hemşire, yoğun bakım ünitesi, bakım

ABSTRACT

The World Health Organization, Pandemic and Epidemic Department (WHO-PED) develops strategies, initiatives and mechanisms to reduce the impact on populations affected by COVID-19, limit international spread, and address re-emerging epidemics. Some of the policies and protocols focus on the role of the healthcare team led by nurses in how to deal with patients. As COVID-19 is a new virus outbreak, all COVID-19 protocols are expected to be implemented mainly by nurses. The role of nurses goes beyond patient care in patient care. Nurses play a pivotal role in the preparation and delivery of healthcare to manage and reduce infectious diseases such as COVID-19, which is considered the third leading cause of death worldwide.

In studies conducted, 5 to 20% of all COVID-19 positive cases required admission to an intensive care unit (ICU), and mortality was approximately 50% in critically ill patients who developed acute respiratory distress syndrome. In COVID-19 patients, healthcare workers have a high risk of exposure to COVID-19 and the use of personal protective equipment (PPE) is mandatory. Negative pressure rooms are recommended for performing aerosol generating procedures in ICU patients with COVID-19. Unfortunately, there are no negative pressure rooms in the Intensive Care Unit. For this reason, the entire ICU clinical area (bed unit, nurse station, meeting area, etc.) was accepted as a "contaminated area". Two separate areas have been set up for healthcare workers to don and take off PPE. The need for KKR has significantly increased the nursing workload and fatigue. The use of protective equipment increases body temperature and can only be tolerated for a few hours. For this reason, a rotation was arranged every 2-3 hours for care in rooms reserved for isolated patients. The ICU had to be supported by nurses who came to rotation from other clinics without ICU experience or who had recently graduated. In addition, patients' relatives were prohibited from entering COVID-19 intensive care units, therefore communication was provided between patients and their relatives to ensure contact. The working processes of ICU nurses, who provide uninterrupted service in all these difficult conditions, should be reviewed, health safety should be provided and supported. In this case report, the feelings and thoughts about the problems faced by an ICU nurse who cared for COVID-19 positive patients during the pandemic process, and coping strategies are explained.

Keywords: covid-19, patient, nurse, intensive care unit, care

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SAVE YOURSELF AND SAVE OTHERS (PANDEMIC)

COVID-19 CORONAVIRUS

Candidate of pedagogical sciences **Dildabekova L. A**., Candidate of Chemical sciences **Alikhanov H. B.,** undergraduate **Rametova B. A**

Shymkent, Kazakhstan

Who knows when this disease, which appeared on December 19 and became the enemy of all mankind in the world, will disappear? One thing I know for sure is that the official name of Covid-19 won't slow down even today! This global disease has not spared our country. What to do? How to avoid it? Let's talk!

ALV apparatus – artificial lung ventilation apparatus. A person who breathes with such a device cannot breathe on his own and eat on his own. Because breathing with such a device is a very painful process.

On March 11, the World Health Organization created a worldwide emergency for this virus.

For the first time, it was discovered that this virus, found in the neighboring state, China, also occurs in some species of domestic animals. It is known that coronovirus is a collection of several viruses and carries with it a number of viruses. The reason this new type of virus is so named is that the virus is shaped like a corona. This virus-cellular fluid, penetrating into the cytoplasm, quickly spreads throughout the body and controls the immune system. Hence, this means that the virus is recognized and becomes a barrier for the organism to fight against it. Coronaviruses are destroyed immediately at 56 degrees, which the external environment cannot withstand.

The vast majority of coronavirus infections are respiratory. Stages in intestinal diseases occur in very few cases. Since the organism that defeats the virus is young, it is often found in children. The prevailing data on the disease of young children, which is 5-7 times more than older people. But the probability of a quick win prevails.

The main reasons for the spread of infection are: patients in a clinical hospital and failure to take necessary measures.

This set of disease like viruses was first discovered and isolated in 1965. Various types of coronaviruses are widespread in nature, causing various infectious pathologies in animals [1].

How did it all begin?

In December 2019, Chinese authorities announced the emergence of an unknown pneumonic virus and its further outbreak. The condition of the first patients was associated with seafood dishes. In early 2020, it was announced that 218 people were fighting the virus, and it was revealed that 4 had died. Later, it began to spread to the neighboring states of the Eastern country. One of the first countries was the city of Wu-Han in the state of China, and the state of Thailand in the 2nd was not inferior to it.

However, there are several states that are taking precautions and preventing the influx of this virus into the country.

North Korea and Turkmenistan are in the lead.

Yes, yes, the North Korean state, no matter how close it is to China, is fighting this virus, trying to prevent it from entering its state**.**

According to official data, this is the largest country in terms of coronavirus infection. Given that China's closest neighbors have maintained the quarantine regime since the earliest times, it is safe to believe.

The neighboring countries of the state of Turkmenistan on the 2nd place will be interested in the fact that we have also registered this fact, and they do not have the number of patients! In this state, relations with the border countries on the continent are suspended. It is noteworthy that on the territory of the state, wearing a mask with the word "coronovirus" is prohibited!

The only way to get rid of this disease is to stay at home and protect yourself and others. In the past days in the Kazakhs did not meet the requirements during the quarantine, no matter how many fines they pay, these actions do not stop, I would say only one to our people! Observe the requirements, take care of yourself, others!

It is necessary to fulfill only the requirements that are now being shown even on television.

For example,

- social distance must be observed,

- it is necessary to wear a mask in any place, without throwing it away,

- our mask should be changed every 3 hours,

-using an existing antiseptic,

Let's be careful with this virus as much as possible!!!

«Is it possible to treat this disease at home?» there is a question in the mind of any person. To this question, we can't say exactly «Yes» or «No».Because this situation will depend on the precautions and responsibility taken by everyone. From the moment of closing the house for quarantine, you should strictly follow the doctor's instructions! Citizens and quarantined citizens are not allowed to go anywhere. Absolutely! Compliance with hygiene requirements, frequent ventilation of the room, availability of individual dishes for each person, timely washing of hands with soap and antiseptic agents-reduces the progression of the disease, reduces the risk of infection of other family members [3].

In conclusion: we realized that everything is in our hands. Now let's follow these measures! While we have the opportunity not only to save ourselves, but also to protect the world, I urge you to take advantage of this opportunity and fight the global pandemic!!!

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COVID-19 PANDEMİ SÜRECİNDE SOSYAL DESTEK KAPANIŞLARI VE BUNLARIN YAŞLILAR VE BAKICILAR ÜZERİNDEKİ ETKİLERİ: OLGU SUNUMU

SOCIAL SUPPORT CLOSURES DURING THE COVID-19 PANDEMIC AND THEIR IMPACT ON THE ELDERLY AND CAREGIVERS: A CASE REPORT

Dr. Öğr. Üyesi Fatma BİRGİLİ

Muğla Sıtkı Koçman Üniversitesi, Sağlık Bilimleri Fakültesi, Hemşirelik Bölümü, Muğla-TÜRKİYE

ORCID ID: 0000-0003-0942-2122

Prof. Dr. Nezihe BULUT UĞURLU

Muğla Sıtkı Koçman Üniversitesi, Sağlık Bilimleri Fakültesi, Hemşirelik Bölümü, Muğla-TÜRKİYE

ORCID ID: 0000-0003-2860-1169

ÖZET

COVID-19 vakası ilk olarak, Çin'in Wuhan kentinde 2019'un yeni yıl arifesinde bildirildi. O zamandan beri küresel olarak yayıldı ve birçok ülkeyi kilit altına aldı. Ülkemizde de 16 Mart 2020'den itibaren ülke çapında izolasyon uygulandı, Sonrasında 65 yaş ve üzeri yaşlılar için günün 10.00-13.00 daha sonra 10.00-14.00 saatleri arasında evden dışarı çıkmalarına izin verildi. Süreç içinde yaşlıların toplu taşıma araçlarına binmeleri yasaklandı, temel ihtiyaçları yakınları tarafından karşılanmaya başlandı. Hatta 70 yaşın üzerindeki insanlar ve altta yatan sağlık sorunları olanlar hiç dışarı çıkmamalı ve korunmaları gerekiyordu. Yaşlılar komşuları, arkadaşları, aile bireyleri ile uzaktan kısıtlı iletişim kurmaya başladı. Yapılan çalışmalarda yaşlılarda yalnızlık depresyon, anksiyete ve kişilerarası ilişkilerin bozulması, ayrıca sağlık sorunlarına ve hatta intihara karşı savunmasızlığın artmasıyla ilişkilendirilmiştir. Yaşlılıkta yalnızlık, çoklu değişim, kayıpların artması ve izolasyon nedeniyle ortaya çıkar. Weiss (1973) duygusal yalnızlık ile sosyal yalnızlık arasında ayrım yapmıştır. Bununla birlikte, duygusal yalnızlık yakın, samimi bir bağlanmanın yokluğundan kaynaklanır; sosyal yalnızlık ise, erişilebilir bir sosyal ağın olmamasıdır.

Bu süreçte aile bakıcıları yaşlı bakımında merkezi bir rol oynadı Aile bakıcıları aynı zamanda rollerinin bir parçası olarak, yaşlıların, kendisinin ve aile üyelerinin kişisel bakımının yanı sıra rutin ev işlerini de yapmak zorundadır. Bununla birlikte, bir bakıcı rolünü üstlenmek, psikososyal sıkıntı, sağlık üzerindeki olumsuz etki, baskı dahil olmak üzere önemli bir maliyetle ilişkilidir.

Yaşlıların ve bakım verenlerin yeterince desteklenmesinin sağlanması bu etkileri iyileştirebilir. Bu nedenle, destek ihtiyaçlarının değerlendirilmesi ve ele alınması önemlidir. Bu olgu sunumunda pandemi sürecinde 85 yaşında kadın bir yaşlının ve bakımını üstlenen aile bireyinin karşılaştığı sorunlar ile ilgili duygu ve düşünceleri, baş etme stratejileri açıklanmaktadır.

Anahtar kelimeler: yaşlı, bakım verici, pandemi süreci, sosyal izolasyon

ABSTRACT

The COVID-19 case was first reported on New Year's Eve in Wuhan, China. It has since spread globally and has locked up many countries. In our country, as of March 16, 2020, nationwide isolation has been applied, after which the elderly people aged 65 and over are allowed to leave

the house between 10.00-13.00 and then 10.00-14.00. During the process, elderly people were banned from using public transport, and their basic needs were met by their relatives. In fact, people over the age of 70 and those with underlying health problems should never go out and need to be protected. Elderly people started to communicate with their neighbors, friends and family members from a distance. Studies show that loneliness in the elderly has been associated with depression, anxiety, and deterioration of interpersonal relationships, as well as increased vulnerability to health problems and even suicide. It occurs due to loneliness, multiple changes, increased loss and isolation in old age. Weiss and Robert (1973) distinguished between emotional loneliness and social loneliness. However, emotional loneliness results from the absence of a close, intimate attachment; social loneliness is the lack of an accessible social network.

Family caregivers played a central role in elderly care in this process Family caregivers also, as part of their role, have to do routine housework as well as the personal care of the elderly, themselves and their family members. However, taking on the role of a caregiver is associated with a significant cost, including psychosocial distress, negative health impact, pressure.

Providing adequate support for the elderly and caregivers can improve these effects. Therefore, it is important to evaluate and address support needs. In this case report, the feelings and thoughts about the problems faced by an 85-year-old female and the family member undertaking her care during the pandemic process, and coping strategies are explained.

Keywords: elderly, caregiver, pandemic process, social isolation

CATION DEFICIENT DIELECTRIC RESONATOR PEROVSKITE ELECTROCERAMICS

Anand K. Tyagi

Professor (Physics & Materials Science), SBS State University (An Establishment of Punjab Govt.), NH-5, Firozpur – 152004 (India)

ABSTRACT

Electroceramics are the ceramics that have been specially designed for specific electrical, electronic, optical or magnetic properties. The futuristic demands of Communication Technology require the advanced electroceramics that may efficiently perform the functions of various circuit elements. The performance of electroceramics and their devices is primarily dependent on the three factors namely; complex interplay between processing & chemistry, structure at many levels and device physics. This paper describes the Nano Science assisted synthesis of application grade complex titanate based electroceramics that are presently being used or have futuristic potential to be used in communication technology. A preparative scheme using Nano-powders generated by Auto-ignition method has also been outlined and phase development investigated. The optimized prepartional conditions have also been studied and complex titanates to be used as Dielectric Resonators (DR) are specially tailored to meet the demand and requirement of microwave applications for high performance and low cost devices. The dielectric constants measured by sandwich method were found to be around 39 at 5 MHz frequency and all the samples were found to have Q-factor larger than 3500 that make the synthesized materials suitable to be used as DR in Microwave Communication Technology.

BAND STRUCTURE INVESTIGATION OF TIC NANOPARTICLES USING FTIR SPECTROSCOPY

Raisa R. Hakhiyeva

Institute of Radiation Problems of ANAS

AZ 1143, B.Vahabzada 9, Baku, Azerbaijan

ABSTRACT

For researching used powdered nano TiC particles consisting of 40-60 nm particles with a specific surface area (SSA) of ~ 50 m^2/g. It is important to note that, TiC nanoparticles have a density of 0.08 g/sm^3, though the actual density of TiC is up to 4.93 g/sm^3. Samples for IR experiments were prepared in the form of a solid mixture with a combination of KBr (1: 100) in the form of a cylinder with a diameter of 7 mm and a height of 1 μm by pressing at a press machine at 0.5 kN / sm^2. FTIR spectra of nano TiC samples were taken on the Varian 640 FT-IR device in the frequency range of 400 – 4000 sm^{-1}. As a result of the analysis of the spectra, it was found that the sample has four sharp peaks in general. The value of the wavenumber explaining the Ti-C bond in TiC nanoparticles has been determined. Simultaneously, nano TiC particles are explained by wave numbers appropriate to other possible bonds on the surface. In addition, the optimized phase structure of TiC nanoparticles was investigated.

Researches have shown that the peak wave number, which explains the Ti-C bond, is observed at 650 sm^{-1}. It was found that TiC nanoparticles are more sensitive to the environment due to their very large SSA. C-O bonds were determined at 1550 sm^{-1} of the wave number on the surface of TiC nanoparticles. Moreover, Ti-OH or Ti-O bonds located on the surface of the nanoparticle were determined at 2350 sm^{-1} and 2690 sm^{-1}. As a result of the adsorption capacity of nano TiC particles, -OH groups are visible at ~ 3500 sm^2.

CATALYTIC PHOTODEGRADATION STUDIES OF CRYSTAL VIOLET DYE BY GREEN SYNTHESIZED Co_3O_4 AND Ag-Co_3O_4 ASSISTED HELIANTHUS ANNUUS

Aamir IQBAL

Department of Chemistry, Government College University Faisalabad Pakistan

ORCID ID: 0000-0002-0326-4891

Dr. Muhammad SAEED

Department of Chemistry, Government College University Faisalabad Pakistan

ORCID ID: 0000-0002-8759-6948

ABSTRACT

This work focuses on the synthesis and characterization of Helianthus annuus (sunflower) leaves supported green synthesis of Co_3O_4 and Ag-Co_3O_4 particles and evaluation of its photocatalytic activity. During the preparation of Co_3O_4 and Ag-Co_3O_4 particles, the extract of Helianthus annuus leaves was used as a reducing and stabilizing agent. The obtained particles were analyzed by various analytical tools like XRD, TGA, TEM, UV-Vis spectroscopy, and FTIR. The crystalline and spinel phases of synthesized Co_3O_4 and Ag-Co_3O_4 particles were examined by the XRD and FTIR techniques. The photodegradation of crystal violet dye in the presence of visible light irradiation was used to examine the catalytic activities of synthesized particles. Over 0.002 g/ml of Co_3O_4 and Ag-Co_3O_4, about 63 percent and 98 percent of 100 mg/L degraded, respectively. The Eley-Rideal mechanism was used to explain the reaction kinetics and mechanism. The rate constant was found to be 0.0075 Co_3O_4 and Ag-Co_3O_4 have rates of 0.0167 per minute and 0.0167 per minute, respectively.

Keywords: green synthesis, Eley Radial mechanism, crystal violet, Helianthus annuus

BIOSYNTHESIS OF ZNO AND AG@ZNO CATALYSTS ASSISTED BY CALOTROPIS GIGANTEA LEAVES FOR BREAKDOWN OF RHODAMINE B DYE IN AQUEOUS MEDIUM

Farhat Hussain

Department of Chemistry, Government College University Faisalabad Pakistan

ORCID ID:0000-0003-3179-8011

Dr. Muhammad SAEED

Department of Chemistry, Government College University Faisalabad Pakistan

ORCID ID: 0000-0002-8759-6948

ABSTRACT

Photocatalysis is one of the techniques used for the eradication of organic pollutants from wastewater. The semiconductor metal oxides based photocatalysis is one of the effective techniques used for removal of pollutants from wastewater. The plants mediated biosynthesis of metal oxides have gained much interest because of its environmental friendly and cost-effective nature. This article reports the Calotropis gigantea mediated biosynthesis of ZnO and Ag@ZnO as effective catalysts for degradation of rhodamine B (RhB) dye. After characterization with advanced techniques, the biosynthesized ZnO and Ag@ZnO were tested as photocatalysts on degradation of RhB dye under irradiation. The catalytic activity of ZnO and Ag@ZnO was estimated in terms of decolorization, COD, and TOC removal. Results showed that 50.4 and 90.2% decolorization, 41.3 and 74.8% removal of COD, and 45.3 and 83.5% removal of TOC were measured over ZnO and Ag@ZnO as photocatalysts in 120 min, respectively. The biosynthesized Ag@ZnO was a stable and reusable catalyst in degradation experiments.

Keywords: Ag@ZnO, Calotropis gigantea, Eley–Rideal mechanism, rhodamine B, ZnO

COVID-19 DÖNEMİNDE YETİŞKİN BİREYLERDE DİYETLE ALINAN SU MİKTARININ VE FİZİKSEL AKTİVİTE DURUMUNUN DEĞERLENDİRİLMESİ

EVALUATION OF THE TOTAL WATER INTAKE BY DIET AND PHYSICAL ACTIVITY IN ADULT INDIVIDUALS DURING COVID-19 PERIOD

Nursel ŞAHİN[1], Şenay ÇATAK[2], Gamze AKBULUT[3]

[1]Bandırma Onyedi Eylül Üniversitesi, Sağlık Bilimleri Fakültesi, Balıkesir / Türkiye

[2]Aydın Adnan Menderes Üniversitesi, Sağlık Bilimleri Fakültesi, Aydın / Türkiye

[3]Gazi Üniversitesi, Sağlık Bilimleri Fakültesi, Ankara / Türkiye

ÖZET

Yeterli miktarda su tüketimi ve fiziksel aktivite, yaşamın her aşamasında sağlığın temel bileşenleridir. Su tüketimi ile birlikte yiyecek ve içeceklerle alınan su miktarı, diyetle alınan su miktarını ifade etmektedir. Diyetle alınan su miktarı, bireylerin hidrasyon durumunu etkilediği için üzerinde durulması gereken önemli bir konudur. Ayrıca fiziksel aktivite ile birlikte özellikle bağışıklık sistemi ile ilgili hastalıklarda birçok komplikasyonu azaltarak hayati önem taşımaktadır. Bu çalışma, COVID-19 döneminde yetişkin bireylerin diyetle alınan su miktarını ve fiziksel aktivite durumunu değerlendirmek amacıyla yapılmıştır. Bu amaçla, bireylerin vücut ağırlığı, boy uzunluğu ölçümleri ile besin tüketim sıklığı, içecek tüketim sıklığı ve Uluslararası Fiziksel Aktivite Anketi'nden oluşan Su Dengesi Ölçeği kullanılmıştır. Oluşturulan çevrim içi bir anket aracılığıyla 102 erkek ve 582 kadın olmak üzere toplam 684 yetişkin bireye ulaşılmıştır. Bireylerin %39,9'u düşük, %56,7'si orta ve % 3,4'ü yüksek fiziksel aktivite düzeyinde bulunmuştur. Fiziksel aktivite düzeyleri bakımından erkek ve kadınlar arasında anlamlı farklılık olmasa da düşük fiziksel aktivite düzeyinde olan kadınlar, erkeklerden daha fazla bulunmuştur ($p>0,05$). Aktivite düzeyi arttıkça içme suyu tüketimi, içeceklerden alınan su ve diyetle alınan toplam su miktarı artmıştır ($p>0,05$). Diyetle alınan su, erkeklerde 4776,1±165,54 mL, kadınlarda ise 4777,3±65,07 mL olarak belirlenmiştir. Erkek ve kadın bireyler arasında diyetle alınan su miktarı bakımından anlamlı bir farklılık bulunmamıştır ($p>0,05$). Ancak bireylerin BKİ değeri arttıkça içme suyu tüketimine bağlı olarak diyetle alınan su miktarı artmıştır ($p<0,05$). Sonuç olarak, çalışmaya katılan bireylerin çoğunun diyetle alınan su miktarı önerilerini karşıladığı ancak fiziksel aktivite düzeylerinin yetersiz olduğu sonucuna varılmıştır.

Anahtar Kelimeler: diyetle alınan su, fiziksel aktivite, COVID-19

ABSTRACT

Adequate water consumption and physical activity are essential components of health at all stages of life. The amount of water taken with food and beverages, together with water consumption, refers to the amount of water taken with diet. Dietary water intake is an important issue that needs to be considered as it affects the hydration status of individuals. Also, it is vital by reducing many complications, especially in diseases related to the immune system, with physical activity. This study was conducted to evaluate the dietary water intake and physical activity status of adults in the period of COVID-19. For this purpose, the Water Balance Scale consisting of the body weight and height measurements of the individuals, the frequency of food consumption, the frequency of beverage consumption, and the International Physical Activity Questionnaire was used. A total of 684 adult individuals, 102 males,and 582

females were reached through an online questionnaire. 39.9% of the individuals were found to be at low physical activity level, 56.7% of them were at medium level and 3.4% of them were at high physical activity level. Although there was no significant difference between men and women in terms of physical activity levels, women with low physical activity levels were found to be higher than men ($p>0.05$). As the activity level increased, drinking water consumption, water taken from beverages, and total water intake with diet increased ($p>0.05$). Dietary water intake was found to be 4776.1±165.54 mL in men and 4777.3±65.07 mL in women. There was no significant difference between male and female individuals in terms of the amount of water taken with diet ($p>0.05$). However, as the BMI value of the individuals increased, the amount of water taken with the diet increased due to drinking water consumption ($p<0.05$). As a result, it was concluded that most of the individuals participating in the study met the recommendations for dietary water intake, but their physical activity levels were insufficient.

Keywords: dietary water intake, physical activity, COVID-19

COVID-19 PANDEMİSİNDE BİREYLERİN BESLENME ALIŞKANLIKLARININ MENTAL SAĞLIĞA ETKİLERİNİN DEĞERLENDİRİLMESİ

EVALUATION OF THE EFFECTS OF THE NUTRITIONAL HABITS OF INDIVIDUALS ON MENTAL HEALTH IN COVID-19 PANDEMIA

Şenay ÇATAK[1], Nursel ŞAHİN[2], Gamze AKBULUT[3]

[1]Aydın Adnan Menderes Üniversitesi, Sağlık Bilimleri Fakültesi, Aydın / Türkiye

[2]Bandırma Onyedi Eylül Üniversitesi, Sağlık Bilimleri Fakültesi, Balıkesir / Türkiye

[3]Gazi Üniversitesi, Sağlık Bilimleri Fakültesi, Ankara / Türkiye

ÖZET

Sağlıklı beslenme, genellikle vücudun enerji ve fizyolojik ihtiyaçlarını destekleyen ve yeterli miktarda mikro ve makro besin içeren bir diyet olarak kabul edilmektedir. Akdeniz Diyeti yeterli ve dengeli beslenmenin bir örneğini oluşturabilir ve sağlık üzerinde koruyucu etkileri olabilir. Veriler çevrimiçi bir anket yoluyla toplanmıştır. Ankette sosyodemografik özellikler, Akdeniz Diyet Uyum Ölçeği (MEDAS) ve Kısa Warwick Edinburgh Mental İyi Oluş Ölçeği (SWEMWBS) kullanılmıştır. Anket, internet bağlantısı olan herhangi bir cihazdan bağlantı oluşturularak ulaşılabilen sosyal medya (Instagram, WhatsApp, Facebook gibi) veya e-posta yoluyla paylaşılmıştır. Toplam 296 birey (52 erkek ve 244 kadın) bu çalışmaya dahil edilmiştir. Kadınlarda MEDAS puanı daha yüksek bulunmuştur ($p<0,05$). Özellikle sebze ve balık tüketiminin fazla olduğu bireylerin mental sağlığının daha iyi olduğu gösterilmiştir ($p<0,05$). Çalışma sonunda Akdeniz Diyeti'ne uyumun düşük olmasına rağmen, sebze ve balık tüketimini arttırmanın mental sağlığa olumlu faydalarının olabileceği sonucuna varılmıştır.

Anahtar Kelimeler: Akdeniz Diyeti, mental sağlık, COVİD-19.

ABSTRACT

A healthy diet is generally accepted as a diet that supports the energy and physiological needs of the body and contains sufficient amounts of micro and macronutrients. The Mediterranean Diet can set an example of an adequate and balanced diet and may have protective effects on health. The data were collected through an online questionnaire. Sociodemographic characteristics, Mediterranean Diet Compliance Scale (MEDAS) and Short Warwick Edinburgh Mental Well-being Scale (SWEMWBS) were used in the questionnaire. The survey was shared via social media (such as Instagram, WhatsApp, Facebook) or e-mail, which can be accessed by creating a connection from any device with an internet connection. A total of 296 individuals (52 men and 244 women) were included in this study. MEDAS score was higher in women ($p<0.05$). It has been shown that individuals with high consumption of vegetables and fish have better mental health ($p<0.05$). At the end of the study, it was concluded that although the adaptation to the Mediterranean Diet was low, increasing the consumption of vegetables and fish may have positive benefits for mental health.

Keywords: Mediterranean Diet, mental health, COVID-19.

DEPRESYON VE UYKU KALİTESİNİN BESLENME DURUMU ÜZERİNE ETKİSİ

THE EFFECT OF DEPRESSION AND SLEEP QUALITY ON NUTRITIONAL STATUS

Gamze AKBULUT

Prof.Dr., Gazi Üniversitesi Sağlık Bilimleri Fakültesi Beslenme ve Diyetetik Bölümü

(Sorumlu Yazar)

Şule GÜL

Yüksek Lisans Öğrencisi, Gazi Üniversitesi Sağlık Bilimleri Enstitüsü Beslenme ve Diyetetik Anabilim Dalı

ÖZET

Amaç: Bu çalışma, depresyon semptomlarının ve uyku kalitesinin yetişkin bireylerde beslenme durumu üzerine etkisinin saptanması amacıyla planlanmış ve yürütülmüştür.

Gereç ve Yöntem: Çalışma Şubat 2020-Ocak 2021 tarihleri arasında Ankara ili Milli Eğitim Bakanlığı Merkez ve Beşevler Yerleşkesi'nde görev yapan 23-65 yaş aralığındaki 135 birey ile gerçekleştirilmiştir. Bireylerin sosyodemografik, beslenme ve sağlık bilgileri ile antropometrik ölçümlerini elde etmeye yönelik anket formu uygulanmış, ayrıca Beck Depresyon Ölçeği ve Pittsburgh Uyku Kalitesi İndeksi ile depresyon ve uyku kaliteleri hakkında bilgi edinilmiştir. Verilerin analizi için SPSS 11.5 paket programı kullanılmıştır.

Bulgular: Çalışmaya katılan 135 bireyin yaş ortalaması 42,1±8,64 yıl olup, %54,1'i kadın, %45,9'u erkektir. Beck Depresyon Ölçeği'ne göre bireylerin %73,4'ünde minimal düzey, %13,3'ünde hafif düzey ve %13,3'ünde ise orta düzey depresyon olduğu görülmüştür. Pittsburgh Uyku Kalitesi İndeksi'ne göre bireylerin %45,9'unda iyi uyku kalitesi görülürken, %54,1'inde kötü uyku kalitesi görülmektedir. Depresyon ve uyku kalitesi arasında istatiksel olarak anlamlı bir ilişki bulunmuştur ($p<0,001$). İyi uyku kalitesi görülen bireylerde, hafif düzey depresyon %3,2 ve orta düzey depresyon %6,5 iken, kötü uyku kalitesi görülen bireylerde sırasıyla %21,9 ve %19.2'dir. Minimal düzey depresyon görülen bireylerde diyetle çinko (mg), C vitamini (mg), diyet lifi (g), B_1 ve B_{12} vitamini (mcg) alımları orta düzey depresyon görülen bireylerden daha yüksek düzeydedir ($p<0,05$).

Sonuç: Yetişkin bireylerde uyku kalitesinin kötü olduğu ve kötü uyku kalitesinin artmış depresyon riski ile ilişkili olduğu gözlenmiştir. Diyetle çinko (mg), C vitamini (mg), diyet lifi (g), B_1 ve B_{12} vitamini (mcg) alımlarının depresyon ile ilişki olduğu bulunmuştur.

Anahtar Kelimeler: Depresyon, Uyku Kalitesi, Beslenme Durumu

ABSTRACT

Aim: This research was planned and carried out to determine the effects of depression symptoms and sleep quality on nutritional status in adults.

Subjects and methods: The study was carried out with 135 people aged between 23-65 years who worked at the Ankara Ministry of National Education Center and Beşevler Campus between February 2020-January 2021. A questionnaire was applied to obtain sociodemographic, nutritional and health information and anthropometric measurements of the individuals. In addition, information was obtained about depression and sleep quality with the

Beck Depression Scale and Pittsburgh Sleep Quality Index. SPSS 11.5 package program was used for data analysis.

Results: The study was conducted on total of 135 volunteer individuals with a mean age of 42,1 ± 8,64 years, 45,9% male and 54,1% female. According to the Beck Depression Scale, 73.4% of the individuals had minimal, 13.3% mild and 13.3% moderate depression. According to the Pittsburgh Sleep Quality Index, 45.9% of individuals have good sleep quality, while 54.1% have poor sleep quality. A statistically significant relationship was found between depression and sleep quality ($p<0,001$). While mild depression is 3.2% and moderate depression is 6.5% in individuals with good sleep quality, it is 21.9% and 19.2%, respectively, in individuals with poor sleep quality. Individuals with minimal depression have higher dietary intakes of zinc (mg), vitamin C (mg), dietary fiber (g), vitamin B_1 and vitamin B_{12} (mcg) than individuals with moderate depression ($p<0,05$).

Conclusion: It has been observed that sleep quality is poor in adult individuals and poor sleep quality is associated with an increased risk of depression. Dietary intakes of zinc (mg), vitamin C (mg), dietary fiber (g), vitamin B_1 and vitamin B_{12} (mcg) were found to be associated with depression.

Keywords: Depression, Sleep Quality, Nutritional Status

DEVELOPMENT OF SERS PLATFORM FOR THE DETECTION OF RHODAMINE 6G BY UTILIZING GRAPHENE QUANTUM DOTS ON HYBRID CORE-SHELL PD@AG NPS

Rutuja Mandavkar, Rakesh Kulkarni, Shusen Lin, Sanchaya Pandit, Sundar Kunwar and Jihoon Lee*

Department of Electronic Engineering, College of Electronics and Information, Kwangwoon University, Nowon-gu Seoul 01897, South Korea.

ABSTRACT

Along with the large surface area and high localized surface plasmon resonance (LSPR), bimetallic or core-shell nanoparticles (NPs) can be employed in a surface-enhanced Raman spectroscopy (SERS) substrate [1]. The plasmonic metallic NPs such as silver (Ag) and palladium (Pd) have been exposed as a novel approach for the engineering of the SERS substrate with their better stability and bio-compatibility [2]. Metal film thickness-induced solid-state dewetting (SSD) [3] approach can offer the dynamic evolution of the bimetallic NPs like hybrid core-shell Pd@Ag NPs with the Ag NPs as secondary background NPs as displayed in Fig. 1(a). As compared to the monometallic Ag and Pd NPs, the hybrid core-shell Pd@Ag NPs exhibited an improved frequency of plasmonic LSPR as shown in Fig 1(a-1). The narrowing LSPR peaks shown a blue shift due to the unique morphology of core-shell Pd@Ag NPs with the evolved background Ag NPs.

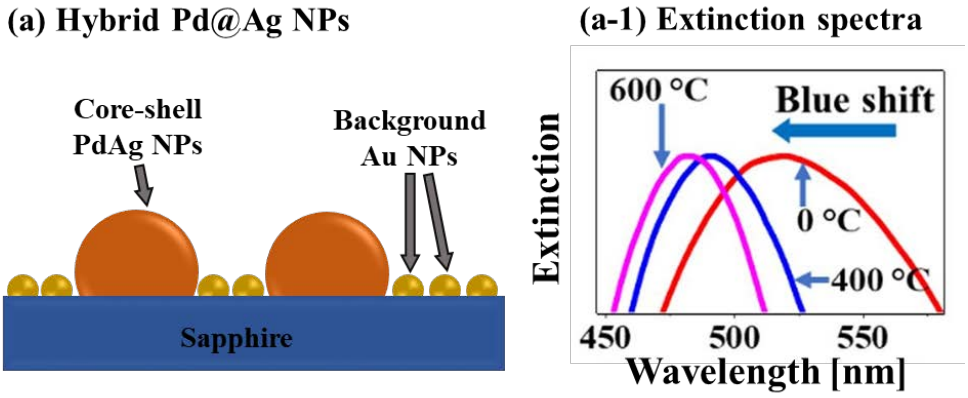

Figure 1. (a) Schematic of Pd@Ag hybrid core-shell NPs fabricated by the solid-state dewetting method. (a-1) Extinction spectra of Pd@Ag hybrid core-shell NPs [4].

In this work, the Rhodamine 6G (R6G) organic molecule has been used as an analyte to explore the improved SERS performance with the incorporation of graphene quantum dots (GQDs) on the hybrid core-shell Pd@Ag NPs as represented in Fig. 2(a). The hybrid nano-architecture of GQD/HNPs provides greatly influenced e-filed with the denser hotspots in between the small spacing of particles and background Ag NPs [5]. The dangling bonds on the GQDs edge effectively adsorb the probe molecules R6G [6], which revealed a significant improvement in SERS with lower R6G molarity. The dramatic enhancement in SERS signals can be attributed to the combined effect of chemical and electromagnetic enhancement through GQDs and plasmonic hybrid core-shell Pd@Ag NPs respectively, as displayed in Fig 2 (b) and 2(c).

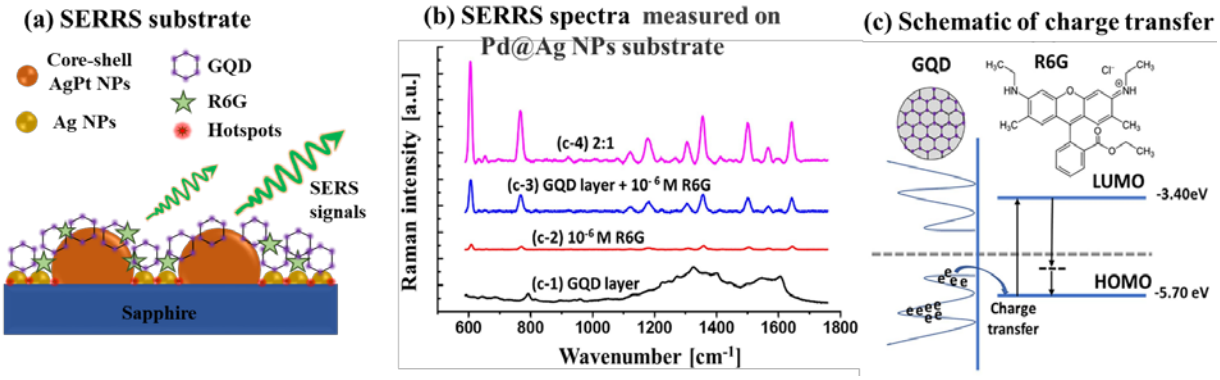

Figure 2. (a) Schematic of SERS substrate constructed on the Pd@Ag core-shell NPs and GQDs. (b) SERS spectra measured on the Pd@Ag core-shell hybrid NPs substrate. (c) schematic of ground-state charge transfer mechanism with the GQDs for SERS enhancement [4].

ACKNOWLEDGMENTS

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Author Contributions

Sanchaya Pandit: Conceptualization, Methodology, Writing - review & editing.

Sundar Kunwar: Methodology, Writing - review & editing.

Rakesh Kulkarni: Data curation. Rutuja Mandavka: Data curation. Shusen Lin: Data curation. Jihoon Lee: Conceptualization, Methodology, Writing - review & editing.

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$TlGaSe_2$, $TlInGaSe_2$, $Ga_{0.9}In_{0.1}Se$, $GaTe_{0.4}Se_{0.6}$, $GaTe_{0.8}Se_{0.2}$ YARIİLETKENLERİNİN TRANSMİSYON KATSAYILARININ ÖLÇÜLMESİ

MEASUREMENT OF THE TRANSMISSION COEFFICIENT OF $TlGaSe_2$, $TlInGaSe_2$, $Ga_{0.9}In_{0.1}Se$, $GaTe_{0.4}Se_{0.6}$, $GaTe_{0.8}Se_{0.2}$ SEMICONDUCTORS

Burcu AKÇA

Dr. Öğr. Üyesi, Ardahan Üniversitesi Sağlık Hizmetleri MYO Tıbbi Hizmetler ve Teknikler Bölümü

(Sorumlu Yazar)

Bekir GÜRBULAK

Doç. Dr., Atatürk Üniversitesi Fen Fakültesi Fizik Bölümü

Salih Zeki ERZENEOĞLU

Prof. Dr., Atatürk Üniversitesi Fen Fakültesi Fizik Bölümü

ÖZET

Bu çalışmada, $TlGaSe_2$, $TlInGaSe_2$, $Ga_{0.9}In_{0.1}Se$, $GaTe_{0.4}Se_{0.6}$, $GaTe_{0.8}Se_{0.2}$ yarıiletkenlerinin transmisyon katsayıları ölçülmüştür. Transmisyon katsayılarının ölçülmesi ile yarıiletkenlerin gama-ışını geçirgenlikleri belirlenmiştir. Deneyde, yüksek çözünürlüklü bir Si(Li) dedektör, 100 mCi şiddete sahip Am-241 nokta kaynak ve Enerji Ayrımlı X-ışını Floresans Spektrometresi (EDXRFS) kullanılmıştır. Yarıiletkenler Bridgman/Stockbarger metoduyla büyütülmüşlerdir. Çok kanallı analizör 4096 kanalda olacak şekilde, 1800 s sayma sürelerinde ölçüler alınmıştır. Çalışmada transmisyon ölçümü için kullanılan dar-şua geometrisinin oldukça hassas sonuçlar verdiği tespit edilmiştir.

Anahtar Kelimeler: EDXRFS, Bridgman/Stockbarger, Yarıiletken

ABSTRACT

In this study, transmission coefficients of $TlGaSe_2$, $TlInGaSe_2$, $Ga_{0.9}In_{0.1}Se$, $GaTe_{0.4}Se_{0.6}$, $GaTe_{0.8}Se_{0.2}$ semiconductors were measured. The gamma-ray permeability of semiconductors was determined by measuring the transmission coefficients. In the experiment, a high-resolution Si (Li) detector, an Am-241 point source with an intensity of 100 mCi, and an Energy Dispersive X-Ray Fluorescence Spectrometer (EDXRFS) were used. Semiconductors are grown by Bridgman / Stockbarger method. Measurements were taken at a counting time of 1800 s, with the multi-channel analyzer in 4096 channels. In the study, it was determined that the narrow-beam geometry used for transmission measurement gives very sensitive results.

Keywords: EDXRFS, Bridgman / Stockbarger, Semiconductor

DİYABETİK YARA İYİLEŞMESİNDE NİTRİK OKSİT TERAPİSİ

NITRIC OXIDE THERAPY IN DIABETIC WOUND HEALING

Emine Gülçeri GÜLEÇ PEKER

Dr. Öğretim Üyesi, Giresun Üniversitesi, Sağlık Bilimleri Fakültesi

ÖZET

Yara iyileşmesi iyi organize olmuş bir dizi karmaşık ve entegre süreçler silsilesidir. Bu süreçler, büyüme faktörleri ve sitokinler ile prostaglandinler, serbest radikaller ve nitrik oksit gibi diğer modulatörlere verilen normal hücresel cevaplara bağlıdır. Birbiriyle ilişkili yanıtlarda dar bir sınır aralığında bir miktar tolerans olsa da bu sınırların ötesine geçmek, gecikmiş yara iyileşmesine katkıda bulunabilir ve kronik yaralara yol açabilir. Kronik diyabetik yaralar, yara iyileşme sürecindeki bu tür bir bozulma ile ilişkili bir patolojidir. İnsanlarda ve hayvan modellerinde yapılan çeşitli araştırmalarda, gecikmiş yara iyileşmesinde moleküler düzeyde nitrik oksit ile ilişkili birçok değişikliği olduğu ortaya konmuştur. Bu değişikliklerin genel olarak daha iyi anlaşılması, spesifik olarak hedeflenen tedaviye izin verecek ve böylece tüm kronik diyabetik yaralardan mustarip pek çok hasta için gelişmiş yaşam kalitesi sağlayacaktır. Nitrik oksit, inflamatuvar yanıtı düzenleme ve bakteriyel enfeksiyonları ortadan kaldırma gibi kabiliyetleri nedeniyle yara iyileşmesinde potansiyel bir terapötik ajan olarak ümit vaat etmektedir. Yara iyileşmesinde nitrik oksidi kullanmak için iki strateji önerilmektedir: endojen rezervuarlardan nitrik oksit salınımını sağlamak ve eksojen kaynaklardan nitrik oksit düzeylerini ikame etmek. Bu sebeplerden dolayı nitrik oksit terapötik bir ajan olarak, daha fazla araştırmaya değer bulunmaktadır. Bu derlemede diyabetle ilişkili kronik yaraları iyileştirmek için çeşitli NO tabanlı yöntemlerin etkinliğinin incelenmesi amaçlanmıştır.

Anahtar kelimeler: Diyabet, Kronik yaralar, Nitrik oksit, Yara iyileşmesi

ABSTRACT

Wound healing is an organized series of complicated and integrated process. These processes depend on normal cellular responses to growth factors, cytokines, and other mediators, such as prostaglandins, free radicals, and nitric oxide. Although there is some tolerance in a narrow range of limits on interrelated responses, pushing beyond such limits may contribute to delayed wound healing and lead to chronic wounds. Chronic diabetic wounds are associated with such disruption in wound healing. Research in humans and animal models has identified many changes associated with nitric oxide at the molecular level in delayed wound healing. A better overall understanding of these changes would allow for specifically targeted treatment, thus ensuring improved quality of life for patients associated with all chronic diabetic wounds. Nitric oxide is promising as a potential wound therapeutic agent due to its ability to regulate inflammatory responses and eradicate bacterial infections. Two strategies exist to utilize nitric oxide for wound healing: releasing nitric oxide from endogenous reservoirs and supplementing nitric oxide from exogenous sources. Because of that, as a healing agent nitric oxide merits further researches. This review aimed to examine the efficacy of a variety of NO-based methods to improve diabetes-associated chronic wounds.

Keywords: Chronic wounds; Diabetes; Nitric oxide; Wound healing

INTERACTIONS OF NEUTRONS WITH MATTER

Nijat Abbasov

Chichak ABbasova

National Nuclear Research Center

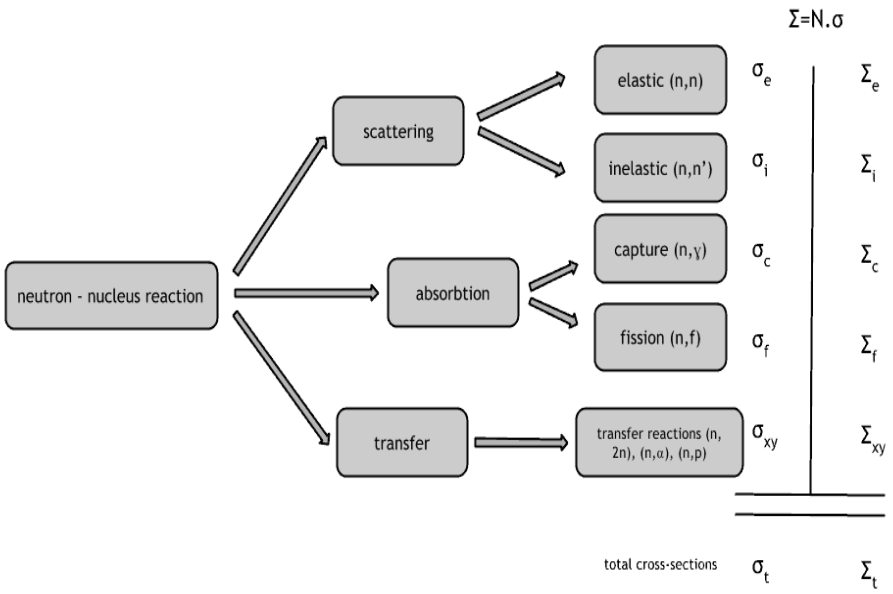
Baku State University

ABSTRACT

Neutrons have zero electrical charge and cannot directly cause ionization. Neutrons ionize matter only indirectly. For example, when neutrons strike the hydrogen nuclei, proton radiation (fast protons) results. This reaction is known as scattering. Neutrons can be also absorbed. Most absorption reactions result in the loss of a neutron coupled with the production of one or more gamma rays, since the resulting nucleus is usually unstable.

Neutrons are neutral particles, therefore they travel in straight lines, deviating from their path only when they actually collide with a nucleus to be scattered into a new direction or absorbed. Neither the electrons surrounding (atomic electron cloud) a nucleus nor the electric field caused by a positively charged nucleus affect a neutron's flight. In short, neutrons collide with nuclei, not with atoms. A very descriptive feature of the transmission of neutrons through bulk matter is the mean free path length (λ – lambda), which is the mean distance a neutron travels between interactions. It can be calculated from following equation:

$$\lambda = {}^{1}/_{\Sigma} \qquad (1)$$



Neutrons may interact with nuclei in one of the following ways: elastic scattering reaction, inelastic scattering reaction, neutron absorption, radioactive capture, nuclear fission, neutron emission, charged particle ejection.

Neutron cross-section. Typical cross-sections of fission material. Slowing down neutrons results in increase of probability of interaction (e.g. fission reaction). The extent to which neutrons interact with nuclei is described in terms of quantities known as cross-sections. Cross-sections are used to express the likelihood of particular interaction between an incident neutron and a target nucleus. It must be noted this likelihood do not depend on real target dimensions. In conjunction with the neutron flux, it enables the calculation of the reaction rate, for example, to derive the thermal power of a nuclear power plant. The standard unit for measuring the microscopic cross-section (σ-sigma) is the barn, which is equal to 10-28 m2. This unit is very small, therefore barns (abbreviated as “b”) are commonly used. The microscopic cross-section can be interpreted as the effective “target area” that a nucleus interacts with an incident neutron.

A macroscopic cross-section is derived from microscopic and the material density:

$$\Sigma = \sigma * \mathrm{N} \tag{2}$$

Here σ, which has units of m2, is referred to as the microscopic cross-section. Since the units of N (nuclei density) are nuclei/m3, the macroscopic cross-section Σ have units of m-1, thus in fact is an incorrect name, because it is not a correct unit of cross-sections.

Neutron cross-sections constitute key parameters of nuclear fuel. Neutron cross-sections must be calculated for fresh fuel assemblies usually in two-Dimensional models of the fuel lattice.

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METAL KATKILI ZNO NANOYAPILARIN FOTOKATALİTİK ÖZELLİKLERİ

PHOTOCATALYTIC PROPERTIES OF METAL DOPED ZNO NANOSTRUCTURES

Abdullah GÖKTAŞ

Doç. Dr., Harran Üniversitesi Fen-Edebiyat Fakültesi Fizik Bölümü

(Sorumlu Yazar)

Sultan GÖKTAŞ

Dr. Öğrt., Harran Üniversitesi Fen Bilimleri Enstitüsü

ÖZET

ZnO geniş bant aralığına sahip önemli bir yarıiletken olup, optoelektronik, spintronik ve foto kataliz gibi çeşitli uygulamalarda çok fazla kullanılmaktadır. Bu yüzden yoğun ilgi görmektedir. Bununla beraber onun fiziksel ve kimyasal özelliklerinin metal katkılandırılmasıyla rahatlıkla değiştirilebilmesi, kimyasal kararlılığı ve çevre dostu olması araştırmacıların ilgisini daha da çekmektedir.

Atık suların temizlenmesi dünyada önemli problemlerden biridir. Bu problem bazı fotokatalizör nanoyapıların kullanılmasıyla çözülmeye çalışılmaktadır. ZnO de önemli bir fotokatalizör olduğundan onun fotokatalitik verimini arttırmak için yoğun çalışmalar yapılmaktadır. Bu yüzden bu çalışmada, ZnO ve metal katkılı ZnO nanoyapıların foto katalitik özellikleri araştırıldı. ZnO ve metal katkılı ZnO nanoyapıların fotokatalitik verimine etki eden parametreler tartışıldı. Bu parametrelerin başında kristal tane boyutları, yüzey morfolojisi, yasak band aralığı, metal katkı türü, kullanılan ışık kaynağı gelmektedir. Bununla beraber, kullanılan organik boyaların türü, konsantrasyonu ve fotokatalitik analiz için kullanılacak çözeltinin pH'ı önemli derecede fotokatalitik performansı etkilemektedir.

Fotokatalizör ZnO ve metal katkılı ZnO nanoyapıların hazırlanma teknikleri ve onların hazırlanma koşulları ve kullanılan öncül kimyasallar fotokatalizörün kristallenme kalitesini ve yüzey morfolojisini etkilemektedir. Bu yüzden bu çalışmada hazırlanan fotokatalizörlerin, fiziksel ve kimyasal üretim tekniklerideki kıyaslanarak araştırıldı.

Anahtar Kelimeler: Fotokatalizör, ZnO, Metal Katkılı ZnO, Fotokatalitik Verim, pH, Kristal Yüzey Morfolojisi

ABSTRACT

ZnO is one of the important semiconductors, having wide band gap energy and it has been widely used in various applications such as optoelectronic, spintronic and photocatalysis. Therefore, it gets intensive attraction. In addition to, it's environmentally friendly, chemical stability, and the modification its physical and chemical properties by metal doping easily make it more and more attractive for the researchers.

Cleaning wastewater is one of the important problems in the worldwide. This problem has been tried to be solved by using some nanostructured photocatalyst. Since ZnO is also an important photocatalyst, intensive studies are carried out to increase its photocatalytic efficiency. Therefore, in this study, photocatalytic properties of the ZnO and metal doped ZnO nanostructures were investigated. The parameters affecting the photocatalytic efficiency of ZnO and metal doped ZnO nanostructures were discussed. The main parameters are crystallite/grain size, surface morphology, forbidden band gap, metal dopant type, and the used light source. However, the type and concentration of organic dyes used and the pH of the solution to be used for photocatalytic analysis also significantly affect the photocatalytic performance.

The preparation techniques of the photocatalyst ZnO and metal doped ZnO nanostructures and their preparation conditions as well as the used precursor chemicals affect the crystallization quality and surface morphology of the photocatalyst were scrutinized. Therefore, the photocatalysts prepared in this study were compared and investigated in terms of the physical and chemical production techniques.

Keywords: Photocatalyst, ZnO, Metal Doped ZnO, Photocatalytic Efficiency, pH, Crystal Surface Morphology

SOL-JEL VE MAGNETRON PÜSKÜRTME TEKNİKLERİ İLE ÜRETİLEN FE KATKILI ZNO İNCE FİLMLERİNİN YAPISAL VE OPTİKSEL ÖZELLİKLERİ

STRUCTURAL AND OPTICAL PROPERTIES OF FE DOPED ZNO THIN FILMS DERIVED BY SOL-GEL AND MAGNETRON SPUTTERING

Abdullah GÖKTAŞ

Doç. Dr., Harran Üniversitesi Fen-Edebiyat Fakültesi Fizik Bölümü

(Sorumlu Yazar)

ÖZET

Bu çalışmada, % 0-2 Fe katkılı ZnO ince filmleri sol-jel ve magnetron tekniğiyle cam altlıklar üstünde 500 ºC'de üretildi. Üretilen filmlerin yapısal, yüzeysel ve optik özelliklerinin incelenmesi için x-ışını kırınım diffiraksiyonu (XRD), taramalı elektron mikroskobu (SEM), ultra-viyole görünür spektrofotometresi (UV-Vis) kullanıldı. Elde edilen sonuçlar filmlerin (002) kırınım düzleminde yönelip hekzagonal wurtzite yapıda kristallendiği ve polikristal doğaya sahip olduğu anlaşıldı. Magnetron püskütme ile üretilen filmlerin kristallenme kalitesi ve (002) kırınım düzleminde yönelim miktarının, sol-gel ile üretilenlerden daha yüksek olduğu gözlemlendi.

SEM analizleri, magnetron püskütme ile üretilen filmlerin yüzey morfolojisinin sol-gel ile üretilen filmlere göre daha homojen, yoğun ve pürüzsüz olduğunu gösterdi. SEM analizlerinden aynı zamanda tahmin edilen tane boyutlarının magnetron püskütme ile üretilen filmlerde daha büyük olduğu anlaşıldı. SEM'e bağlı enerji dağılımlı x-ışını (EDX) filmlerde Zn, Fe, ve O elementlerin var olduğunu ve kullanılan Fe miktarlarının başlangıçta kullanılan miktarla uyumlu olduğunu ispatladı.

UV-Vis ölçümleri tüm filmlerin optik geçirgenliğinin % 70'ın üstünde olduğunu ve Fe katkı oranıyla beraber değişim gösterdiğini ispatladı. Her iki tekniktede üretilen filmlerde katkı oranının artması ile soğurmanın arttığı ve yasak enerji band aralığının katkısız ZNO ince filmine göre azaldığı tespit edildi. Hesaplanan kırılma indeksi (*n*), sönüm katsayısı (k) ve dielektrik katsayısı Fe katkı oranına bağlı olarak değişim gösterdi.

Anahtar Kelimeler: Sol-jel, Magnetron Püskürtme, ZnO, Fe Katkılı ZnO, İnce Film, Kırılma İndeksi, Dielektrik Sabit

ABSTRACT

In this study, 0-2% Fe doped ZnO thin films were produced with sol-gel and magnetron techniques at 500 ºC on the glass substrates. X-ray diffraction (XRD), scanning electron microscope (SEM), and ultra-violet visible spectrophotometer (UV-Vis) were used to examine the structural, surface and optical properties of the produced films. The obtained results showed that the films were oriented in the (002) diffraction plane, crystallized in hexagonal wurtzite structure and had a polycrystalline nature. It was observed that the crystallization quality of the films produced by magnetron sputtering and the amount of orientation in the diffraction plane (002) were higher than those produced by sol-gel.

SEM analysis showed that the surface morphology of films produced by magnetron sputtering was more homogeneous, dense and smoother than films produced with sol-gel. It was also understood from the SEM analysis that the predicted particle sizes were larger in films produced by magnetron sputtering. It was also observed that Zn, Fe, and O elements exist in film samples by using energy dissipation x-ray (EDX) attached on the SEM tool and it proved that the amount of Fe used was compatible with the amount used initially.

UV-Vis measurements proved that the optical transmittance of all films is over 70% and it changes with the Fe doping rate. It was determined that with the increase in the doping rate in the films produced by both techniques, the absorption increased and the forbidden band gap energy decreased compared to the undoped ZnO thin film. Calculated refractive index (n), extinction coefficient (k) and dielectric coefficient varied depending on the Fe doping level.

Keywords: Sol-gel, Magnetron Sputtering, ZnO, Fe doped ZnO, Thin Film, Refractive Index, Dielectric Constant

INVESTIGATION OF THE EFFECTS OF ROYAL JELLY AGAINST PANCREAS DAMAGE WITH NF-κB AND TNF-ALPHA EXPRESSIONS

PANKREAS HASARINA KARŞI ARI SÜTÜ'NÜN ETKİLERİNİN NF-κB VE TNF-ALFA EKSPRESYONLARI İLE İNCELENMESİ

Ozlem GOK*[1]

[1]Res. Assist., Firat University, Faculty of Science, Department of Biology, Elazig, Turkey

***ORCID NO: 0000-0001-8521-6369**

Seda BEYAZ[2]

[2]PhD, Firat University, Faculty of Science, Department of Biology, Elazig, Turkey

ORCID NO: 0000-0003-0436-8112

Gozde PARLAK[3]

[3]PhD, Firat University, Faculty of Science, Department of Biology, Elazig, Turkey

ORCID NO: 0000-0002-8982-887X

Muhammed Ismail CAN[4]

[4]Res. Assist., Inonu University, Faculty of Science, Department of Biology, Elazig, Turkey

ORCID NO: 0000-0002-0118-2278

Abdullah ASLAN[5]

[5]Assoc. Prof., Firat University, Faculty of Science, Department of Biology-Molecular Biology and Genetics Program, Elazig, Turkey

ORCID NO: 0000-0002-6243-4221

ABSTRACT

Royal jelly is a viscous substance of whitish yellow color and is the main food source for queen bees and larvae. In addition to its high effective antioxidant capacity and free radical scavenging properties, it has many physiological properties such as antitumor, antiallergic and anti-inflammatory. In this study, the protective effect of Royal jelly on pancreatic damage was investigated in male Wistar albino rats. The animal experiments section of this study, F.U. with the permission of the Animal Experiments Ethics Committee, dated 02.09.2020 and numbered 2020/12, F.U. It was conducted in the Experimental Animal Research Center (FUDAM). 42 Wistar albino male rats (n = 42, 8 weeks old) were used in the study. Groups: (i) Control Group: Group fed with standard diet; (ii) Royal Jelly Group: Standard diet + Royal jelly (100 mg / kg CA, gavage); (iii) Fluoride-50 Group: Standard diet + Fluoride (50 mg / kg CA, drinking water); (iv) Fluoride-100 Group: Standard diet + Fluoride (100 mg / kg CA, drinking water); (v) Fluoride-50 + Royal Jelly Group: Standard diet + Fluoride (50 mg / kg CA, drinking water) + Royal jelly (100 mg / kg CA, gavage) (vi) Fluoride-100 + Royal Jelly Group: Standard diet + Fluoride (100 mg / kg CA, drinking water) + Royal jelly (100 mg / kg CA, gavage). The rats were decapitated at the end of 8 weeks and their pancreatic tissues were examined. Expression levels of NF-κB and TNF-alpha proteins in pancreatic tissue were determined by western blotting technique. Royal jelly with application, it was observed that NF-κB and TNF-alpha protein expression levels decreased in the Fluoride-50 + Royal jelly and Fluoride-100 + Royal jelly group compared to the Fluoride-50 and Fluoride-100 groups. In line with the data obtained as a result of this study, we can say that royal jelly has protective effects in the treatment of pancreatic tissue

damage. This study was supported by Fırat University Scientific Research Projects Unit (FUBAP) with project number FF.19.16.

Keywords: Fluoride, NF-κB, Pancreatic damage, Royal jelly, TNF-alpha

ÖZET

Arı sütü, beyazımsı sarı renkte kıvamlı bir madde olup ana arı ve larvalar için ana besin kaynağıdır. Yüksek etkili antioksidan kapasitesi ve serbest radikal temizleme özelliğinin yanı sıra antitümör, antialerjik ve antienflamasyon gibi birçok fizyolojik özelliği bulunmaktadır. Bu çalışmada, Wistar albino erkek sıçanlarda arı sütünün pankreas hasarı üzerindeki koruyucu etkisi araştırılmıştır. Bu çalışmanın hayvan deneyleri bölümü, F.Ü. Hayvan Deneyleri Etik Kurulu'nun 02.09.2020 tarihli ve 2020/12 sayılı izni ile F.Ü. Deney Hayvanları Araştırma Merkezi'nde (FÜDAM) yürütülmüştür. Çalışmada 42 Wistar albino erkek sıçan (n = 42, 8 haftalık) kullanılmıştır. Gruplar: (i) Kontrol Grubu: Standart diyet ile beslenen grup; (ii) Arı Sütü Grubu: Standart diyet + Arı sütü (100 mg/kg CA, gavaj); (iii) Florür-50 Grubu: Standart diyet + Florür (50 mg/kg CA, içme suyu); (iv) Florür-100 Grubu: Standart diyet + Florür (100 mg/kg CA, içme suyu); (v) Florür-50 + Arı sütü Grubu: Standart diyet + Florür (50 mg/kg CA, içme suyu) + Arı sütü (100 mg/kg CA, gavaj) (vi) Florür-100 + Arı sütü Grubu: Standart diyet + Florür (100 mg/kg CA, içme suyu) + Arı sütü (100 mg/kg CA, gavaj). Sıçanlar 8 hafta sonunda dekapite edilerek pankreas dokuları alınarak incelenmiştir. Pankreas dokusunda NF-κB ve TNF-alfa proteinlerinin ekspresyon düzeyleri western blotlama tekniğiyle belirlenmiştir. Arı sütü uygulaması ile Florür-50 + Arı sütü ve Florür-100 + Arı sütü grubunda NF-κB ve TNF-alfa protein ekspresyon düzeyleri Florür-50 ve Florür-100 grubuna kıyasla düştüğü gözlenmiştir. Bu çalışma sonucunda elde edilen veriler doğrultusunda arı sütü'nün pankreas doku hasarı tedavisinde koruyucu etkileri olduğunu söyleyebiliriz. Bu çalışma Fırat Üniversitesi Bilimsel Araştırma Projeleri Birimi (FÜBAP) tarafından FF.19.16 proje numarası ile desteklenmiştir.

Anahtar Kelimeler: Arı sütü, Florür, NF-κB, Pankreas hasarı, TNF-alfa

BIOCHEMICAL AND MOLECULAR BIOLOGICAL INVESTIGATIONS OF THE PROTECTIVE EFFECTS OF FULLEREN C60 NANOPARTICLE AGAINST BREAST CANCER FORMED WITH DMBA (7,12-DIMETHYLBENZ [A] ANTHRACINE) IN RATS

SIÇANLARDA DMBA (7,12-DİMETİLBENZ [A] ANTRASEN) İLE OLUŞTURULAN MEME KANSERİNE KARŞI FULLEREN C60 NANOPARTİKÜLÜNÜN KORUYUCU ETKİLERİNİN BİYOKİMYASAL VE MOLEKÜLER BIYOLOJİK ANALİZLERLE İNCELENMESİ

Seda Beyaz[1*]

[1*] PhD, Firat University, Faculty of Science, Department of Biology, Elazig, Turkey

ORCID NO: 0000-0003-0436-8112

Abdullah Aslan[2]

[2] Assoc. Prof., Firat University, Faculty of Science, Department of Biology-Molecular Biology and Genetics Program, Elazig, Turkey

ORCID NO: 0000-0002-6243-4221

Can Ali Agca[3]

[3]Assoc. Prof., Bingol University, Faculty of Science, Department of Molecular Biology and Genetics, Bingol, TURKEY

ORCID NO: 0000-0002-0244-3767

Ozlem Gok[4]

[4] Res. Assist., Firat University, Faculty of Science, Department of Biology, Elazig, Turkey

ORCID NO: 0000-0001-8521-6369

Ibrahim Hanifi Ozercan[5]

[5] Prof. Dr., Fırat University, Faculty of Medicine, Department of Surgical Medical Sciences and Pathology, Elazig, TURKEY

ORCID NO: 0000-0002-8781-8838

ABSTRACT

Fulleren C60 is a powerful free radical scavenger and is responsible for reducing oxidative stress in biological systems. It has anti-inflammatory, anti-cancer and anti-oxidative properties. In this study, the therapeutic effect of C60 nanoparticle against breast cancer caused by DMBA (7,12-dimethylbenz [a] anthracene) in Wistar albino female rats were investigated. The animal experiments part of this study was conducted in the F.U Experimental Animal Research Center (FUDAM) with the permission of the F.U Animal Experiments Ethics Committee dated 13.02.2019 and numbered 2019/03.

In this study, 60 Wistar albino female rats (n = 60, 8 weeks old) were used. These rats were divided into 4 groups and each group included 15 rats. Groups: (i) Control Group: Group fed with standard diet; (ii) Group C60: C60 (1.7 mg/kg CA, oral gavage); (iii) DMBA Group: DMBA (45 ml/kg CA); (iv) C60 and DMBA Given Group: C60 (1.7 ml/kg CA) and DMBA (45 mg/kg CA, oral gavage) group. The rats were decapitated after 16 weeks and their breast tissues were taken and examined. Lipid peroxidation malondialdehyde (MDA) analysis, catalase activity (CAT) and glutathione (GSH) in breast tissue were determined by spectrophotometer. Total protein measurements were carried out according to the Lowry

method. Cell viability was determined by the WST-1 (2-(4-Iodophenyl)-3-(4-nitrophenyl)-5-(2,4-disulphophenyl)-2H-tetrazolium monosodium salt) test. Compared to the DMBA-treated group, MDA levels decreased in the C60-treated groups, while GSH levels and CAT activities increased. As a result of the WST-1 intracellular cytotoxicity test, it was determined that there was no loss of cell viability in the C60 groups.
According to the results obtained from this study, it has been concluded that the C60 nanoparticle will bring new perspectives to breast cancer treatment and make significant contributions to the production of promising drugs for the treatment of the disease. This work was supported by Firat University Scientific Research Projects Unit (FUBAP) with FF. 20.07 project number.

Keywords: Apoptosis, Breast cancer, DMBA, Fulleren C_{60}

ÖZET

Fulleren C60, güçlü bir serbest radikal temizleyicisi olup biyolojik sistemlerde oksidatif stresin azaltılmasında görevlidirler. Fulleren C60 'ı önemli kılan antikanser, antiinflamatuar ve antioksidatif özelliklere sahip olmasıdır. Bu çalışmada, Wistar albino dişi sıçanlarda DMBA (7,12-dimetilbenz [a] antrasen) kaynaklı meme kanserine karşı C60 nanopatikülünün tedavi edici etkisi araştırılmıştır. Bu çalışmanın hayvan deneyleri bölümü, F.Ü. Hayvan Deneyleri Etik Kurulu'nun 13.02.2019 tarihli ve 2019/03 sayılı izni ile F.Ü. Deney Hayvanları Araştırma Merkezi'nde (FÜDAM) yürütülmüştür.

Bu çalışmada 60 Wistar albino dişi sıçan (n = 60, 8 haftalık) kullanılmıştır. Bu sıçanlar 4 gruba ayrılmış ve her grupta 15 sıçan yer almıştır. Gruplar: (i) Kontrol Grubu: Standart diyet ile beslenen grup; (ii) C60 Grubu: C60 (1,7 mg/kg CA, oral gavaj) verilen grup; (iii) DMBA Grubu: DMBA (45 ml/kg CA) verilen grup; (iv) C60 ve DMBA Verilen Grup: C60 (1,7 ml/kg CA) ve DMBA (45 mg/kg CA, oral gavaj) verilen grup. Sıçanlar 16 hafta sonra dekapite edilmiş ve meme dokuları alınarak incelenmiştir. Meme dokusunda lipit peroksidasyonu malondialdehit (MDA), katalaz aktivitesi (CAT) ve glutatyon (GSH) düzeyleri spektrofotometre ile belirlenmiştir. Total protein ölçümleri Lowry metotuna göre gerçekleştirilmiştir. Hücre canlılığı WST-1 (2-(4-Iodofenil)- 3-(4-nitrofenil)-5-(2,4-disulfofenil)-2H-tetrazolium, monosodyum tuzu) testi ile belirlenmiştir. DMBA verilen gruba kıyasla, C60 verilen gruplarda MDA seviyeleri azalış, GSH seviyesi ve CAT aktivitelerinde ise artış gözlenmiştir. Hücre içi sitotoksisiteyi belirlemek için gerçekleştirilen WST-1 testi sonucunda C60 verilen gruplarda hücre canlılığı kaybının olmadığı belirlenmiştir.

Bu çalışmadan elde edilen sonuçlara göre, C60 nanopartikülünün meme kanseri tedavisine yeni bakış açıları kazandıracağı ve hastalığın tedavisi için umut verici ilaçların üretilebilmesine önemli katkılar sunacağı kanısına varılmıştır. Bu çalışma Fırat Üniversitesi Bilimsel Araştırma Projeleri Birimi (FÜBAP) tarafından FF. 20.07 proje numarası ile desteklenmiştir.

Anahtar Kelimeler: Apoptoz, Meme kanseri, DMBA, Fulleren C_{60}

TERAPÖTİK REJİME UYUMSUZLUK VE HASTALIK ALGISI

NONCOMLIANCE TO THERAPEUTIC REGIMEN AND ILLNESS PERCEPTION

Meryem OTU

Doktora öğrencisi, Sivas Cumhuriyet Üniversitesi Sağlık Bilimleri Enstitüsü Hemşirelik Anabilim Dalı

(Sorumlu yazar)

Şerife KARAGÖZOĞLU

Prof. Dr., Sivas Cumhuriyet Üniversitesi Sağlık Bilimleri Fakültesi Hemşirelik Esasları Anabilim Dalı

ÖZET

Terapötik rejime uyum, yalnızca doğru ilaç kullanımına uyumla sınırlı kalmaz, bununla birlikte diyet, egzersiz veya yaşam tarzı değişikliklerine gösterilen uyumu da içermektedir. Terapötik rejime uyumun amacı ise, ilgili hastalarda belirli istenen sonuçlara ulaşmaktır. Hastanın terapötik rejime uyumsuzluğu ise, hastalığın yönetimi açısından da ciddi ve zararlı sonuçlar doğurabilmektedir. Bununla birlikte, hastalar uyumsuzsa sağlık profesyonellerinin çabalarına rağmen, istenen sonuçlar elde edilemeyebilir. Hastaların kendi hastalıkları hakkında sahip olduğu algılar terapötik rejimlere uyumun önemli bir belirleyicisidir ve buna göre tedavi davranışlarını kendi kendilerine düzenlediklerini bildirilmiştir. Hastalık algısı, hastanın tıbbi bir duruma ilişkin bilişsel değerlendirmesiyle, bunun olası sonuçlarına ilişkin kişisel anlayışıdır ve yaşam kalitesi üzerinde belirleyici bir unsurudur.

Hastalarda oluşan hastalık algısının anlaşılabilmesi için Leventhal ve arkadaşlarının geliştirdiği Hastalık Algısı Modeli önemli bir yere sahiptir. Bireylerin hastalık algılarının iyileştirilmesi ve terapötik rejime uyumun arttırılması da terapötik eğitim ile mümkün olabilmektedir. Hastalık algısını hedefleyen terapötik eğitim müdahalelerin, hastalarda sağlık sonuçlarını iyileştirmeye yönelik çok yönlü yaklaşımların bir parçası olması gerektiği vurgulanmaktadır. Sağlık ekibinin vazgeçilmez üyeleri olan hemşireler hastaların yaşam tarzı ve sağlıkla ilgili sonuçlarını iyileştirmek için hastalık algılarını da dikkate alarak eğitim programları geliştirmeli ve uygulamalıdır. Bu yaklaşım, hemşirelerin daha etkili bir bakım sağlamasına da olanak sağlayacaktır. Bu yüzden hemşireler için bakımı planlarken hastaların hastalık algısını ve bu algıyı etkileyen faktörlerin belirlenmesi önemlidir.

Anahtar Kelimeler: Terapötik Rejime Uyumsuzluk, Hastalık Algısı, Terapötik Eğitim

ABSTRACT

Compliance with the therapeutic regimen includes not only compliance with correct medication use, but also compliance with diet, exercise, or lifestyle changes. The purpose of adherence to the therapeutic regimen is to achieve certain desired results in the patients concerned. The patient's non-compliance with the therapeutic regimen can have serious and harmful consequences in terms of the management of the disease. However, if patients are incompatible, results may not be achieved, despite the efforts of healthcare professionals. Patients' perceptions of their own illness are an important determinant of adherence to therapeutic regimens, and it has been reported that they self-regulate their treatment behaviors accordingly. Illness perception is the patient's cognitive assessment of a medical condition, as well as personal understanding of its possible consequences, and is a determining factor on quality of life.

The Illness Perception Model developed by Leventhal et al. Has an important place in

understanding the perception of disease in patients. Improving the illness perceptions of individuals and increasing compliance with the therapeutic regimen can also be possible with therapeutic education. It is emphasized that therapeutic educational interventions targeting illness perception should be a part of multifaceted approaches to improving health outcomes in patients. Nurses, who are indispensable members of the healthcare team, should develop and implement training programs in order to improve patients' lifestyle and health-related outcomes, taking into account the illness perceptions. This approach will also allow nurses to provide more effective care. Therefore, when planning care for nurses, it is important to determine patients' perception of illness and the factors affecting this perception.

Keywords: Noncompliance with Therapeutic Regime, Disease Perception, Therapeutic Education

FARKLI DİYET ÖRÜNTÜLERİNİN POSTPRANDİYAL DİNLENME ENERJİ HARCAMASI ÜZERİNE ETKİLERİNİN DEĞERLENDİRİLMESİ

EVALUATION OF THE EFFECTS OF DIFFERENT DIET PATTERNS ON POSTPRANDIAL RESTING ENERGY EXPENDITURE

Tuğçe BULMUŞ TÜCCAR

(Sorumlu Yazar)

Öğretim Görevlisi, Yüksek İhtisas Üniversitesi Sağlık Bilimleri Fakültesi Beslenme ve Diyetetik Bölümü

Gamze AKBULUT

Prof. Dr., Gazi Üniversitesi, Sağlık Bilimleri Fakültesi Beslenme ve Diyetetik Bölümü

ÖZET

Bu çalışmada Akdeniz diyeti ve Batı tarzı diyete uygun öğün modellerinin postprandiyal dinlenme enerji harcaması üzerine etkisinin incelenmesi amaçlanmıştır. Çalışma, randomize çapraz kontrollü olarak planlanmış ve yürütülmüştür. Çalışma, dahil edilme kriterlerine uygun, sağlıklı, 19-45 yaş aralığında, menopoza girmemiş, normal vücut ağırlığında olan (BKİ=20-24,9 kg/m²) 11 gönüllü kadın birey üzerinde yürütülmüştür. Bireylerin demografik özellikleri, beslenme alışkanlıkları ve fiziksel aktivite düzeyleri araştırmacılar tarafından hazırlanan anket ile sorgulanmıştır. Bireylerin antropometrik ölçümleri (vücut ağırlığı, boy uzunluğu) alınmış ve vücut bileşimi analizi yapılmıştır. Çalışmaya katılan her bireye randomize olarak, 12 saat açlık sonrası, içerikleri araştırmacılar tarafından standardize edilmiş Akdeniz diyeti ve Batı tarzı diyete uygun test öğünleri aralarında iki hafta arınma periyodu bırakılarak verilmiştir. Bireylerin dinlenme enerji harcaması ölçümü, indirekt kalorimetre ile test öğünü tüketimi öncesi (0.dk) ve postprandiyal 30., 120. ve 240. dakikalarda yapılmıştır. Bireylerin başlangıç düzeyine (0.dk) kıyasla, Akdeniz diyetine uygun öğün tüketimi sonrası dinlenme enerji harcamasındaki postprandiyal fark (30., 120. ve 240. dakikalarda), Batı tarzı öğün tüketimine (30., 120. ve 240. dakikalar) kıyasla anlamlı derecede yüksek bulunmuştur ($p<0,05$). Sonuç olarak Akdeniz diyetine uygun beslenmenin dinlenme enerji harcamasına katkısının daha fazla olduğu gözlenmiştir. Farklı öğün modellerin postprandiyal dinlenme enerji harcaması üzerine etkinliklerinin doğrulanması için daha uzun sürelerde değerlendirme yapılan daha geniş örneklemli çalışmalara ihtiyaç vardır.

Anahtar Kelimeler: Postprandiyal durum, Akdeniz diyeti, Batı tarzı diyet, dinlenme enerji harcaması

ABSTRACT

In this study, it was aimed to examine the effects of different meal models typical for the Mediterranean diet and Western diet on postprandial resting energy expenditure. The study was designed and carried out as a crossover randomized controlled trial. Eleven healthy women, aged 19-45, nonmenopausal, with normal body weight (BMI = 20-24.9 kg/m²) participated to the study. The demographic characteristics nutritional habits and physical activity levels of the individuals were assessed with a questionnaire prepared by the researchers. Anthropometric measurements (body weight, height) of the individuals were taken and body composition analysis was performed. All of the participants in the study was randomly given standardized test meals typical for the Mediterranean diet and Western style diet after 12 hours of fasting, with a two-week washout period between. Resting energy expenditure measurements of the

individuals were made with indirect calorimetry before the test meal consumption (time 0) and at the 30th, 120th and 240th minutes postprandially. The postprandial (30th, 120th, and 240th minutes) resting energy expenditure was found to be significantly higher after Mediterranean diet consumption, compared to Western meal meal consumption ($p < 0.05$). As a result, it was observed that nutrition in accordance with the Mediterranean diet contributes more to resting energy expenditure. Studies with larger number of participants that are evaluated over longer periods of time are needed to confirm the effectiveness of different meal models on postprandial resting energy expenditure.

Keywords: Postprandial status, Mediterranean diet, Western diet, resting energy expenditure

KOŞİNİL ÖZÜTLERİNİN DNA İLE ETKİLEŞİMİNİN AGAROZ JEL ELEKTROFOREZ YÖNTEMİNDE ARAŞTIRILMASI

INVESTIGATION OF THE INTERACTION OF COCHINEAL EXTRACT WITH DNA IN AGAROSE GEL ELECTROPHORESIS METHOD

Nilgün KUŞÇULU

Kayseri Üniversitesi Mustafa Çıkrıkçıoğlu MYO, Kimya Teknolojisi Programı, Kayseri, Türkiye

İlyas KILINÇER

Erciyes Üniversitesi, Genkök Araştırma Merkezi, Bitki Biyoteknolojisi Bölümü, Kayseri, Türkiye

ÖZET

Doğal boya kaynağı olarak çeşitli bitkiler, böcekler ve mineraller uzun zamandır kullanılmaktadır. Bu kaynaklardan boyarmadde izolasyonu zor olduğu için genellikle özütleri kullanılmaktadır. Renkli özütlerden daha çok tekstil, gıda ve ilaç alanlarında son zamanlarda da histolojik boya kaynağı olarak yararlanılmaktadır. Bu çalışmada karmin kırmızı boyarmaddesi içeren koşinil böceği boya kaynağı olarak kullanılmıştır. Kayısı yapraklarından izole edilen DNA molekülü ile özüt etidyum bromür içeren agaroz jelde 80 voltta 1 saat elektroforez yapılmıştır. Jelin UV görüntüsünde bağlanma durumu incelenmiş ve Koşinil böcek yapısında çok miktarda bulunan karmin boyarmaddesinin DNA ile etkileştiği tespit edilmiştir. Özüt maddesi DNA'nın Etidyum bromidle yaptığı etkileşimi engellemiş böylece DNA daha az parlak görülmüştür. Bu durum böcekten elde edilen doğal, çevre dostu özütün genetik çalışmalarda ve DNA işaretleme durumlarında kullanılabileceğini ortaya koymuştur. DNA molekülü sadece hücrelerin çekirdeklerinde yer aldığı için, böcek özütü Hematoksilen gibi çekirdek boyası olarak tıbbi laboratuvarlarda alternatif doğal boya kaynağı olarak kullanılabilir.

Anahtar Kelimeler: DNA, Etidyum bromid, Karmin, Koşinil böceği, elektroforez
Bilgilendirme: Bu çalışma, Kayseri Üniversitesi araştırma fonu tarafından TSA-2020-1028 nolu proje ile desteklenmektedir.

ABSTRACT

Various plants, insects and minerals have long been used as a source of natural dyes. Since dye isolation from these sources is difficult, their extracts are generally used. More recently, colored extracts are used as a ıl dye in the fields of textile, food and medicine. In this study, cochineal (*Dactylopius coccus)* insect containing carmine red dye was used as dye source. With the DNA molecule isolated from the apricot fruit, the extract was electrophoresed for 1 hour at 80 volts in agarose gel containing ethidium bromide. The binding state of the gel was examined in the UV image and it was determined that the carmine dye, which is present in large amounts in the cochinyl insect structure, interacts with the DNA. The extract material prevented the interaction of the DNA with Ethidium bromide, so the DNA was seen less bright. This situation revealed that the natural, environmentally friendly extract obtained from the insect can be used in genetic studies and DNA labeling situations. Since the DNA molecule is found only in the nuclei of cells, insect extract can be used as a nucleus dye, such as Hematoxylin, as an alternative natural dye source in medical laboratories.

Keywords: DNA, Ethidium bromide, Carmine, Cochineal insect, electrophoresis
Acknowledgment: This study was supported by the Research Fund of Kayseri University with Project Number: TSA-2020-1028

ANTICORROSION BEHAVIOUR OF POLY(N-ETHYLANILINE) FILM ON ZNFE PLATED CARBON STEEL

Abdurrahman Akdag

Harran University, Vocational School of Health Services, Turkey

ORCID ID: 0000-0001-5292-8001

ABSTARACT

Poly(N-methylaniline) film was synthesized with cyclic voltammetry technique from 0.02 M N-ethylaniline containing 0.20 M sodium oxalate solution on ZnFe plated carbon steel electrode. Poly(N-methylaniline) film characterized by linear sweep voltametry, AC impedance spectroscopy, anodic polarization and open circiut potential-time curves. The results showed that poly(N-ethylaniline) film provided barrier property on ZnFe coating in early times but it has lost effectiveness in long exposure times.

Keywords: Poly(N-ethylaniline), carbon steel, corrosion

POLY(ANILINE-CO-O-ANISIDINE-N-METHYLPYRROLE)-TIO_2 NANOCOPOSITE COATING ON CARBON STEEL

Abdurrahman Akdag

Harran University, Vocational School of Health Services, Turkey

ORCID ID: 0000-0001-5292-8001

ABSTRACT

Poly(aniline-co-o-anisidine-N-methylpyrrole)-TiO_2 nanocomposite was synthesized with cyclic voltammetry technique from 0.05 M aniline + 0.05 M o-anisidine + 0.05 M N-methylpyrrole + 0.1 g/L TiO_2 containing 0.30 M oxalic acid solution. Poly(aniline-co-o-anisidine-N-methylpyrrole)-TiO_2 film characterized, AC impedance spectroscopy and anodic polarization curves. The Corrosion test results showed that Poly(aniline-co-o-anisidine-N-methylpyrrole)-TiO_2 nanocomposite exhibited significant barrier property against the attack of corrosive agents.

Keywords: Poly(aniline-co-o-anisidine-N-methylpyrrole), TiO_2, impedance

HISTORY OF OUR WORKING ON DEOXY-SUGAR - DEVELOPING TECHNOLOGY THAT CAN TRANSLATE TO CLINIC

Muhammad Yar[a,*]
[a]Interdisciplinary Research Center in Biomedical Materials (IRCBM), COMSATS University Islamabad Lahore Campus, Lahore,54000, Pakistan

ABSTRACT

To develop an effective, safe and low-cost wound dressing to stimulate angiogenesis. Angiogenesis is an absolute requirement for wound healing. With extensive burns and diabetic ulcers neovascularization is very difficult to acheive due to the loss of blood vessels (with burns) or damage to blood vessels (in diabetes). Research has shown that growth factors stimulate endothelial cells to migrate, proliferate and form new blood vessels. However, the most commonly used proangiogenic growth factor-vascular endothelial growth factor (VEGF) while central to angiogenesis *in vivo* has not proven an effective therapy when delivered directly to wound beds. Recombinant VEGF and its relatively poor stability make it unlikely to be adopted by countries lacking financial resources for advanced wound healing biomaterials. Also, very high local levels of VEGF have been found to lead to the sort of vasculature associated with tumours. In the body VEGF is produced and released in a highly regulated manner.

In the current study we explored the ability of D-sugar a simple small organic molecule to stimulate new blood vessels. This D-sugar can be loaded into a number of clinically acceptable carriers. These materials were tested in the chick chorionic allantoic membrane (CAM) assay to investigate their role in angiogenesis and these were then tested on a full thickness wound model in rats. Sugar loaded materials showed a strong pro-angiogenic activity in the CAM assay and excellent wound healing properties in rats.

The proangiogenic activity of this sugar may be due to indirect activation of the VEGF angiogenic pathway –this needs further investigation. However, its potency and stability are extremely promising and a biotechnology company, Cannenta has now been established to bring affordable, effective advanced wound care products to emerging markets around the world.

Key words: angiogenesis, biomaterials, tissue engineering, chronic ulcer and burn wounds

SYNTHESIS AND CHARACTERIZATION OF BINARY COMPOSITE OF ZnO-TiO_2 FOR THE PHOTODEGRADATION OF METHYL ORANGE

Muhammad UMAIR UR REHMAN

Department of Chemistry, Government College University Faisalabad Pakistan

ORCID ID: 0000-0002-4816-566X

Dr. Muhammad SAEED

Department of Chemistry, Government College University Faisalabad Pakistan

ORCID ID: 0000-0002-8759-6948

ABSTRACT

Photocatalysis is one of the techniques used for the eradication of organic pollutants from wastewater. In this study, ZnO-TiO_2 binary composite was prepared by wet impregnation method. Zinc Nitrate hexahydrate Zn $(NO3)_2.6H_2O$ and Titanium oxide TiO_2 were used as precursor materials for synthesis of composite. Impregnation method was used to enhance the photocatalytic activity of ZnO-TiO_2 composite, by using UV radiation which was used for the photodegradation of different organic pollutants such as methyl orange. The effect of various parameters such as temperature, concentration etc were analysed on photodegradation of methyl orange. 1:1 ratio of TiO_2-ZnO used in the synthesis of binary composite. 60 to 90% methyl orange applied on the composite for photodegradation at the temperature of 40^0C for the 120 minutes. ZnO-TiO_2 followed the pseudo first order kinetic towards photodegradation of methyl orange. The composite characterized by using different advanced spectral techniques including XRD,SEM,EDX which showed that the binary composite ZnO-TiO_2 have greater photocatalytic performance for degradation of methyl orange as compared to ZnO and TiO_2 alone.

Keywords: Methyl orange, Degradation, kinetic study

CLAY CERAMIC FILTER FOR WATER TREATMENT

Enyew Amare Zereffa

Chemistry Program, School of Applied Natural Science, Adama Science and Technology University, Ethiopia

ABSTRACT

Water is basic in life. Clean water is the key to a healthy society. A billion cases of diarrhea occur worldwide each year that result in million deaths. Ethiopia is facing the challenge of safe water coverage in rural and urban. The communities in the rift valley are also highly affected by fluorosis because of the high concentration of fluoride in drinking water. Inorganic ceramic is receiving more attention in recent time due to their unique characteristics which include different pore structures and content, hydrophilic surfaces, high chemical, thermal and mechanical stabilities which offer avenues for application in water treatment. The aim of this work was to develop a ceramic water filter with a good flow rate, which is capable to remove chemicals as well as microbial contaminants, by investigating the effect of altering specific design variables. Ceramic water filters were developed from different ratios of local raw materials: clay, sawdust, grog, with and without bone chars and sintered in (800-1000^{o}C) temperature at different intervals for 6hrs. The developed ceramic filters were characterized with FE-SEM, EDX, XRD, pH meter, BET and FT-IR. The flow rate, porosity, conductivity, pH of filtered water and the removal efficiencies (microbial, water hardness agent's, fluoride, nitrite, iron, and turbidity) were analyzed. The ceramic filters with 25-35% sawdust, 50-60% clay and 15% grog that sintered in the temperature range of 900-950^{o}C showed better flow rate (1.5-2.5 L/h), E.coli removal efficiency is greater than 99%. The pH, conductivity and other water quality parameters of the filtrate are in WHO standard. The average total porosity, BET surface area and average pore diameter determined for C900-50-15-35 ceramic filter were 36%, 6.183 m^2/g, and 4.83 nm respectively. .Field emission scanning electron microscopy (FESEM) revealed the porous nature of sintered filter elements with an average pore size of 5 nm.

Keywords: Ceramic filter, sintering, Indicators microorganism, microstructure, flow rate

IN-SILICO DESIGN OF NEW A-GLUCOSIDASE INHIBITORS THROUGH 3D-QSAR STUDY, MOLECULAR DOCKING MODELING AND ADMET ANALYSIS

Ayoub Khaldan[1], Soukaina Bouamrane[1], Reda El-mernissi[1], Abdelouahid Sbai[1]*, Mohammed Bouachrine[1,2] and Tahar Lakhlifi[1]

[1]Molecular Chemistry and Natural Substances Laboratory, Faculty of Science, Moulay Ismail University of Meknes, Morocco

[2]EST Khenifra, Sultan Moulay Sliman University, Benimellal, Morocco

ABSTRACT

α-Glucosidase enzyme is a therapeutic target for diabetes mellitus and its inhibitors shown a crucial importance in the treatment of this disease. Twenty oxindole based oxadiazole derivatives were studied using 3D-QSAR and molecular docking approaches in order to develop new α-glucosidase inhibitors with important activity. The proposed CoMFA and CoMSIA models displayed important Q^2 values (0.544 and 0.605 respectively) and high R^2 values (0.977 and 0.991 respectively). The CoMFA and CoMSIA models were undergo an external validation in order to test its proficiency, the produced R^2test are 0.949 and 0.558, respectively. The contour maps molded by CoMFA and CoMSIA models have been exploited to identify the main moieties impacting (decreasing or increasing) the activity. These outcomes we guided to propose two oxindole based oxadiazole molecules with significant activity. In a similar vein, Molecular docking simulation was conducted to scrutinize the binding interactions between ligands and *α*-glucosidase receptor (PDB code: **3A4A**). Finally and importantly, ADMET properties were put into practice to assess the oral bioavailability of the newly proposed molecules and to know their toxicity.

Keywords: 3D-QSAR, Molecular docking, *α*-Glucosidase, ADMET

HIGH-PERFORMANCE ULTRAVIOLET PHOTODETECTOR BASED ON VERTICAL HYBRID STRUCTURE: GQD,TIO_2 AND PLASMONIC PDAG NANOPARTICLES

Shusen Lin[1], Rutuja Mandavkar[1], Rakesh Kulkarni[1], Sanchaya Pandit[1], Sundar Kunwar[1], Ming-Yu Li[2] and Jihoon Lee[1]*

[1] Department of Electronic Engineering, College of Electronics and Information, Kwangwoon University, Nowon-gu Seoul 01897, South Korea.

[2] School of Science, Wuhan University of Technology, Wuhan, Hubei 430070, China

ABSTRACT

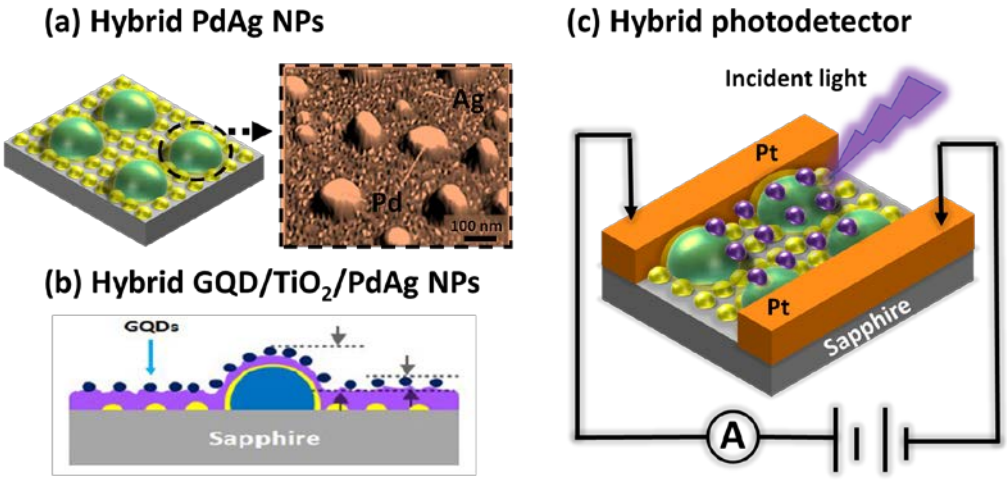

Figure 1: Diagram of hybrid PdAg NPs, hybrid GQDs/TiO_2/ PdAg template and photodetector.[6]

Along with numerous applications in the commercial and military field, ultraviolet (UV) photodetectors (PDs) have been a hot research point in the past decades. Those PDs owning the enhanced performance are highly demanded. Titanium dioxide (TiO_2) possessing a wide bandgap, superiors optical properties, excellent operation and thermal stability, is suitable for high-performance UV PDs fabrication.[1]. Besides, Graphene quantum dots (GQD), another promising material, also present high sensitivity in UV region ascribing from its sizable and tunable bandgap due to quantum confinement.[2] Meanwhile, metallic nanoparticles (NPs) can offer strong localized surface plasmonic resonance which is suitable for the design of optical devices,This so-called resonance mode, resulting in the improved optical performance can be altered by controlling the configuration of NPs such as elemental component and surface morphology. Especially, core-shell NPs including a different kind of elements generally exhibits the better performance than typical and fully alloyed structure.[3].Here, we have successfully achieved a hybrid GQD/TiO_2/PtAu nanostructure to detect the UV light on sapphire (0001) for the first time. The vertical structure consisting of GQDs, TiO_2 and hybrid PdAg NP, shows good absorption efficiency and enhancement in photoresponse. The as-prepared hybrid structure is achieved by three main steps. Firstly, for the hybrid PdAg NPs template, it is obtained by the solid state dewetting (SSD) process. The first SSD step is utilized to grow Pd NPs and hybrid PdAg NPs are obtained after Ag layer deposition by the second SSD process. Then, TiO_2 precursor is deposited by spin-coating, followed by the annleaing process to stabilize crystall structure. Finally, the hybrid structure is achieved after GQD

decoration in ambient as presented in Fig. 1

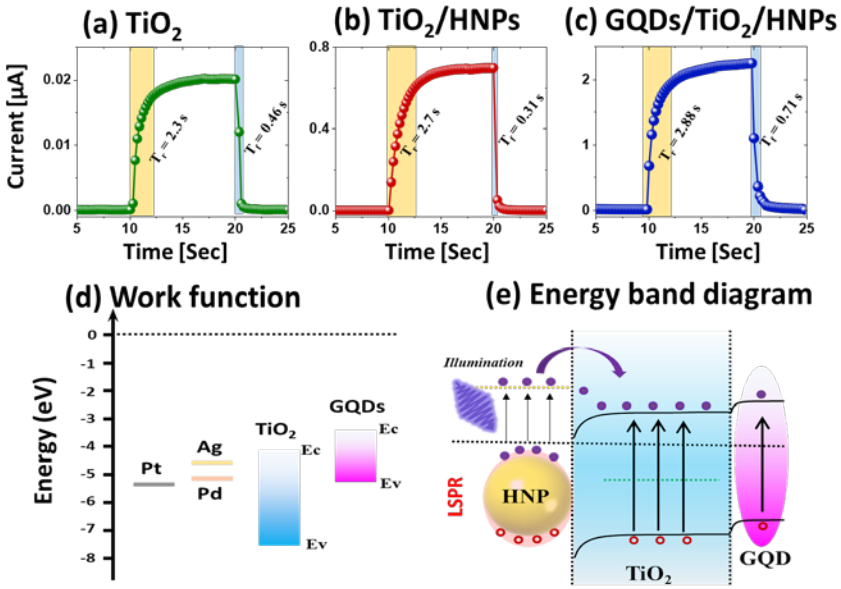

Figure 2: Photoresponse and energy band diagram of TiO_2, TiO_2/hybrid PdAg, GQDs/TiO_2/hybrid PdAg photodetector. [6]

The Photogeneration mechanism is illustrated by the band energy diagram as present in Fig. 2. [6]Due to the dipolar and quadrupolar resonance in PdAg NPs, a large number of hot electrons processing high energy are generated and will transfer to the TiO_2 layer through energy difference.[4] At the same time, GQDs can offer an additional conductive path and absorption sites in the channel area which can achieve further improvement after GQDs deposition. As for the TiO_2 channel path, it will collect the electrons from GQD and hybrid NPs as well as the separation of the electron-hole pairs inside resulting in the improvement of channel conductivity. Meanwhile, the scattered photons from PdAg NPs can be absorbed into TiO_2, which exhibits enhanced absorption efficiency.[5] The gradual improvement in photoresponse after each photoactive material deposition demonstrates the superiority of hybrid structure as shown in Fig. 2.

Acknowledgments

Financial support from the National Research Foundation of Korea (NRF) Grant funded by the Korean Government (MSIP) (No. NRF-2019R1A2C4069438 and NRF-2018R1A6A1A03025242) and in part by the research grant of Kwangwoon University in 2021 is gratefully acknowledged. Special appreciation to Ms. So Hee Kim from the Korea Institute of Science and Technology (KIST) for the SEM-EDX characterizations.

Author Contributions

Shusen Lin, Rutuja Mandavkar, Rakesh Kulkarni, Sanchaya Pandit, Sundar Kunwar, Ming-Yu Li and Jihoon Lee conceived of the proposed idea. Rutuja Mandavkar, Rakesh Kulkarni, Sanchaya Pandit, Sundar Kunwar, Ming-Yu Li performed the data computations. Sundar Kunwar, Ming-Yu Li and Jihoon Lee developed the theory and manuscript. All authors contributed to design and supervise the project.

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N,N-DİMETİLANİLİN TÜREVLERİNİN YENİ BİR YÖNTEM İLE *N*-DEMETİLASYONU

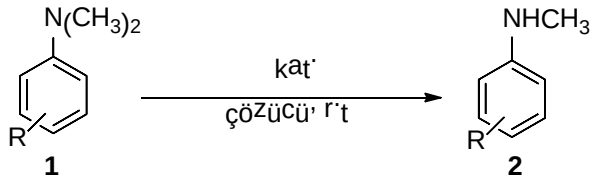
N-DEMETILATION OF *N,N*-DIMETHYLANILINE DERIVATIVES BY A NEW METHOD

Dr. Özgür YILMAZ

Department of Chemistry, Faculty of Arts and Sciences, Mersin University, 33343 Mersin, Turkey

ÖZET

Sekonder aminlerin sentezlenmesi için literatürde birçok yöntem bulunmasına rağmen, uygulanması kolay, temiz ve çevre dostu yeni yöntemlerin geliştirilmesi hala büyük önem taşımaktadır[1,2]. Çünkü sekonder aminler, başta ilaç kimyası olmak üzere birçok alanda kullanılan önemli bir molekül sınıfıdır[3]. Sekonder aminlerin sentezlenmesine olanak sağlamasının yanı sıra, *N,N*-dimetilanilin türevlerinin *N*-demetilasyonu biyolojik sistemde çok önemli bir tepkime türünü temsil etmektedir[4]. Bu tepkime tipi vücutta, zenobiyotikler olarak adlandırılan toksik moleküllerin giderilmesinde gerçekleşen ve sitokrom P450 olarak bilinen enzim tarafından katalizlenen bir ana basamak tepkimesidir[4]. Birçok ilaç etken molekülün tersiyer amin fonksiyonel grubunu içerdiği düşünüldüğünde, tersiyer amin gruplarının *N*-demetilasyonu için geliştirilen yeni ve etkili yöntemlerin büyük önem taşıyacağı açıktır.



Literatürde bu alanda geliştirilen çeşitli yöntemler mevcuttur[5,6]. Genellikle geçiş metali kompleksleri katalizör olarak kullanılmaktadır. Ancak, daha etkili ve çevre dostu yöntemlerin geliştirilmesi halen önemini korumakta ve çalışmalar, alanında etki faktörü yüksek dergilerde yer bulmaktadır. Sunulacak çalışma içerisinde, bu alanda kullanılabilecek ve *N*-demetilasyon işleminin yüksek verimlerle gerçekleştiği bir yöntem geliştirilmiştir. Bu yöntem ile sübstitüe *N,N*-dimetilanilin türevlerinin *N*-demetilasyonu başarılı bir şekilde yapılmıştır.

Anahtar Kelimeler: *N*-demetilasyon, tersiyer aminler, sekonder aminler

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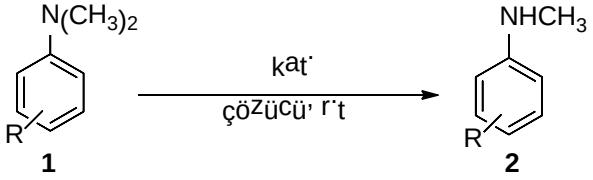
ABSTRACT

Although there are many methods in the literature for synthesizing secondary amines, it is still of great importance to develop new, easy-to-apply, clean and environmentally friendly methods[1,2]. Because secondary amines are an important class of molecules used in many fields, especially in pharmaceutical chemistry[3]. In addition to allowing the synthesis of secondary amines, *N*-demethylation of *N*,*N*-dimethylaniline derivatives represents a very important type of reaction in the biological system[4]. This type of reaction is a main step reaction in the body that takes place in the removal of toxic molecules called xenobiotics and catalyzed by an enzyme known as cytochrome P450[4]. Considering that many drug active molecules contain tertiary amine functional group, it is clear that new and effective methods developed for *N*-demethylation of tertiary amine groups will be of great importance.



There are various methods developed in this field in the literature[5,6]. Generally, transition metal complexes are used as catalysts. However, the development of more effective and environmentally friendly methods still maintains its importance and finds its place in journals with high impact factor in the field of studies. In the study, a method that can be used in this field and where *N*-demethylation process is carried out with high efficiency has been developed. With this method, *N*-demethylation of substituted *N*,*N*-dimethylaniline derivatives was successfully performed.

Keywords: *N*-demethylation, tertiary amines, secondary amines

HUWA-SAN TR50 BİYOSİTİNİN *Legionella pneumophila* BAKTERİLERİNE ETKİSİNİN FARKLI YÖNTEMLERLE BELİRLENMESİ

DETERMINATION OF THE EFFECT OF HUWA-SAN TR50 BIOCIDE ON *Legionella pneumophila* BACTERIA BY DIFFERENT METHODS

İpek ADA ALVER
Dr. Öğr. Üyesi, Fen Bilimleri Enstitüsü, İstanbul Üniversitesi, 34116, İstanbul, Türkiye
ORCID NO: 0000-0003-4787-8171
(Sorumlu Yazar)
AYTEN KİMİRAN
Prof. Dr., İstanbul Üniversitesi, Fen Fakültesi, Biyoloji Bölümü, Temel ve Endüstriyel Mikrobiyoloji Programı, 34134, İstanbul, Türkiye
ORCID NO: 0000-0002-0210-2751

ÖZET

Legionella cinsi bakteriler 52 tür ve 70 farklı serotipi ile doğal su kaynakları ve insan yapımı su sistemlerinde (soğutma kulesi, duş başlığı, klimalar, spa, havuzlar) yaygın olarak bulunan, insanda Lejyoner hastalığı ve Pontiak ateşine neden olan patojen bir bakteridir. Besin yetersizliği, sıcaklık, pH, dezenfektanlar ve ortamdaki diğer mikroorganizmalar, *Legionella* bakterilerini strese sokarak VBNC (viable but non-culturable) fazına girmesine neden olabilmektedir. Bu çalışmada, biyositin *Legionella pneumophila* bakterilerinin geri kazanımına etkisinin kültür, FISH floresan *in situ* hibridizasyon ve semi-nested PZR yöntemleri ile değerlendirmesi amaçlanmıştır.

Farklı doz (100 ppm ve 200 ppm) ve sürelerde (0, 1, 3, 6 ve 24 saat) Huwa-San TR50 biyositine maruz bırakılan 10^8 h/L konsantrasyonda *L. pneumophila* bakterileri ile kontamine edilen içme suyu örneklerinde geleneksel kültür, FISH ve semi-nested PZR yöntemleri kullanılarak *L. pneumophila* bakterilerinin geri kazanım oranları saptanmıştır.

Çalışma sonucunda, en yüksek geri kazanımın kültür yönteminde %0.41, FISH yönteminde %100 ile 200 ppm (0. saat) konsantrasyon olduğu belirlenmiş ve örneklerin tümünden semi-nested PZR yöntemi ile geri kazanımın yapıldığı belirlenmiştir.

FISH ve semi-nested PZR yönteminin, farklı çevresel koşullara maruz bırakılan *L. pneumophila* bakterilerini içeren su örneklerinden geri kazanımında uygun yöntemler olduğu tespit edilmiştir. Bu çalışma, ülkemizde farklı doz ve sürelerde biyosite maruz bırakılan *L. pneumophila* bakterilerini içeren su örneklerinden kültür, FISH ve semi-nested PZR yöntemleri kullanılarak geri kazanım oranlarının incelendiği ilk çalışma olması açısından önem göstermektedir.

Anahtar kelimeler: Biyosit, FISH, *L. pneumophila*, Gerikazanım, Semi-nested PZR.

ABSTRACT

Legionella species bacteria are pathogenic bacteria that are present commonly in natural water and human-made water systems (cooling tower, shower head, air conditioners, spa, pools) with 52 species and 70 different serotypes and that causes Legionnaries' disease and Pontiac fever. *Legionella* bacteria pass to VBNC (viable but non-culturable) phase due to presence of other microorganisms in environment and environmental conditions such as starvation, temperature, pH and disinfectants. The aim of this study was to evaluate the effect of biocide on the recovery of *Legionella pneumophila* bacteria by culture, FISH (fluorescent *in situ* hybridization) and semi-nested PCR methods.

It was aimed to determined the most suitable method for determination of recovery usage water samples that are contaminated by *L. pneumophila* bacteria at 10^8 cell per liter concentration at different Huwa-San TR^{50} biocide dosage (100 ppm and 200 ppm).

At the end of the study, it was determined that the highest recovery was 0.41% in culture method

and 100% to 200 ppm (0 hour) concentration in FISH method and it was determined that all samples were recovered by semi-nested PCR method.
It was determined that FISH and semi-nested PCR methods are suitable methods for the recovery of *L. pneumophila* bacteria that are subject to biocides at different dosage and times from water samples.
Keywords: Biocide, FISH, *L. pneumophila*, Recovery, Semi-nested PCR.

THE INFLUENCE OF THE DIFFERENT QUALITY OF GRAPE BUSHES ON THEIR PRODUCTIVITY IN THE AGRO-ECOLOGICAL CONDITIONS OF ATU GAGAUZIA

CARA Serghei

PhD, Assoc.Prof., Dean of the Agro-technological faculty
Comrat State University, Comrat, Republic of Moldova

ORCID ID: 0000-0002-0556-3625

ABSTRACT

The results of studies devoted to the study of the characteristics of growth, development and productivity of introduced clones of grapes of classical European varieties in the ATU Gagauzia. Studied the of optimal ecological parameters for the cultivation of European clones of grapes, which make it possible to make full use of their agrobiological potential in the agroecological conditions of ATU Gagauzia.

The territory of ATU Gagauzia is located in the Budjak steppe, which is part of the southern Moldavian hilly plain. The relief is characterized by steppes and small hills. The climate is temperate continental. In winter, the air temperature is unstable. Frequent thaws and frost-free days have a negative effect on grape plants, often renew vegetation.

On the example of the SC "Tomai-Vinex" SA farm, a relationship was revealed between the quality of cuttings and seedlings, the growth and development of bushes in a permanent place, the timing of their entry into fruiting, the yield of plantings and the quality of products. It was found that the productivity of the plantations of the clone under study changes, depending on the meteorological conditions, which are inadequately formed during the period of their growth and development.

Key words: Cabernet-Sauvignon, Clone R5, Development, Fruiting, Grape, Hubs vines, Quality, Productivity, Vines.

AGRICULTURAL INFORMATION SEEKING BEHAVIOUR OF COCOYAM FARMERS: A CASE STUDY FROM NSUKKA AGRICULTURAL ZONE IN NIGERIA

Sunday Alagba Obazi, Cosmas Chibugo Ukwueze, Esdras Abrewa Remilokoun Obossou, and Anthonia Ngozi Asadu
Department of Agricultural Extension, University of Nigeria, Nsukka, P.M.B. 551 Nsukka, Enugu State, Nigeria

ABSTRACT

Cocoyam (*Xanthosoma spp. and Colocasia spp.*) are important tuber crops in many regions of the world, and a major staple food in Nigeria. Yet, cocoyam farmers still rely on traditional knowledge for the production. This study aims at exploring the information need and the information seeking behaviour of cocoyam farmers in Nsukka agricultural zone. Ninety cocoyam farmers were selected using a simple random technique. Various data on socioeconomics as well as the information need and the frequency of information seeking behaviour on cocoyam production were collected. Data were analysed using descriptive statistics and mean scores. Results revealed that majority of cocoyam farmers in the study area were middle aged females (58%) who have high agricultural information need generally but particularly, in the area of appropriate marketing channel (M = 1.92), improved varieties of crop (M = 1.88), weather information (M= 1.83), sourcing farm credit (M= 1.81), diseases and pest management (M= 1.70) among others. Also, their frequency of seeking information is moderate especially on the pest and diseases management (M= 1.52), importance of cocoyam (M= 1.48), cocoyam storage (M= 1.37) among others. The study therefore recommends that agricultural extension agencies (public and private) should supply information on improved cocoyam production practices to farmers in order to strengthen their production systems and improve their livelihoods.

Key words: Cocoyam, information, behaviour, Nsukka, Nigeria

POTENTIAL OF GEORGIAN ABORIGINAL GRAPES IN ENOLOGY

Nino Chkhartishvili

viticulture and winemaking scientific-research center of Georgian Technical University

Nino Abesadze

Georgian Technical University

ABSTRACT

Among the alcoholic beverages, wine has attracted a great deal of attention and public interest since time immemorial. The same is true today.

Viticulture and winemaking in Georgia has a deep roots in the ancient past. The tradition of the industry has 8000 years, which is confirmed and recognized by the world community of winegrowers and winemakers. (Patrick McGovern, Mindia Jalabadze, Stephen Batiuk, Michael P. Callahan, Karen E. Smith, Gretchen R. Hall, Eliso Kvavadze, David Maghradze, Nana Rusishvili, Laurent Bouby, Osvaldo Failla, Gabriele Cola, Luigi Mariani, Elisabetta Boaretto, Roberto Bacilieri, Patrice This, Nathan Wales, and David Lordkipanidze "Early Neolithic wine of Georgia in the South Caucasus"; PNAS November 28, 2017 114 (48) E10309-E10318; first published November 13, 2017).

Geographic location and agro-climatic conditions of Georgia have resulted in the development of 525 native Georgian grape varieties over the centuries, although over the years some have died out, or only a few have survived.

For decades, Georgia has renewed efforts to find and restore extinct rare grape varieties and bring them back to the wine industry. Collective vineyards have been planted and are under construction, restored more than 437 Georgian native wine and table varieties.

Ongoing ampelographic and oenological research in Georgia promotes new and rare red, white, rosé and amber wines using ancient and modern technologies, made possible by the gene pool of Georgian grapes.

The vast majority of studies on wine consumer behavior refer to red or white wines, although recent trends in the global market indicate the growing popularity of rosé wine and a significant increase in its production around the world.

This article presents the results of study that show that rose wine, made from the aboriginal Georgian local grape variety, is a beverage with the rare color and taste.

Key words: Georgian aboriginal Grape Gene pool, Vitis Vinifera, 525 native grapes, Adanasuri, Georgian rose wine.

ANTIFUNGAL ACTIVITY OF TRIAZOLE DERIVATIVES STUDY BY 3D-QSAR, MOLECULAR DOCKING AND ADMET PROPERTIES

Soukaina Bouamrane[1], Ayoub Khaldan[1], Halima Hajji[1], Hamid Maghat[1]*, Mohammed Aziz Ajana[1], Mohammed Bouachrine[1,2] and Tahar Lakhlifi[1]

1Molecular Chemistry and Natural Substances Laboratory, Faculty of Science, Moulay Ismail University of Meknes, Morocco

2EST Khenifra, Sultan Moulay Sliman University, Benimellal, Morocco

ABSTRACT

The Antifungal are the drugs using for treating the scalp, nail or skin fungi, there are several types of fungal infections but In this work we studied candida albicans particularly and we used the technique the 3D-QSAR including CoMFA and CoMSIA approaches were executed on a series of twenty five novel triazole derivatives as antifungal agents, Therefore to develop a 3D-QSAR model we used 20 triazole derivatives in the training set affords high values of Q^2 (0.708 and 0.755 respectively), and significant values of R^2 (0.908 and 0.931 respectively). The 3D-QSAR models produce the contour maps which are afforded much beneficial information to identify the regions responsible for increasing or decreasing the activity. According on these findings, we have succeeded in proposed the new molecules with important activities. Likewise, molecular docking was adopted to study the interactions between a newly proposed molecule and the most active molecule in the dataset (compound 15) with receptor (PDB: **5TZ1**). And we confirmed the friability and toxicity of the compounds proposed by the method ADMET (Absorption, Metabolism, Distribution, Excretion, and Toxicity).

Keywords: Antifungal, CoMFA, CoMSIA, triazole, molecular docking, ADMET

К ВОПРОСУ ОБ ЭФФЕКТИВНОСТИ ДИСТАНЦИОННОГО И СМЕШАННОГО ОБУЧЕНИЯ В ВЫСШЕЙ ШКОЛЕ

Даньшева Светлана Олеговна,

заведующая кафедрой физики, кандидат педагогических наук, доцент

Дитюк Светлана Алексеевна,

старший преподаватель кафедры украинского языка

и языковой подготовки иностранных граждан

Игнатова Валентина Владимировна,

старший преподаватель кафедры украинского языка

и языковой подготовки иностранных граждан

Тесаловская Ольга Борисовна,

старший преподаватель кафедры украинского языка

и языковой подготовки иностранных граждан

Харьковский национальный университет строительства и архитектуры,

г. Харьков, Украина

АННОТАЦИЯ

В статье рассматриваются новые требования к высшему образованию, к совершенствованию современных образовательных технологий - таких как учебные курсы и дистанционные образовательные технологии, изучение и выявление проблем студентов высших учебных заведений во время кризиса, возникшего в связи с пандемией. Вопрос об эффективности дистанционного или смешанного обучения и роли личностных качеств преподавателей учебных дисциплин и кураторов в образовательном процессе определяются первостепенной важностью проблем воспитания и обучения на данном этапе развития современной Украины. В статье был сделан анализ и определены социально-психологическое состояние студентов и проблемы, возникающие у них при дистанционном обучении путем анкетирования, используя Google Forms, сделаны выводы каким образом можно решать эти проблемы.

Ключевые слова: дистанционные образовательные технологи, выявление проблем студентов высших учебных заведений, личностные качества преподавателей учебных дисциплин и кураторов в образовательном процессе, взаимоотношения преподавателя и студентов высших учебных заведений.

ABSTRACT

The article considers new requirements for higher education, the improvement of modern educational technologies such as training courses and distance learning technologies, and the study and identification of difficulties of students during the crisis caused by the pandemic. To date, a certain amount of knowledge important for formulating and solving the problem of adaptation of students during online education has been accumulated. Stating the active development of various aspects of the problem that we are investigating, we can conclude that the problem of adaptation of students to online learning using distance learning technologies and the difficulties that arise in this case have not yet become the subject of a special study. Questions about the effectiveness of distance or blended learning and the role of personal

qualities of teachers and curators in the educational process are determined by primary importance of the problems of education and training at this stage of development of modern Ukraine. The article analyzes and identifies the socio-psychological state of the students and the problems they encounter during distance learning through questionnaires using Google Forms, and draws conclusions on how to solve these problems.

Keywords: distance educational technologies, identification of difficulties of students, psycho-emotional state, personal qualities of teachers of educational disciplines and curators in educational process, mutual relations of teacher and students.

SUCCESSFUL TREATMENT OF CUTANEOUS SOLID TYPE ADENOCARCINOMA WITH CRYOSURGERY IN A PEKINGESE DOG

Murat KİBAR

Prof. Dr., Artvin Çoruh University, Artvin Vocational School, Artvin, Turkey

ORCID ID: 0000-0001-8879-4121

ABSTRACT

The aim of this study is to defined the treatment of cutaneous solide type adenocarcinoma in a Pekingese dog using cryotherapy. A 3.5-year-old intact female Pekingese dog was referred to the small animal surgery clinic. The first neoplasm localization was dorsal to the vulva and the others were bilateral to the vulva. The probe-based cryosurgical system was used for cryoablation, using local anesthetic as the interface for uniform freezing. Based on histopathological features, the dog was diagnosed with solid type perianal adenocarcinoma. In conclusion, cryosurgery can be an potent alternate treatment for pleasant, nodular perianal cutaneous adenocarcinoma in animals, particularly those not suited for operation, or whose owners refuse to have them undergo operation.

Key words: adenocarcinoma, criotherapy, dog

DETERMINATION OF ORGANIC COMPOUNDS IN THE PLANT EXTRACT OF NARROW-LEAVED FIREWEED

Akhmetbekov A.K., Sayakova G.M., ZHAKSYLYKOV N. N., Ibadullayeva G.S., ZHETEROVA S. K.

S.D. Asfendiyarov Kazakh National Medical University, Tole bi av. 94, Almaty, Kazakhstan

ABSTRACT

In recent years, along with the search for new medicinal plants, an in-depth study of raw materials used in traditional medicine has been conducted. These studies are primarily focused on the establishment of the structure of biologically active substances and the development of modern and objective methods for the standardization of plant materials.

Narrow-leaved fireweed (Chamaenerion angustifolium L.) is an affordable and widespread plant raw material, serves as a source of biologically active compounds. The significant content of biologically active substances (biologically active compounds) in it determines the wide therapeutic use of its extracts, since they show significant bactericidal, antioxidant, antitumor, and antiviral activity. Therapeutic and prophylactic agents based on narrow-leaved fireweed are slightly toxic, have a very good enveloping and anti-inflammatory effect. Despite the fact that the plant is a promising source of biologically active substances, currently, it does not used in practical pharmacy. At the moment, in all the pharmacopoeias of the world there is no monograph on the raw material of narrow-leaved fireweed. On the basis of the herb of narrow-leaved fireweed, manufacturers produce only various biologically active food additives. As a result, the development of criteria for the standardization of raw fireweed narrow-leaved is an urgent task. Considering the above, it is necessary to conduct a more complete study of the component composition of narrow-leaved fireweed using modern high-precision methods of analysis.

The scientific work describes the methods and conditions for the chromatographic analysis of the extract obtained from the herb of narrow-leaved fireweed. On the basis of the method of gas chromatography - mass spectrometry (GC-MS), the possibility of identifying the component composition of the herb has been studied. The presence of more than 40 components has been established.

Key words: Narrow-leaved fireweed, Chamaenerion angustifolium L., chemical composition, gas chromatography, extract.

KAHRAMANMARAŞ KUYUMCULAR MERASINDA TESPİT EDİLEN BAZI YEM BİTKİLERİNİN YEM KALİTE DEĞERLERİ

FEED QUALITY VALUES OF SOME FORAGE CROPS DETECTED IN KAHRAMANMARAŞ KUYUMCULAR RANGE

Ömer Süha USLU

Dr. Öğr. Üyesi, Kahramanmaraş Sütçü İmam Üniversitesi Ziraat Fakültesi Tarla Bitkileri Bölümü

(Sorumlu Yazar)

ÖZET

Meralarda yetişen bitkilerin çoğu henüz kültüre alınmamış doğal olarak yetişen yem bitkileridir. Dolayısıyla bu bitkilerin yem kalite değerleri ile ilgili bilgiler sınırlı düzeydedir. Bu araştırma Kahramanmaraş Kuyumcular merası bitki örtüsünde doğal olarak yetişen 4 baklagil ve 8 buğdaygil yem bitkisi türünün yem kalite değerlerini saptamak amacı ile 2019 yılında yürütülmüştür. Ot örnekleri merada tel ile çevrilmiş korunaklı alandan vejetasyonun çiçeklenme döneminde alınmıştır. Saptanan buğdaygil yem bitkileri *Agrostis capillaris, Avena barbata, Bromus diandrus, Hordeum murinum, Lolium temulentum, Phlaris arundinacea, Phlaris paradoxa, Phleum pratense* türleri, baklagil yem bitkileri ise *Medicago polymorpha var. vulgaris, Melilotus officinalis, Trifolium lappaceum, Trifolium nigrescens* ssp. *petrisavrii* türleridir. Araştırmada ham protein oranı (HPO) % 5.7-18.2, ham kül oranı (HKO) % 5.8-12.5, nötr deterjanda çözünmeyen lif (NDF) oranı % 46.5-65.1, asit deterjanda çözünmeyen lif (ADF) oranı % 32.6-51.5, sindirilebilir kuru madde (SKM) % 48.8-63.5, kuru madde tüketimi (KMT) % 1.84-2.58, nispi yem değeri (NYD) 70.5-122.4, sindirilebilir enerji (SE) 15.3-19.9 MJ/kg KM ve metabolik enerji (ME) 12.5-16.3 MJ/kg KM arasında bulunmuştur. Baklagillerin ham protein oranı, NDF, ADF oranı ve nispi yem değeri yönünden buğdaygillerden üstün olduğu belirlenmiştir.

Anahtar Kelimeler: Mera, baklagiller, buğdaygiller, yem kalitesi, kimyasal kompozisyon

ABSTRACT

Most of the plants grown in ranges are naturally grown forage plants that have not yet been cultivated. Therefore, information about the feed quality values of these plants is limited. This research was carried out in 2019 to determine the feed quality values of 4 legumes and 8 grasses forage crops that grow naturally in the vegetation of Kahramanmaraş Kuyumcular range. Samples were taken from the sheltered area surrounded by wire on the pasture during the flowering period of the vegetation. Detected grass forage crops *Agrostis capillaris, Avena barbata, Bromus diandrus, Hordeum murinum, Lolium temulentum, Phlaris arundinacea, Phlaris paradoxa, Phleum pratense* species, and legume forage crops *Medicago polymorpha var. vulgaris, Melilotus officinalis, Trifolium lappaceum, Trifolium nigrescens* ssp. *petrisavrii* species. In the research, the crude protein ratio was 5.7-18.2%, the crude ash ratio was 5.8-12.5%, the neutral detergent fiber (NDF) ratio was 46.5-65.1%, the acid detergent fiber (ADF) ratio was 32.6-51.5%, the digestible dry matter (SCM) was 48.8-63.5%, dry matter intake (DMI) 1.84-2.58%, relative feed value (RFV) 70.5-122.4, digestible energy (DE) 15.3-19.9 MJ/kg DM and metabolizable energy (ME) 12.5-16.3 MJ/kg DM. It has been determined that legumes are superior to grasses in terms of crude protein ratio, NDF, ADF ratio and relative feed value.

Keywords: Pasture, legumes, grasses, forage quality, chemical composition

TÜRKİYE'DE BİYODİZEL ÜRETİMİNE YÖNELİK KENEVİR YETİŞTİRİCİLİĞİNİN YAYGINLAŞTIRILMA OLANAKLARI

DISSEMINATION OPPORTUNITIES OF HEMP GROWING FOR BIODIESEL PRODUCTION IN TURKEY

Esra YAZICI

Yüksek Lisans Öğrencisi, Ege Üniversitesi Fen Bilimleri Enstitüsü Tarım Ekonomisi Anabilim Dalı

(Sorumlu Yazar)

ORCID: 0000-0002-6033-7671

Sait ENGİNDENİZ

Prof. Dr., Ege Üniversitesi Ziraat Fakültesi Tarım Ekonomisi Bölümü

ORCID ID: 0000-0002-7371-3330

ÖZET

Biyodizel, hammaddesini yaygın olarak tarımsal ürünlerden alan, her türlü atık yağdan üretilebilen ve diğer alternatif enerji kaynaklarına oranla arz miktarı kolaylıkla ayarlanabilen ve depolanabilen önemli bir yakıttır. Günümüzde ticari olarak biyodizel üretildiği bölgeye göre değişmekle birlikte genellikle soya fasulyesi, palm yağı ve kolza tohumundan elde edilmektedir. Bu bitkilerin yanında bir diğer umut vadeden biyodizel kaynağı lifli bir bitki olan endüstriyel kenevirdir. Tohumunda yüksek oranda (%26- %38) yağ barındıran kenevir aynı zamanda düşük karbon içerikli biyoyakıtlar (biyoetanol ve biyobütanol) üretilebilecek içeriğe de sahiptir. Türkiye'de kenevir tarımı ve lif sektörü çok eskilere dayanmaktadır. Ancak Türkiye'de kenevir üretim alanlarında 2011 sonrası ciddi bir düşüş olmuştur. 2016 itibariyle özellikle lif üretiminde artış gözlenmiştir. Türkiye'de kenevir üretimi, 2016 yılında yayınlanan ''Kenevir Yetiştiriciliği ve Kontrolü Hakkındaki Yönetmelik'' hükümlerine göre yapılmaktadır. Bu yönetmeliğe göre halen 19 ilde izin almak kaydı ile kenevir üretimi yapılabilmektedir. TÜİK verilerine göre, Türkiye'de 2019 yılında 53.6 hektar alanda kenevir tohumu, 16 hektar alanda ise kenevir lifi üretimi gerçekleştirilmiştir. Aynı yıl, tohumluk üretimde dekara 37 kg, lif üretiminde ise dekara 119 kg verim alınmıştır. Kenevir üretimi çoğunlukla Samsun ilinde gerçekleştirilmektedir. Türkiye 2019 yılında 260 kg kenevir tohumu ithalatı gerçekleştirmiştir. İthalatın yapıldığı başlıca ülkeler Afganistan, Çin ve Kanada'dır. Bu çalışmanın amacı, Türkiye'de biyodizel amaçlı kenevir yetiştiriciliğinin yaygınlaştırılmasına yönelik koşul ve olanakları değerlendirmektir. Çalışmanın ana materyalini farklı kurumlardan sağlanan istatistiksel veriler ve konuyla ilgili daha önce yapılmış olan çalışmalardan elde edilen bilgiler oluşturmaktadır. Toplanan istatistiksel veriler çizelge ve grafikler şeklinde düzenlenmiş, yüzde ve indeks hesaplamaları yapılarak yorumlanmıştır.

Anahtar Kelimeler: Kenevir, Kenevir Lifi, Yenilenebilir Enerji, Biyoyakıt, Biyodizel.

ABSTRACT

Biodiesel is an important fuel that takes its raw material widely from agricultural products, can be produced from all kinds of waste oil and its supply can be easily adjusted and stored compared to other alternative energy sources. Today, commercially biodiesel is usually obtained from soybean, palm oil and rapeseed, although it varies according to the region where it is produced. Besides these plants, another promising biodiesel source is industrial

hemp, a fibrous plant. Containing a high percentage of oil (26% -38%) in its seed, hemp also has a content that can produce low-carbon biofuels (bioethanol and biobutanol). Hemp growing and fiber industry in Turkey is based on very old. However, after 2011, it has been a serious decline in hemp production in Turkey. As of 2016, there has been an increase especially in fiber production. Hemp production in Turkey, entered into force in 2016, "Regulation on Hemp Cultivation and Control" is carried out according to the provisions. According to this regulation, hemp can be produced in 19 provinces with permission. According to TURKSTAT data, in 2019, hemp seed was produced in 53.6 hectare area and hemp fiber was produced in 16 hectare Area in Turkey. In the same year, a yield of 37 kg per decare was obtained in seed production and a yield of 119 kg per decare in fiber production. Hemp production is mostly carried out in Samsun province. Turkey realized to import 260 kg of hemp seeds in 2019. The main countries where imports are made are Afghanistan, China and Canada. The aim of this study was to evaluate the conditions and possibilities for dissemination of hemp growing for biodiesel production in Turkey. The main material of the study consists of statistical data obtained from different institutions and information obtained from previous studies on the subject. The statistical data collected were arranged as tables and graphics, and interpreted by making percentage and index calculations.

Keywords: Hemp, Hemp Fiber, Renewable Energy, Biofuel, Biodiesel

KONYA İLİ TAHIL ÜRETİM DURUMU VE ÖNEMİ

KONYA CITY CEREAL PRODUCTION STATUS AND IMPORTANCE

İsmail ÇİFTCİ

Dr. Öğrencisi Konya İl Tarım ve Orman Müdürlüğü

(Sorumlu Yazar)

Cennet OĞUZ

Prof. Dr. Selçuk Üniversitesi Ziraat Fakültesi Tarım Ekonomisi Bölümü

Fatma ÇİFTCİ

Dr. Konya PTT Baş Müdürlüğü

ÖZET

Dünya'da artan nüfus ve gelişmiş ülkelerde sosyo-ekonomik refahın getirisi olan tüketim çeşitliliğinin artması tarım ürünlerine olan talebi artırmıştır. Bunun yanı sıra özellikle iklim değişikliği ve salgın gibi kontrolü zor olan faktörlerin etkisiyle gıda güvencesi ve kendine yeterlilik gündeme gelmiştir. Her geçen gün artan nüfusun beslenmesinde tarım ürünleri önemli rol oynamaktadır. Tarım ürünleri içerisinde ise tahıllar başta gelmektedir. Nitekim insanoğlunun enerji ihtiyacının %55-65'ini tahıllar karşılamaktadır. Tarımsal üretimin, tahıl ile başladığı söylenebilir. Serin iklim tahılları olan buğday, arpa, yulaf, çavdar ve tritikale insan beslenmesinde önemli bir yere sahiptir. Ayrıca hayvan besleme ve endüstride geniş kullanım alanları vardır. Bu nedenle tarımsal açıdan üretimi önem kazanmaktadır. Bugün de tahıl üretimi tarımsal üretimin en önemli kısmıdır. Çünkü tahıllar tüm dünyada önemli bir besin maddesi olarak yerini korumaktadır ve temel besin maddesi ekmek olduğu sürece de bu yerini koruyacaktır. Buğday türevleri olan un ve unlu mamuller insanların, arpa ve mısır yoğun olarak hayvan beslenmesinde içerdiği besin maddeleri açısından önemli önceliğe sahiptir. Bu sebeple dünyanın bütün ülkelerinde tahıl üretimi yapılmaktadır. Buna rağmen yapılan üretimle kendi iç tahıl ihtiyacını karşılayabilen ve ürettiği ile doyabilen ülke sayısı oldukça azdır. Bu nedenle çalışmanın temel amacı tahılların dünya, Türkiye ve Konya İlinde üretim alanı, üretim miktarı, ithalat ve ihracat değerleri ortaya konularak karşılaştırmalar yapılmıştır. Çalışmada ikincil verilerden yararlanılmış olup tahıllar durum analizi bakımından önemli katkı sağlayacaktır.

Anahtar Kelimeler: Tahıllar, Tahıl İstatistikleri, Konya, Türkiye

ABSTRACT

The increasing population in the world and the increase in consumption diversity, which is the result of socio-economic prosperity in developed countries, has increased the demand for agricultural products. In addition, food security and self-sufficiency have come to the fore, especially due to factors that are difficult to control such as climate change and epidemics. Agricultural products play an important role in the nutrition of the increasing population every day. Among agricultural products, grains come first. As a matter of fact, grains meet 55-65% of the energy needs of human beings. It can be said that agricultural production starts with grain. Wheat, barley, oats, rye and triticale, which are the cool climate grains, have an important place in human nutrition. In addition, it has wide usage areas in animal feeding and industry. Therefore, agricultural production becomes important. Today, grain production is the most important part of agricultural production. Because grains maintain their place as an important nutrient all over the world and as long as the basic nutrient is bread, it will keep this

place. Flour and bakery products, which are derivatives of wheat, have an important priority in terms of nutrients that humans contain in animal nutrition, barley and corn. For this reason, grain production is carried out in all countries of the world. Despite this, the number of countries that can meet their own domestic grain needs and be satisfied with what they produce is very few. Therefore, the main objective of the work world cereal production area in Turkey and Konya, the amount of production, import and export values put forth comparisons are made. Secondary data were used in the study and cereals will make an important contribution in terms of situation analysis.

Key Words: Cereals, Cereal Statistics, Konya, Turkey

PRODUCTS OF PROCESSING OF SUNFLOWER SEEDS IN MEAT PRODUCTS

I. Strashynskyi

II. PhD, Associate Professor

V. Pasichniy

Doctorof Technical Science, Professor

T Shevchenko, student

National University of Food Technologies, Kyiv, Ukraine

ABSTRACT

Increasing the production of protein to meet the needs of the population of Ukraine and the world is one of the most difficult problems of our time and is of paramount practical importance. Despite the achievements of the agro-industrial complex and the achievements of food science, the problem of protein deficiency in the diet still remains unresolved.

One of the directions of increasing the raw material base is the search for new plant sources of dietary protein and the development of ways to use them in the technology of meat products.

One of the ways to increase the raw material base is to find new plant sources of dietary protein and develop ways to use them in meat technology.

As a source of dietary protein attracts the attention of sunflower, which has a fairly large raw material base. Sunflower is the fourth largest oil crop in the world after palm, soybean and rapeseed oil. Sunflower flour is the main by-product of sunflower oil production, accounting for up to 36% of the weight of processed seeds. The protein content in sunflower seeds is about 20%, while the protein content in sunflower meal ranges from 30% to 50%. Sunflower protein has good fractional and amino acid composition, in particular, high methionine content, high functional properties, is the cheapest type of protein raw material. In addition to protein, sunflower meal contains other valuable nutrients such as vitamins, minerals and polyphenols. For this reason, although sunflower meal is mainly used as animal feed, it has the potential for human consumption.

Among the factors that limit the use of sunflower meal (or cake), we can name chlorogenic and quinic acids, the level of which is 1.56 and 0.48%, respectively, and fiber. The negative effect of high doses of chlorogenic acid is manifested in the inhibition of trypsin and lipase, so its level should not exceed 1%.

In the literature, there is information about the total content of phenols and the antioxidant capacity and improvement of nutrients with the use of sunflower seeds in cookies and rolls. However, the use of soy products and their processed products in animal products has yet to be studied.

TÜRKİYE'DE ÇAVDAR ÜRETİMİ: SON YILLARDAKİ DEĞİŞİKLİKLERİN GENEL ANALİZLERİ

RYE PRODUCTION IN TURKEY: GENERAL ANALYSIS OF CHANGES IN RECENT YEARS

Zeliha ŞAHİN

Dr. Öğrencisi, Harran Üniversitesi Ziraat Fakültesi Tarım Ekonomisi Bölümü Anabilim Dalı

(Sorumlu Yazar)

Mustafa Hakkı AYDOĞDU

Doç. Dr., Harran Üniversitesi Ziraat Fakültesi Tarım Ekonomisi Bölümü Anabilim Dalı

ÖZET

Tahıllar, dünyada olduğu gibi Türkiye'de de insan beslenmesinde önemli bir yere sahiptir. Ayrıca hayvan beslenmesinde enerji sağlaması acısından yem kaynaklarının çoğunluğunu oluşturur. Çavdar, Türkiye tahıl üretiminde 3. sırada yer alan önemli tahıllardandır. Son dönemlerde yeterli ve güvenli gıdaya olan talep artmaktadır. Bununla beraber alternatif besin kaynakları da önem kazanmaya başlamıştır. Günümüzde çavdar içerdiği lif zenginliği sayesinde buğday unu ile karıştırılıp ekmek olarak kullanımı yaygınlaşmaktadır. Türkiye, dünya da çavdar ekim alanı olarak 10.sırada, üretim miktarı olarak 9. sırada yer alır iken verim açısından ise 30. sıradadır. Bu çalışmanın amacı, Türkiye'nin son dönemlerdeki çavdar piyasasının üretim miktarı, ekim alanı, verimi, ortalama satış fiyatı, ihracat, ithalat ve dış ticaret dengesinin değerlendirilmesidir. Araştırmada Türkiye İstatistik Kurumu ile Birleşmiş Milletler Gıda ve Tarım Örgütünün verilerinden, ilgili sektör raporları ve diğer çalışmalardan faydalanılmıştır. Araştırmada trend analizi yapılmış olup, 2005 ile 2020 yıllarına ait veriler kullanılarak, 2025 yılına kadar projeksiyonlar gerçekleştirilmiştir. Elde edilen sonuçlara göre Türkiye'de çavdar ekim alanlarının ve üretim miktarının gelecek dönemlerde farklı oranlarda azalma eğiliminde olması beklenirken, verim ve satış fiyatlarının gelecek dönemlerde artma eğiliminde olması beklenmektedir. Bu artışların regresyon katsayıları sırasıyla yaklaşık %76, %8, %80 ve %93 olarak belirlenmiştir. Diğer taraftan ihracatın azalması, ithalatın artması ve dış ticaret dengesinin pozitif eğilimde devam etmesi beklenmekte olup, bunları regresyon katsayıları, sırasıyla yaklaşık; %57, %4 ve %57 olarak belirlenmiştir. Çavdar yetiştiriciliğinde en önemli sorunu verim düşüklüğü olduğu tespit edilmiştir. Tarımsal teknolojilerdeki gelişmeler, sertifikalı tohum, çeşit geliştirilmesi, sulu tarımda ürün deseninde yer verilmesi gibi önlemler ile verim düşüklüğü sorunu çözülebilir. Kamusal tarımsal desteklerde daha fazla oranda yer verilmesi ve yayım faaliyetleri ile ekim, üretim ve verimde artışlar sağlamak mümkündür. Bu çalışma çavdar konusunda güncel verilere yer vermesi açısından da faydalı sonuçlar arz etmektedir.

Anahtar Kelimler: Çavdar, Üretim Alanı, Üretim Miktarı, Verim, Satış Fiyatları, İhracat, İthalat, Dış Ticaret Dengesi, Türkiye

ABSTRACT

Cereals, Turkey as well as in the world, has an important place in human nutrition. Rye, ranked 3rd in Turkey are important cereal grain production areas. Demand for adequate and safe food has been increasing recently. However, alternative food sources have begun to gain importance. Nowadays, rye is used as bread mixed with wheat flour thanks to the fiber richness it contains. Turkey, the world as rye acreage in 10th place, it ranks 9th in terms of

production amount and 30th in terms of efficiency. For this purpose, the production amount of rye market in Turkey in the last period, acreage, yield, average selling price, exports, imports and trade balance is assessed. Turkey Statistical Institute in the study with the United Nations Food and Agriculture Organization of the data has benefited from the report and other studies. Trend analysis was carried out in the study, and the data for the years 2005 and 2020 were in the mirror, and the projections were carried out until 2025 today. According to the obtained result of the declining trend in the future in different proportions of rye acreage and production quantities are expected in Turkey, productivity and sales prices in the coming period is expected to be on an upward trend. Arrange the regression coefficients of these increments to about 76%, 8%, 80%, and 93%. It is expected that other exports will decrease, imports will increase and the foreign trade balance will continue in a positive trend. These regression coefficients are approximately; 57%, 4% and 57%. It has been determined that the most important problem in rye cultivation is low level. With the developments in agricultural technologies, certified seeds can find a place in the product pattern in irrigated agriculture, the problem of low yield can be solved. Increases in cultivation, production and yield are possible by including more public agricultural supports and extension activities. This study provides useful results when it includes up-to-date data on rye.

Keywords: Rye, Production Area, Production Amount, Yield, Sale Price, Exports, Imports, Trade Balance, Turkey

TÜRKİYE'DE SON DÖNEMLERDEKİ KORUNGA TARIMININ GENEL DEĞERLENDİRİLMESİ

GENERAL EVALUATION OF RECENT PERIODS OF SAINFOIN FARMING IN TURKEY

Zeliha ŞAHİN

Dr. Öğrencisi, Harran Üniversitesi Ziraat Fakültesi Tarım Ekonomisi Bölümü Anabilim Dalı

(Sorumlu Yazar)

Mustafa Hakkı AYDOĞDU

Doç. Dr., Harran Üniversitesi Ziraat Fakültesi Tarım Ekonomisi Bölümü Anabilim Dalı

ÖZET

Tarımsal üretim, dünyada birçok ülkede ekonomik yaşamlarında önemli bir yere sahiptir. Dünyada artan nüfusla beraber tarımsal üretimin önemli kollarından olan hayvancılıkta önem kazanmıştır. Hayvancılık sektörünün gelişimi için önemli yere sahip olan yem sektörü, günümüzde yem bitkileri ürün çeşitliliğinde artış göstermesinin yanı sıra korunga son yıllarda üretimi azalan çok yıllık yem bitkilerindendir. Günümüzde arıcılık için önemli polen ve nektar kaynağı olarak görülmektedir. Bu çalışmanın amacı, Türkiye'de son dönemlerde korunga üretim miktarı, ekim alanı, verimi, ortalama satış fiyatı ve uygulanan politikaların değerlendirilmesidir. Araştırmada Türkiye İstatistik Kurumu ile Birleşmiş Milletler Gıda ve Tarım Örgütünün verilerinden ve konuyla ilgili sektör raporları ile diğer çalışmalardan faydalanılmıştır. Çalışmada yöntem olarak 2005 ile 2020 yıllarına ait veriler kullanılarak, 2025 yılına kadar Excel de trend analizi yapılmıştır. Analiz sonuçlarına göre Türkiye'de korunga ekim alanlarının, üretim miktarının, veriminin ve fiyatlarının gelecek dönemlerde farklı oranlarda artma eğiliminde olacakları öngörülmektedir. Artış eğilimlerinin yaklaşık regresyon katsayıları sırasıyla; %77, %92, %86 ve %88 olarak belirlenmiştir. Üretim miktarı ve ekim alanlarında ki artış, verim ve fiyattaki artıştan daha az olması beklenmektedir. Verimde ki artış eğiliminde olması artan tarımsal teknolojilerdeki gelişmeler, tohum çeşitlerinin geliştirilmesi, sulu tarımda ürün deseninde yer verilmesi ve kaba yem sektörünün gelişmesi gibi faktörlerden kaynaklandığı öngörülmektedir. Ayrıca kamusal tarımsal desteklerde daha fazla oranda yer verilmesi ve bu konuda yayım faaliyetleri ile de hem ekim ve hem üretimde artışlar sağlanabilir. Bu araştırma özellikle büyükbaş hayvancılığın yapıldığı bölgelerde üretiminin daha da yaygınlaştırılması, kaba yem sektörü için bir alternatif olan korunga konusunda güncel verileri kapsaması açısından da faydalı sonuçlar arz etmektedir.

Anahtar Kelimler: Korunga, Üretim Alanı, Üretim Miktarı, Verim, Satış Fiyatları, Türkiye.

ABSTRACT

Agricultural production has an important place in the economic lives of many countries around the world. With the increasing population in the world, animal husbandry, which is one of the important branches of agricultural production, has gained importance. The feed sector, which has an important place for the development of the livestock sector, is one of the perennial forage crops whose production has decreased in recent years as well as the increase in the variety of forage crops. Today it is seen as an important source of pollen and nectar for beekeeping. The purpose of this study, sainfoin production volume in Turkey in recent years, planting area, yield, and the average selling price is the evaluation of the policies implemented. Research by the United Nations Statistical Institute in Turkey has benefited from working with the food industry and other reports on the subject of data from and

Agriculture Organization. In the study, trend analysis was performed in Excel until 2025 by using data from 2005 and 2020 as a method. According to the results of sainfoin cultivation areas in Turkey, the amount of production in the coming period is expected to yield and price will tend to decrease at different rates. Approximate regression coefficients of the upward trends, respectively; 77%, 92%, 86% and 88%. The increase in production and cultivation areas is expected to be less than the increase in yield and price. The increasing trend in yield is predicted to be caused by factors such as the developments in agricultural technologies, the development of seed varieties, the inclusion of the product pattern in irrigated agriculture and the development of the roughage sector. In addition, more inclusion in public agricultural support and extension activities in this regard can increase both cultivation and production. This research also provides useful results in terms of expanding its production even more in regions where cattle breeding is carried out, and including up-to-date data on sainfoin, which is an alternative for the roughage sector.

Keywords: Sainfoin, Cultivation Area, Production Amount, Productivity, Sales Prices, Turkey.

COMPARISON OF INTRAOPERATIVE EFFECTS OF INTRATESTICULAR LIDOCAINE IN CATS WITH XYLASINE-KETAMINE AND XYLASINE-PROPOFOL ANESTHESIA UNDERGOING ROUTINE CASTRATION

Murat KİBAR

Prof. Dr., Hunting and Wild Life Medicine Programme, Artvin Vocational School, Artvin University, Artvin, Turkey

ORCID ID: 0000-0001-8879-4121

ABSTRACT

This study aimed to compare the effects of intratesticular lidocaine on intraoperative nocifensive responses in cats under two different anesthetic techniques experiencing elective castration. Cats between the age of six months and three and half years were eligible for inclusion and accepted for elective castration. Cats were arbitrarily shared into two treatment groups: a xylasine-ketamine (group 1) and a xylasine-propofol (group 2). Cats received a slow injection of 1 mg/kg lidocaine (2% lidocaine hydrochloride) into the body of left testis. In addition to clinical monitoring, the electrocardiogram, respiration frequency, heart rate, blood pressure, pulse oximetry and rectal temperature were monitored continuously via a multi-parameter monitor. Respiration frequency values were significantly higher than baseline at time points T1 and T2 in group 1. Respiration frequency value was considerably lesser in the ketamine group compared to the propofol group at T3 ($P < 0,01$). Two cat's respiration frequency values and heart rate values were increased by 20% in both groups following the ligation procedure (T2 time point). These findings propose that intratesticular lidocaine is a beneficial analgesic method in cats with anesthesied ketamine and propofol experiencing elective castration and might be accepted as a supplement to standard anesthetic practice.

Keywords: Castration, Intratesticular, Lidocaine, Cat

HIGHLY SUPER POROUS AND NON-ENZYMATIC HYBRID CUO/PT NPS PLATFORM WITH IMPROVED SENSITIVITY AND SELECTIVITY FOR THE DETECTION OF HYDROGEN PEROXIDE

Rakesh Kulkarni, Rutuja Mandavkar, Sundar Kunwar, Jae-Hun Jeong and Jihoon Lee*

Department of Electronic Engineering, College of Electronics and Information, Kwangwoon University, Nowon-gu Seoul 01897, South Korea.

ABSTRACT

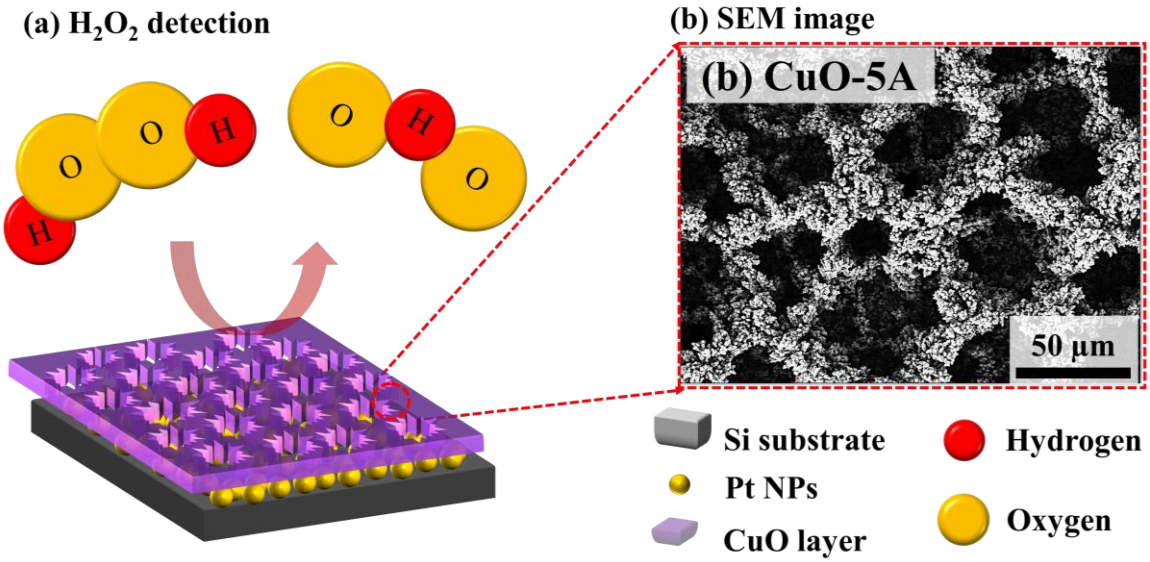


Figure 1. (a) Schematic of H_2O_2 detection by highly super-porous hybrid CuO/Pt NPs. (b) Typical SEM image of CuO nanostructure [1].

The development of efficient and biocompatible electrochemical non-enzymatic biosensor has received great attention due to their significant practical application in various fields like pharmaceutical and industrial application [2]. The highly stable and efficient platform for the electrochemical detection of H_2O_2 plays a vital role in the field of sensors, due to their fast, durable and analytical process [3]. However, the performance of enzyme-based biosensors suffers many drawbacks like measurement accuracy, high cost of fabrication and sensitivity to the external environment due to immobilized enzymes.

Nowadays, non-enzymatic biosensors gained great interest to improve the performance in terms of measuring accuracy and ease of fabrication. Non-enzymatic biosensors gained great interest due to their fascinating properties like a fast response, long durability, and enhanced sensitivity. Recently, many metals like (Au, Pd and Ag), metal oxides like (MnO_2, CuO and CoO) different alloys (Ag-Pt, Pt-Au and Cu-Ag) and metal oxides (CuO, NiO and Fe_2O_3) have been explored extensively for the non-enzymatic sensing application [4]. Among the various metals and their oxides copper oxide (CuO) has been widely explored for the biosensing application due to its biocompatibility, cheap and narrow bandgap of (1.2 eV) [5]. On the other hand, Pt NPs were studied due to their high stability, high conductivity and catalytical properties.

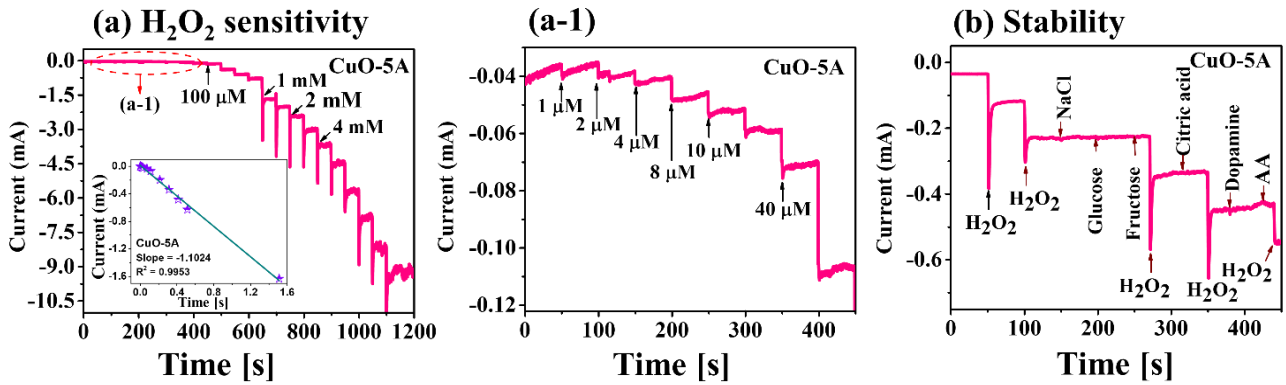


Figure 2. (a) - (a-1) Amperometric response of CuO-5A sample upon the dropwise addition of H_2O_2 concentration from 1µM – 4 mM in a 0.1 M PBS solution of a pH 7.4 at - 0.4 V potential. (b) Selectivity response of CuO-5A upon the successive addition of 0.1 mM H_2O_2, NaCl, glucose, fructose, citric acid, dopamine, and ascorbic acid (AA) to 0.1 M PBS (pH 7.4).

Herein, a unique physiochemical approach was adopted for the fabrication of highly porous CuO on the Pt nanoparticles (NPs) namely, the super porous CuO/Pt template demonstrated on Si substrate as shown in Fig.1(a) and the corresponding porous structure is shown in Fig.1(b). This super porous hybrid CuO/Pt platform demonstrates high electrochemical activity and high surface area, high sensitivity, and precision. The unique physiochemical approach was adopted for the fabrication of super porous CuO/Pt platform in two steps, (i) physical vapor deposition of Pt NPs by ion coater, and (ii) CuO deposited by dynamic hydrogen bubbling technique (electrodeposition). The super-porous CuO/Pt hybrid platform demonstrates an enhanced sensitivity of 2,205 µA/mM·cm^2 for the H_2O_2 detection as shown in Figs. 2(a) – 2(a-1). It also shows a low limit of detection (LOD) of 140 nM with a wide-ranging detection and high selectivity towards H_2O_2 as shown in the stability plot Fig.2(b). **This is the first demonstration of** super-porous CuO nanostructures and the hybrid architecture with the Pt NPs for the H_2O_2 sensing [1].

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Author Contributions

Author Contributions: R.K., S.K., R.M., J.-H.J. and J.L. participated in the experiment design and carried out the experiments. R.K., S.K., R.M., J.-H.J. and J.L. participated in the characterizations and analysis of data. J.-H.J. and J.L. designed the experiments and testing methods. R.K., S.K. and J.L. carried out the writing. All authors helped in drafting and read and approved the final manuscript.

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ELECTRONIC, OPTICAL PROPERTIES OF TIO_2 : EXPERIMENTAL AND THEORETICAL INVESTIGATION

A. Soussi[1,*], A. Ait Hssi[1], L. Boulkaddat[1], A. Asbayou[1], H. Najih[1]. R.Markazi[2], A. El Fanaoui[1]

[1]Materials and Renewable Energy Laboratory, Ibn Zohr University, Agadir, Morocco

[2]High School of Technology-Guelmim, Ibn Zohr University, Agadir, Morocco.

ABSTRACT

Titanium dioxide is currently the focus of intensive research because of their interesting chemical, electrical and optical properties. In this work, we report the results of the optimization of the structure, electronic band structure, density of states (DOS), partial density of states (PDOS) of anatase phase of titanium dioxide (TiO_2) using first-principles calculations.

A comparison of a generalized gradient approximation (GGA) and Tran and Blaha's modified Becke-Johnson (TB-mBJ) [1-2] exchange potential within the density functional theory using WIEN2K code [3] are realized. Half-relativistic calculations are performed. We have carried out convergence tests of total energy E_t for TiO_2 as a function of RKmax parameters and as a function of K-points number over reduced Brillouin zone. The calculations were performed in self-consistent way, using the three approximations. So, the (TB-mBJ) calculations show better agreement with experimental data than LDA calculations and GGA calculations.

In the present work, the electronic, optical of titanium dioxide thin films prepared by the sol–gel method and ab-initio pseudo-potential approach based on density functional theory (DFT) are compared. The indirect band gap of the deposited films was found to range between 3.17 and 3.44 eV.

Keywords: Density functional theory, electronic properties, TiO_2, spin-coating technique.

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ÇOK MAKİNALI GÜÇ SİSTEMLERİNDE FARKLI AVR MODELLERİ, POD, UPFC İLE KÜÇÜK SİNYAL KARARLILIĞININ İNCELENMESİ

INVESTIGATION OF SMALL SIGNAL STABILITY WITH DIFFERENT AVR MODELS, POD, UPFC IN MULTI-MACHINE POWER SYSTEMS

Muhammet DEMİRBAŞ

Arş. Gör., Beykent Üniversitesi Mühendislik-Mimarlık Fakültesi Elektrik Elektronik Mühendisliği Bölümü

(Sorumlu Yazar)

M. Kenan DÖŞOĞLU

Doç. Dr., Düzce Üniversitesi Mühendislik Fakültesi Elektrik Elektronik Mühendisliği Bölümü

ÖZET

Son yıllarda teknolojinin gelişmesi, nüfusun hızla artması gibi nedenler elektrik ihtiyacını arttırmakta ve bu ihtiyaç güç sistemlerinin büyümesine ve karmaşıklaşmasına yol açmaktadır. Güç sistemlerinin büyümesi bazı sorunları beraberinde getirmektedir. Bu sorunlardan birisi de kararlılık problemleridir. Güç sistemlerinde kararlılık, güç sisteminin bir denge durumunda çalışmasını ve bozucu bir etki durumunda bu dengeyi koruyabilmesini ifade etmektedir. Güç sistemlerinin maruz kaldığı küçük frekanslı salınımları söndürerek çalışma dengesini koruyabilme yeteneği ise küçük sinyal kararlılığını ifade eder. Bu çalışmada 2 alanlı 4 generatörlü güç sisteminde öz değer analizi yardımıyla küçük sinyal kararlılığı incelemesi yapılmıştır. İncelenen sistemde 6. Derece modeliyle çalışan senkron generatörlere bağlı Güç Sistemi Kararlı Kılıcısı (PSS) model 2, Türbin Yöneticisi (TG) model 2 ve farklı Otomatik Gerilim Regülatörü (AVR) modelleri kullanılmıştır. Koordinasyon kontrolünün sağlanması amacıyla son yıllarda sıkça kullanılmakta olan güç elektroniği tabanlı Esnek AC İletim Sistemi (FACTS) cihazlarından olan Birleştirilmiş Güç Akılı Kontrolü (UPFC) ile Güç Salınımı Sönümlemesi (POD) birlikte kullanılmıştır. Bir MATLAB aracı olan Güç Sistemi Analizi Programı (PSAT) kullanılarak gerçekleştirilen bu çalışma sonucunda, farklı Otomatik Gerilim Regülatörü (AVR) modellerinin UPFC-POD ile birlikte kullanılması durumunda açısal hız ve generatör bara gerilimleri karşılaştırmaları yapılmış ve öz değer analizi ile küçük sinyal kararlılığı incelemesi yapılmıştır. İnceleme sonucunda AVR'nin birinci modelinin ikinci ve üçüncü modele göre daha üstün sonuçlar verdiği ve kararlılık açısından kullanımının daha uygun olduğu görülmüştür.

Anahtar Kelimeler: Farklı AVR Modelleri, UPFC, POD, Küçük Sinyal Kararlılığı

ABSTRACT

In recent years, the development of technology and the rapid increase in the population increase the need for electricity and this need leads to the growth and complexity of power systems. The growth of power systems brings some problems. One of these problems is stability problems. Stability in power systems means that the power system operates in an equilibrium state and maintains this balance in case of a disruptive effect. The ability to extinguish the small frequency oscillations that power systems are exposed to, and maintaining the balance of operation, refers to the small signal stability. In this study, small signal stability analysis has been carried out with the help of eigenvalue analysis in a power system with 2 fields and 4 generators. In this system, type 2 of Power System Stabilizer (PSS), type 2 of Turbine Governor (TG) and different types of Automatic Voltage Regulator

(AVR) were used. In order to provide coordination control, Unified Power Flow Control (UPFC), which is one of the power electronics based Flexible AC Transmission System (FACTS) devices that have been used frequently in recent years, and Power Sway Damping (POD) have been used together. As a result of this study carried out using the Power System Analysis Program (PSAT) which is a matlab tool, in the case of using different automatic voltage regulator (AVR) models with UPFC-POD, angular speed and generator bus voltages, comparisons were made and small signal stability was examined with eigenvalue analysis. As a result of the examination, it has been observed that the first model of the AVR gives superior results compared to the second and third models and it is more suitable to use in terms of stability.

Keywords: Different AVR Models, UPFC, POD, Small Signal Stability

EFFICIENCY CALCULATION OF HYDROGEN FUEL AIRCRAFT

Atul Bhattad

Associate Professor

Department of Mechanical Engineering, Koneru Lakshmaiah Educational Foundation,

Green Fields, Vaddeswaram, (AP), 522502

ABSTRACT

As countries pursue accomplishing net-zero carbon economies, business flying will be perhaps the most troublesome areas to decarbonize. Petroleum derivative's energy-thickness advantage is too difficult to even think about beating, the contention goes, and instead of attempt to defy that, it may bode well to proceed with the utilization of oil in carriers and to target counter balancing their emanations utilizing some negative fossil fuel by products innovation. Some alternatives like bio-fuels are also in use where fuels are blended with some basic fuels.

Another alternative is hydrogen-fuelled flight. To be carbon-unbiased, the hydrogen should be delivered either with environmentally friendly power or with petroleum gas furnished with carbon catch and capacity. Both of the world's significant carrier makers are viewing at the lightest component as one choice for diminishing their client's carbon impression. Use of hydrogen fuel reduces the consumption of fuels and is one of the promising fuel used in future. Amanda Simpson, VP for examination and innovation at Airbus Americas, says Airbus will choose by 2025 whether the market can uphold hydrogen-filled aircrafts. Accepting that it can, the organization projects its first hydrogen aircrafts will enter administration in 2035. In present case, the variation of mass flow rate and fuel consumption rate with respect to thrust force can be seen.

Keywords: Aircraft, Hydrogen, Fuel, Thrust, Fuel consumption, Flow rate

GÜÇ SİSTEMLERİNDE FARKLI BARALARDAKİ ZIP YÜK MODELİNİN YÜK AKIŞI VE KAYIPLAR ÜZERİNDEKİ ETKİSİ

EFFECTS ON POWER FLOW AND LOSSES OF ZIP LOAD MODELING IN POWER SYSTEMS DIFFERENT BUSES

M. Kenan DÖŞOĞLU

Doç. Dr., Düzce Üniversitesi Mühendislik Fakültesi Elektrik Elektronik Mühendisliği Bölümü

(Sorumlu Yazar)

Enes KAYMAZ

Arş. Gör., Düzce Üniversitesi Mühendislik Fakültesi Elektrik Elektronik Mühendisliği Bölümü

Muhammet DEMİRBAŞ

Arş. Gör., Beykent Üniversitesi Mühendislik-Mimarlık Fakültesi Elektrik Elektronik Mühendisliği Bölümü

ÖZET

Günümüzde, teknolojik gelişmeler ve artan dünya nüfusu ile birlikte elektrik güç sistemlerinden talep edilen güçte önemli ölçüde artış meydana gelmektedir. Talep edilen güçteki artışa bağlı olarak güç sistemlerinin planlanmasının ve işletilmesinin önemi her geçen gün artmaktadır. Bir güç sisteminde yer alan generatörlerin çalışma koşullarının belirlenmesinde güç akışı son derece önemlidir. Güç akışı, sürekli durum koşullarında, güç sisteminin her barası için gerilim büyüklüğünün ve faz açısının hesaplanmasıdır. Güç akışı ile sistemdeki aktif – reaktif güç akışları ve kayıplar da elde edilir. Güç akışı probleminin çözümünde, salınım barasının aktif-reaktif güç değerlerinin belirlenmesinde, generatör baralarının reaktif güç-gerilim açısı değerlerinin hesaplanmasında ve yük baralarının gerilim-gerilim açısı değerlerinin elde edilmesinde Newton-Raphson Metodu en sık tercih edilen yöntemlerdendir. Geçmişte, Newton-Raphson Metodu'nun kullanıldığı yük akışı analizlerinde genellikle sabit yük modelleri tercih edilmesine rağmen, bu çalışmada sabit yük baralarının yerine fonksiyon olarak modellenen sabit empedans, sabit akım ve sabit aktif güç (ZIP) yük modeli kullanılmıştır. Benzetim çalışmasında, önerilen ZIP yük modelinin yük akışı ve kayıplar üzerindeki etkisi, Güç Sistemi Analizi Programı (PSAT) kullanılarak IEEE 14-baralı test sisteminde aktif ve reaktif güç kayıpları ile bara gerilim-genlik profilleri açısından incelenmiştir. Elde edilen sonuçlara göre, çok baralı bir güç sistemine ZIP yük modelinin dahil edilmesinin, sabit yük baralarına kıyasla daha etkili sonuçlar verdiği görülmektedir. Ayrıca, sistemdeki farklı baralar için ZIP yük modelinin etkisi değerlendirildiğinde, ZIP yük modeli için toplam kayıplar ve bara-gerilim profilleri açısından 4 numaralı baranın en etkili sonuçları sunduğu görülmektedir.

Anahtar Kelimeler: Güç Akışı, ZIP Yük Modeli, Güç Kayıpları, Bara Gerilim Profilleri.

ABSTRACT

Today, with the technological developments and the increasing world population, the demand for power from electrical power systems is significantly increasing. Depending on the increase in demand for power, the importance of planning and operating power systems is increasing day by day. Power flow (PF) is extremely important in determining the operating conditions of generators in a power system. PF is the calculation of the voltage magnitude and phase angle for each bus of the power system under steady-state conditions. With the power flow, active-reactive power flows and losses in the system are also obtained. In solving the power flow problem, Newton-Raphson Method is one of the most preferred methods in determining the active-reactive power values of the slack buses, calculating the reactive power- voltage angle values of the generator buses, and obtaining the voltage-angle values of the load buses. In the past, although constant load models were preferred in load flow analysis using Newton- Raphson Method, in this study constant impedance, constant current, and constant active power load model modeled as a function instead of constant load buses were used. In the simulation study, the effect of the proposed ZIP load model on load flow and losses was analyzed in terms of active and reactive power losses and bus voltage amplitude profiles in the IEEE 14-bus test system using Power System Analysis Toolbox (PSAT). According to the results, it is seen that the inclusion of the ZIP Load model in a multi-bus power system gives more effective results compared to constant load buses. Moreover, when the effect of the ZIP load model for different buses in the system is evaluated, it is seen that the 4th bus gives the most effective results in terms of total losses and bus-voltage profiles for the ZIP load model.

Keywords: Power Flow, ZIP Load Model, Power Losses, Bus Voltage Profiles.

MULTI-OBJECTIVE OPTIMIZATION OF PERFORMANCE PARAMETERS IN MACHINING AISI 4140.

PHD. Student: Hadjela Salah

Department of Mechanical Engineering, Mechanics and Structure Laboratory (LMS), University 8 may 1945, Guelma, Algeria

ORCID NO: 0000-0003-2994-8033

Dr. Belhadi Salim

ORCID NO: 0000-0002-7277-1600

Pr. Ouelaa Nouredine

ORCID NO: 0000-0002-7962-4988

Pr. Yallese Mohamed Athmane

ORCID NO: 0000-0003-1686-7269

Safi Khaoula

ORCID NO: 0000-0001-9195-1052

ABSTRACT

One of the main goals of manufacturers is to minimize the cost of processing activities. This is achieved by minimizing the cutting force, which reduces the power consumed during the machining process, while also increasing the efficiency of the economically machined parts. The current research conducted an experimental study to determine the influence of cutting parameters (represented by cutting speed (Vc), feed rate (f) and depth of cut (ap)) on tool performance parameters (such as surface roughness (Ra), cutting force) (Fz) and cutting power (Pc). The SNMG-2025 is used for machining AISI 4140 cold work tool steel. In the Taguchi L16 experimental plan [4^3], the response surface method (RSM) and analysis of variance (ANOVA) were used to calculate the influence of the cutting parameters on the output parameters, deriving the mathematical models of surface roughness (Ra), cutting force) (Fz) and cutting power (Pc). The models developed were further applied to carry out an optimization using the desirability function (DF) with the three desired objectives illustrated by the minimum roughness, the cutting force and the minimum power consumed. Finally, a compromise was finally achieved between the parameters represented by the roughness, effort and power.

Keywords: AISI 4140, turning, RSM, Modeling, Optimization.

CBN COATED CUTTING TOOL PERFORMANCE WHEN DRY TURNING OF GREY CAST IRON

Salim Chihaoui[1*] , Mohamed Athmane Yallese[1] , Salim Belhadi[1], Khaoula Safi[1]

[*1] Université 8 Mai 1945, Department of Mechanical Engineering, Mechanics and Structure Laboratory (LMS), Guelma, Algeria.

***ORCID NO: 0000-0001-6461-4667**

ABSTRACT

Cubic boron nitride CBN tools and may be classified among the modern high-performance cutting materials. They are indeed able to machining hard materials with high mechanical properties while ensuring a good machining accuracy, a high productivity and a long service life. They also allow the use of high cutting conditions compared to their metallic carbides and cermet counterparts. They are hence recommended for machining hardened steels and finish machining of cast irons. Machining using CBN tools allows the removal of liquid lubricants by working dry, which is environmentally desirable. Numerous investigations aiming at evaluating the performance of these tools when machining diverse materials were carried out. Grey cast irons are generally considered for industry. Due to their low cost, excellent mechanical properties, good friction and wear feature, they are widely used for the manufacture of various industrial parts such as bushings, drives, gears, flanges, bearings, pulleys, turbines … etc

The present research investigates the performance of a TiN/PVD–coated cubic boron nitride CBN7050 tool when turning the grey cast iron EN-GJL-250. This is performed through carrying out parametric tests. The parametric tests aiming at evaluating the effect of each cutting parameter i.e. the cutting speed (*Vc*), the feed rate (*f*) and the depth of cut (*Doc*) on the cutting forces, the surface roughness and the cutting power. Parametric tests on CBN machining reveal that an increase in (*f*) and (*Doc*) leads to an equal increase in the force components (*Fx, Fy* and *Fz*) while an increase in (*Vc*) leads to a decrease in (*Fx, Fy* and *Fz*). It is observed that the component (*Fy*) is the most sensitive to variations in (*Vc, f* and *Doc*). The roughness (*Ra*) decreases with an increase of (*Vc*) and an elevation of (*f*) leads to a fast increase in (*Ra*). Furthermore, an increase in (*Doc*) results in only a slight increase in (*Ra*). Finally, an increase of (*Vc, f* and *Doc*) amplifies the power (*Pc*). Furthermore, the CBN7050 tool wear behaviour was investigated during the machining of grey cast iron EN-GJL-250. Tool lives reached 7, 18 and 41.5 min when (*Vc*) was varied from 450, 600 and 750 m/min respectively. Finally, a topographical analysis of the machined surface 3D roughness was carried out for different cutting parameters and led to displaying the texture of the surfaces.

Keywords: : Machining, CBN, grey cast iron, Wear, 3D topography.

OBSERVER DESIGN FOR STATE VARIABLE FEEDBACK CONTROLLER BY MATLAB

Amhimmid Q. Almabrouk

Mechatronics Department, Higher Institute of Engineering Technology, Bani Walid, Libya

Dr. Abdussalam Ali Ahmed

Mechanical Engineering Department, Bani Waleed University, Bani Waleed, Libya

ORCID ID: 0000-0002-9221-2902

ABSTRACT

The drawbacks of frequency domain methods of design, using either root locus or frequency response techniques, is that after designing the location of dominant second-order pair of poles, we keep our fingers crossed, hoping that the higher-order poles do not affect the second-order approximation. What we would like to be able to do is specify all closed-loop poles of the higher-order system. Frequency domain methods of design do not allow us to specify all poles in systems of order higher than tow because they do not allow for a sufficient number of unknow parameters to place all the closed-loop poles uniquely. One gain to adjust, or compensator pole and zero to select, does not yield a sufficient number of place all the closed-loop poles at desired locations. Remembers, to place *n* unknown quantities, you need *n* adjustable parameters. State-space methods solve this problem by introducing into the system (1) other adjustable parameters and (2) the technique for finding these parameter values, so that we can property place all poles of the closed-loop system.

On the other hand, state-space methods do not allow the specification of close-loop zero location, frequency domain methods do allow through placement of the lead compensator zero. This is a disadvantage of state-space methods, since the location of the zero does affect the transient response. Also, a state-space design may prove to be very sensitive to parameter changes.

Finally, there is a wide range of computational support for state-space methods; many software packages support the matrix algebra required by the design process. However, as mentioned before, the advantage of computer support are balanced by the loss of graphic insight into a design problem that the frequency domain methods yield.

Keywords: Observer design, State variable feedback, Modern control, Matlab.

MOLECULAR GENOTYPING OF MYCOBACTERIUM TUBERCULOSIS

Turcu Erica[1], Chesov Elena[1], Valeriu Crudu[2]

[1]State University of Medicine and Pharmacy "Nicolae Testemițanu", Republic of Moldova

[2] Phthisiopneumology Institute “Chiril Draganiuc”, Republic of Moldova

ABSTRACT

Background
Data about the resistance pattern of *Mycobacterium tuberculosis* (MTB) strain is critical for the initiation of a proper and in time treatment of multidrug resistance tuberculosis (MDR-TB). Assessment of drug resistance profile of MTB by whole genome sequencing (WGS) can considerably reduce the therapeutic delay in MDR-TB. The level of correlation between the geno- and phenotypic resistance results is not well established yet.

Aim
To assess the concordance between the drug-susceptibility profiles for main antituberculosis drugs of MTB strains assessed by WGS and culture-based drug susceptibility tests (DST).

Methods
The drug susceptibility of MBT for main antituberculosis drugs was assessed by WGS and culture DST on Lowenstein-Jensen media, on a bunch of randomly selected strains of MTB, isolated in patients with MDR-TB and stored in the repository of the National TB laboratory, during the year 2018, in the Republic of Moldova.

Results
Forty-seven MDR-TB strains were included in the study. The geno-phenotypic concordance was: 97,8% for isoniazid; 97,8% - rifampicin; 68,1% - ethambutol, 51,1% - pyrazinamide; 89,4% - levofloxacin; 91,5% - amikacin; 89,4% - capreomycin; 61,7% - ethionamide and 57,5% - PAS. Most common mutations associated with TB drug resistance were for izoniazid (gene katG –S315T), rifampicin (rpoB gene – S450L), ethambutol (embB gene – S297A), pyrazinamide (pncA gene -11a>g).

Conclusion
WGS could be a useful technique for rapid assessment of drug resistance of MTB strains, thus facilitating a faster initiation of effective treatment.

Key words: tuberculosis, genotype, diagnosis

STUDY ON GENETIC DIVERSITY OF GENES FABP3 AND GDF9 IN COOPER-RED SHUMEN AND SYNTHETIC POPULATION BULGARIAN MILK SHEEP BREED

Ivona Dimitrova[1], Milena Bozhilova-Sakova[2], Svetoslava Okyasheva[1]

[1] University of Forestry, Faculty of Agronomy, Sofia

[2] Institute of animal science, Kostinbrod

ABSTRACT

Knowledge of the polymorphic variants of the genes influencing the different productive traits contributes to the selection of the best breeding strategy depending on the production direction of the animals. In this regard, the aim of the present study was to investigate the genetic diversity of the genes FABP3 (fatty acid binding protein 3) and GDF9 (growth differentiation factor 9) in two Bulgarian sheep breeds - Copper Red Shumen and Synthetic Population Bulgarian Milk. Blood was taken from *v. jugularis*, genomic DNA was isolated and 30 sheep of each breed were genotyped by PCR-RFLP method. Specific primers were used to amplify fragments with sizes 222 bp from exon 2 of FABP3 and 462 bp from exon 1 of GDF9. Restriction analysis was carried out using *BseDI* and *HhaI* restriction enzymes for FABP3 and GDF9, respectively. Two alleles and two genotypes (GG and AG) were identified in the FABP3 locus in both sheep breeds, with the highest frequency being the G allele (0.9) and the GG genotype (0.8) in the Copper Red Shumen breed. Two alleles and two genotypes (GG and AG) were also found in the GDF9 locus, the most frequent was the G allele (0.98) and the GG genotype (0.93) also in the Copper Red Shumen breed. The comparison of the studied groups of animals shows a relatively higher genetic diversity in the Synthetic Population Bulgarian Milk compared to the local Copper Red Shumen.

Key words: sheep, breeds, FABP3 gene, GDF9 gene, PCR-RFLP method

INCIDENCE OF VIRAL HEPATITIS C IN ALMATY

Sadvakas A.

Asfendyarov Kazakh National Medical University

ABSTRACT

Viral hepatitis remains one of the pressing health problems not only in the world, but also in Kazakhstan. According to official statistics, 30-50 thousand patients with viral hepatitis are annually registered in the Republic of Kazakhstan. (varies by region from 13 thousand to 30 thousand).

According to the press service and a conference call on the situation with viral hepatitis C, held by the Ministry of Health of the Republic of Kazakhstan on September 12, 2019, it was noted that over the past 20 years, there has been a 2.8-fold decrease in the incidence in the Republic of Kazakhstan (1999 - 229 cases, 2018 year - 79 cases). Despite the decrease in the incidence in terms of the prevalence of viral hepatitis, the Republic of Kazakhstan belongs to a region with high endemicity

In Almaty and the Almaty region, the results of serological studies conducted in 2014 showed that the prevalence of antibodies to hepatitis C was 1.4% in Almaty and 3.3% in the Almaty region, where positive results were more common in individuals in the age category from 60 to 69 years old (4.5%) and among the respondents of Kazakh nationality (3.7%), in comparison with other categories of this feature

Figure 1 shows a graph of the incidence of acute and chronic viral hepatitis, which shows that there is no increase in the spontaneous incidence of acute viral hepatitis. There is no increase in the incidence of chronic viral hepatitis. From 2015 to 2017, there was a gradual decrease in the incidence of chronic hepatitis C and from 2017 to 2019 there is a stable plateau without a tendency to a noticeable increase or decrease.

Keywords: chronic hepatitis C, acute hepatitis C, serological tests, antibodies, increasing incidence, antibodies, health problem.

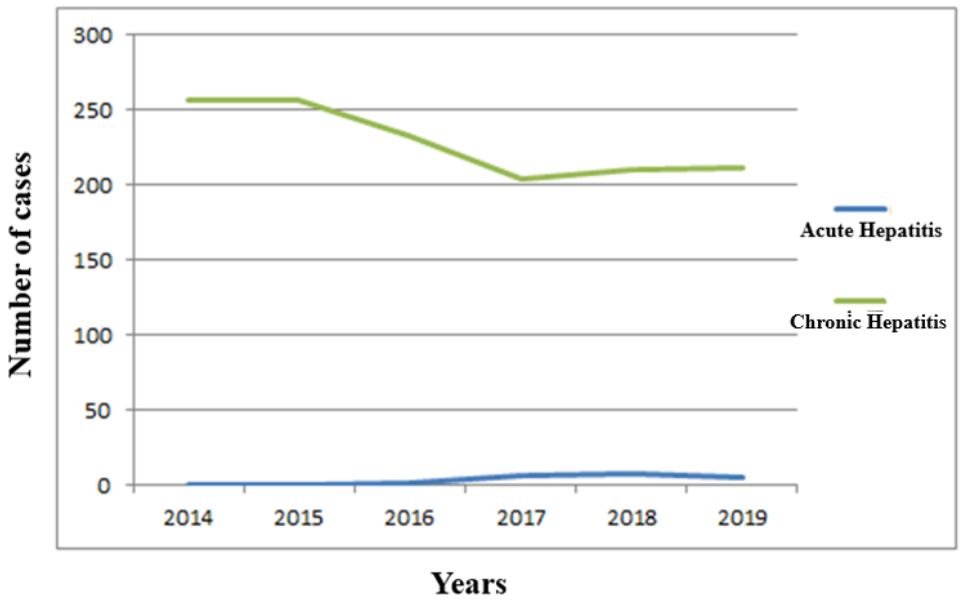

Fig. Graph of incidence in Almaty for 2014-2019

CLINICAL AND EPIDEMIOLOGICAL FEATURES OF LYME BORRELIOSIS

Mykola D. Chemych, Inna V. Lutai, Tetiana A. Husieva, Anna S. Ivanova

Sumy State University. Department of Infectious Diseases with Epidemiology, Sumy, Ukraine

40007, Ukraine, Sumy, Rymskogo-Korsakova, 2

ABSTRACT

Introduction. Lyme borreliosis (LB) is the most common transmissible tick-borne disease. It is a significant medical challenge due to the multisystem defeat and the tendency to chronicity. Currently, there is an upward trend in the incidence of LB. Thus, in Ukraine in 2015 it was 7.96 per 100,000 population, in 2019 - 10.62. The average level of indicators was exceeded in Kyiv Oblast (29.0), Cherkasy Oblast (25.4), Vinnytsia Oblast (23.09), Sumy Oblast (25.89).

Objective. To study clinical and epidemiological features of LB and to assess public awareness about the disease.

Materials. The study was conducted using a sociological survey (face – to-face, one-time, individual) under conditions of confidentiality. We surveyed 56 out- and in-patients with Lyme disease.

Results. A unified anonymous "Questionnaire for Lyme disease patients" contains 16 multiple choice questions and an option for comments. The first group of questions concerned gender, age, and social data of respondents (42.86% of all patients was the working population). The next questions clarified the epidemiological features of this pathology. Most respondents reported that tick bites occurred during walks in the urban forests (42.86% of cases), more often in June and July (39.29%). Other questions were designed to clarify the clinical features of LB (lower extremities were the most frequent site of a tick bite - 46.43%), with erythema dominating among the clinical manifestations of LB(91.07%).

Conclusions. The largest part of patients falls within the working population (42.86%). Most often tick bites occurred during walks in the urban forests (42.86% of cases). The clinical manifestations of LB was erythema (91.07%).

Key words. Lyme borreliosis, morbidity, tick activity.

ИССЛЕДОВАНИЕ МИКРОЭЛЕМЕНТНОГО СОСТАВА РАСТЕНИЯ ЗИЗИФОРА ТОНКАЯ

Дильдабекова Лаззат Анаркуловна, Казахстан г.Шымкент, ЮКМА

Серимбетова Куралай Мухтаровна

Казахстан г.Шымкент, ЮКМА

Базарбаева Гулайым Муталибқызы

Казахстан г.Шымкент, ЮКМА

РЕЗЮМЕ

Зизифора (*Ziziphora L.*) семейство Губоцветные (*Lamiaceae*) включает в себя около 30 видов. Латинское название *Ziziphora,* предположительно, произошло от арабского (или индусского) «Zizi» и греческого слова «-pherein» или «-phoros»- нести, несущий. В Средней Азии зизифора известна как «кик-оты» или «райхан гул», в персидских странах также распространенно название «kakuti-e kuhi».

Род Зизифора семейства Яснотковых насчитывает около 17 видов.

На территории Казахстана произрастают следующие виды рода Зизифора:

зизифора тонкая (*Ziziphora tenuior*), зизифора Бунге (*Ziziphora bungeana*), зизифора пахучковидная (*Ziziphora clinopodidoides*), зизифора Выходцевского (*Ziziphora vichodceviana*), зизифора прерванная (*Ziziphora interrupta*), зизифора памиралайская (*Ziziphora pamiroalaica*).

Растения рода Зизифора - однолетние и многолетние, травянистые или суб-кустарниковые растения.

РЕНТГЕНОЛОГИЧЕСКАЯ НАХОДКА СУБХОНДРАЛЬНОЙ КИСТЫ ПРИ ДЕФОРМИРУЮЩЕМ ОСТЕОХОНДРОЗЕ ВИСОЧНО-НИЖНЕЧЕЛЮСТНОГО СУСТАВА

Ибрагимова Р.С., интерны Майданов А. К. Бижанов Б. З.

Казахский национальный университет им. Аль-Фараби, г. Алматы, Республика Казахстан

РЕЗЮМЕ

Описана клиника деформирующего остеохондроза височно-нижнечелюстного сустава слева, на фоне которого сформировалась субхондральная киста суставной головки. Дана сравнительная оценка информативности отдельных методов визуализации. Анализ клинических наблюдений подтвердил, что компьютерная томография является методом выбора для четкой визуализации и диагностики поражения костных структур височно-нижнечелюстного сустава.

Ключевые слова: Височно-нижнечелюстной сустав, суставная головка, деформирующий остеохондроз, субхондральная киста, компьютерная томография.

X-RAY FINDING OF THE SUBCHONDRAL CYST IN DEFORMING OSTEOCHONDROSIS OF TEMPORAL MANDIBULAR JOINT

Ibragimova R.S., interns Maidanov A. K., Bizhanov B. Z.

Al-Farabi Kazakh National University, Almaty, Republic of Kazakhstan

ABSTRACT

The clinical picture of deforming osteochondrosis of temporal mandibular joint on the right is described against the background of which a subchondral cyst of the articular head was formed**.** A comparative assessment of the informative nature of individual visualization methods is given. The analysis of clinical observations confirmed that CT imaging is a selection method for clearly visualizing and diagnosing damage to the bone structures of the temporal mandibular joint.

Key words: temporal mandibular joint, articular head, deforming osteoarthrosis, subchondral cyst, CT scan.

ОСОБЕННОСТИ КЛИНИЧЕСКОГО ТЕЧЕНИЯ ВНУТРИБОЛЬНИЧНОГО КАНДИДОЗНОГО СТОМАТИТА У ДЕТЕЙ

Каркимбаева Г.А., Асанова Д.Б., Бектурганова Н.Д., Ашел Е.

НАО "Казахский Национальный Медицинский университет"

имени С.Д.Асфендиярова

Кафедра интернатуры по стоматологии

Актуальность проблемы. Исследования внутрибольничных инфекций (ВБИ), обусловленных данной инфекцией, представляют собой актуальную проблему для современной медицины. Рост заболеваемости ВБИ связывают с увеличением частоты применения инвазивных процедур, распространением полирезистентных микроорганизмов, изменением структуры заболеваемости, уровнем культуры населения, степенью развития здравоохранения страны и т.д.

В настоящее время о многообразии клинических проявлений поверхностных кандидозов накоплен обширный материал. К сожалению, мало сведений о внутрибольничных кандидозных инфекциях ротовой полости у детей. Не отражены биологические особенности грибов Candida, выделенных при ВБИ у детей, что имеет безусловное значение при диагностике данного заболевания. **Целью** нашего исследования явилось изучение клинического течения внутрибольничного кандидозного стоматита у детей в сравнительном аспекте.

Материал и методы исследования. Нами было обследовано 216 детей в возрасте от 10 дней до 14 лет с различными инфекционными заболеваниями.

Из этого количества больных у 86 (39,8 %) в полости рта грибы рода кандида не обнаружены. Остальные 130 пациентов (60,2 %) с наличием кандид в полости рта по механизму развития кандидозного стоматита и выявления кандидоносительства были распределены на 3 группы:

Первая группа – кандидоз полости рта у 34 детей (26,1 %) развился в результате экзогенного заражения в больничной среде.

Вторая группа – кандидоз СОПР развился на фоне антибиотикотерапии по поводу основного заболевания 59 (45,4 %);

Третья группа – кандидоносители 37(28,5 %). Эту группу выделяли согласно рекомендациям V Конгресса Интернационального общества по микологии человека и животных (Париж, 1971).

Результаты и их обсуждения. Развитию клинических симптомов кандидозного стоматита у детей предшествовала продромальная стадия: сухость и гиперемия слизистых оболочек, потеря аппетита, иногда рвота и значительное ухудшение общего состояния на фоне клинического выздоровления от основного инфекционного заболевания.

У детей второй группы симптомы кандидозного стоматита соответствовали классическому описанию: влажные белые или кремовые, легко снимающиеся пленочки, напоминающие свернувшееся молоко. Располагаясь на слизистых щек, десен, твердого и мягкого неба, внутренней поверхности губ, такие пленочки могут распространяться до пищевода.

В зависимости от тяжести течения кандидозного стоматита на фоне острых инфекционных заболеваний дети были разделены на 3 подгруппы.

Первую подгруппу составили 23 (24,7±0,3 %) больных ребенка с легкой степенью тяжести течения кандидозного стоматита: на ограниченных участках гиперемия СОПР рта (язык, щеки, губы, небо и т.д.), точечные налеты белого цвета, в дальнейшем могли сливаться в пленки творожистого вида. Налет легко соскабливался, отмечалась яркая гиперемия слизистой оболочки. Обсемененность СОПР – 1×10^3 КОЕ/ тампоне.

Вторую подгруппу составили 43 (46,2±0,5 %) ребенка со среднетяжелой формой кандидозного стоматита. Эта форма характеризовалась наличием пленочного налета на значительных участках спинки или кончика языка, слизистой оболочек щек, губ, твердого и мягкого нёба. На месте удаленного пленочного или крошковидного налета отмечались эрозивные, кровоточащие поверхности. Обсемененность СОПР – 1×10^4 КОЕ/ тампоне.

Третью подгруппу составили 27 (29,0±1,1 %) детей с тяжелой формой кандидозного стоматита. При этом наблюдалось диффузное поражение всей слизистой с включением мягкого нёба, миндалин, язычка и задней стенки глотки. На спинке языка, помимо грибковых наложений, видны участки, лишенные сосочков. Отечность языка, очаговая гиперемия и исчерченность его продольными и поперечными бороздами. Обсемененность СОПР – 1×10^5 КОЕ/ тампон и более.

У больных первой группы клиническое течение внутрибольничного кандидозного стоматита сводилось к подострому течению, с затяжным характером. Главный морфологический элемент – налет, имел бляшечную форму, коричневато – бурого цвета, контуры налета фестончатые ярко-красной окраски. При соскабливании налет легко снимался, обнажая эрозивно-кровоточащие поверхности, возвышение только в участках с эрозивно-афтозными поражениями. При этом имеет место отсутствие сухости ротовой полости.

Данная группа больных детей заразились кандидозом непосредственно в больничной среде, доказательством чего явились данные микробиологического мониторинга детей и объектов больничной среды.

Мы наблюдали кандидозный стоматит у детей внутрибольничной этиологии на фоне острой респираторной вирусной инфекции (ОРВИ), острого герпетического стоматита (ОГС), острых желудочно-кишечных инфекций (ОКИ). Важно отметить нарушения целостности эпителиального покрова СОПР у этих детей, что служило входными воротами для кандид, циркулирующих в больничной среде. Нарушения целостности эпителиального покрова слизистой оболочки зарегистрированы вследствие развития афтозного стоматита при ОРВИ, ОГС, и ОКИ – в фазе экзикоза. Клинически отмечались сухость слизистой ротовой полости, что способствовало образованию трещин, которые служили входными воротами для Candida. Нами отмечены дифференциально-диагностические признаки, характерные для внутрибольничного кандидозного стоматита и кандидоза СОПР на фоне антибиотикотерапии, приведенные в табл. 1.

Таблица 1–Дифференциально-диагностические признаки внутрибольничного кандидозного стоматита и кандидоза СОПР на фоне антибиотикотерапии

Признак	Внутрибольничный кандидозный Стоматит	Кандидозный стоматит на фоне антибиотикотерапии
Анамнез	ОГС; ОРВИ, осложненный афтозным стоматитом; ОКИ (нарушенная	Прием антибиотиков

	целостность эпителия)	
Начало заболевания	Подострое с затяжным характером течения	Острое
Излюбленная локализация элемента поражения	Чаще передние отделы слизистой оболочки полости рта	Любая, при ОКИ чаще язык; при ОРВИ, лакунарной ангине, остром ларингите – вся слизистая ротовой полости, в том числе глотка
Характеристика налета	Обширный бляшечный налет, коричневато-бурого цвета, с неровными краями и обрывками слизистой	В начале заболевания точечные, затем сливающиеся в творожистые пленки, с четкими границами
Состояние слизистой окружающий элемент поражения	Чаще эрозивно-язвенные поражения	Гиперемирована, отечна
Обсемененности СОПР КОЕ/ тампон	От $1x10^5$ КОЕ/тампон и более	От $1x10^3$ до $1x10^4$ КОЕ/тампон
Результат микробиологических исследований	Выявлены госпитальные штаммы грибов Candida с признаками: – полиантимикотикорезистентности; – вирулентности; – способностью образовывать биопленку	Выявлен негоспитальный штамм грибами Candida с признаками низкой: – вирулентности; – чувствительность к антимикотикам и дезинфектантам; – способностью образовывать биопленку

Наш клинический материал, полученный в результате наблюдения большого количества детей с кандидозом ротовой полости, развившимся на фоне инфекционных заболеваний, позволяет предложить данные по срокам появления налета при кандидозном стоматите внутрибольничной этиологии (табл. 2).

Таблица 2 – Срок появления налета у больных с кандидозным стоматитом на фоне инфекционных заболеваний

Срок налета	ОРВИ	ОРВИ, Отит	Лакунарная ангина	ОГС	ОКИ	Острый ларингит

1-2 день	-	16,7%	-	-	10,0%	16,7%
3-4 день	-	58,3%	85,7%	-	50,0%	75,0%
5-6 день	9,1%	25,0%	14,3%	27,3%	10,0%	8,3%
7-8 день	63,6%	-	-	72,7%	20,0%	-
9-10 день	27,3%	-	-	-	10,0%	-

Заключение. Таким образом, наши наблюдения показали, что заражение детей дрожжеподобными грибами Candida в больничной среде происходит за счет обсемененности объектов больничного обихода, через руки матерей и предметы ухода за детьми. При этом, необходимо учитывать в первую очередь слабость защитных реакций и непривычное воздействие больничной среды, наличие таких предрасполагающих моментов, как нарушение целостности и барьерных функций эпителия слизистой полости рта, высокую степень обсеменения организма ребенка патогенными госпитальными штаммами грибов рода Candida.

В заключении можно сказать, что типичность проявлений – островчатые, легко снимающиеся, творожистые пленки на неизмененных слизистых оболочках при негоспитальном кандидозе, бляшки коричневато-бурого цвета при кандидозном стоматите внутрибольничной этиологии, обилие псевдомицелия и почкующихся клеток при микроскопическим исследовании и выделение культур – позволяют правильно диагностировать кандидозные поражения ротовой полости.

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THE VARIATION OF WASTEWATER PH IN THE GRIT CHAMBER

PhD Student I.Bouras

Hydraulics department,

Université L'arbi ben m'hidi, 04000 Oum elbouaghi, Algeria

Prof. Dr. F. Sekiou

Hydraulics department

Université L'arbi ben m'hidi, 04000 Oum elbouaghi, Algeria

ABSTRACT

Wastewater from industries and communities should not be directly discharged into the natural environment, because without treatment it can cause serious environmental and public health problems. For this reason, wastewater treatment plants are set up and one of the essential works is the grit chamber. The grit chambers are installed at the head of a wastewater treatment plant in order to reduce the impact of sand particles on downstream equipment and processes. This settling process must therefore be designed and operated efficiently.

In this work we studied the variation of physicochemical parameters in the grit chamber such as the ph (hydrogen potential) which favors the bacterial behavior of the wastewater to have an idea on its evolution from the surface to the depth and from the inlet to the outlet of the grit chamber in order to define the optimal value to ensure a high efficiency, and then we compared the results obtained to the standards of the wastewater, on the other hand, we studied the variation of this parameter according to the quality of the water

for this purpose, a set of samples was taken at different points in a rectangular aerated grit chamber composed of two channels, using a sampling instrument, and then the measurements of the pH were carried out using a ph-measuring instrument at the laboratory level, at the end the results obtained are then discussed.

Keywords: wastewater, grit chamber, ph.

DEVELOPMENT OF STRUCTURAL INTERACTING TECHNOLOGIES SCHEME FOR TRAINING OF NEURAL NETWORKS

Ruzudzhenk S.

KhNU, Kharkiv, Ukraine

ABSTRACT

An artificial neural network (NN) is a device of parallel computing, which consists of many interacting processors. Such processors are usually very simple, unlike those used in computers. Each of them works only with signals that it receives and sends at certain intervals. However, when combining such locally simple elements into a sufficiently large network with controlled interaction, it is possible to solve a wide range of quite complex problems.

The most important property of NN is the ability to learn based on the processing of environmental data and as a result of learning to increase the level of system performance. Productivity increases over time, according to certain rules. NN training takes place through an interactive process of adjusting synaptic weights and thresholds. At best, NN acquires new knowledge about the environment at each iteration of the learning process.

In the course of this work, a study of technologies used to teach neural networks without a teacher (unsupervised learning), features and methods of teaching neural networks to solve NLP (Natural Language Processing). Features of natural language processing (NLP) for learning neural networks, methods of morphological, lexical, syntactic, semantic, discourse analysis, methods of classification and clustering of text data, the process of vocabulary formation were considered. Technologies of vector representation of the text, the process of predicate formation (Claim) and its negation (Claim Negation), as well as the process of synthesis of new predicates (Claim Synthesis) are described.

The aim of the work was to develop a structural scheme of interacting technologies for learning neural networks on the example of solving two basic problems of natural language processing – text analysis (Natural Language Understanding, NLU) and text generation (Natural Language Generation, NLG). The proposed scheme allows to understand the principles of training the network to work with NLP and demonstrates the basic technologies used for this purpose.

Key words: neural network, unsupervised learning, natural language processing.

Information about the author

Ruzudzhenk Sabina – student of Computer Science Department, Kharkiv V.N. Karazin National University, Maidan Svobody, 4, Kharkiv, Ukraine, 61022.

Research interests: artificial intelligence; neural network training; natural language processing technologies.

THE EARTHQUAKES IMPACT ON STORAGE RESERVOIRS FOR ENVIRONMENTALLY HAZARDOUS LIQUIDS

Elena Sierikova, PhD

National University of Civil Defence of Ukraine, Kharkiv, Ukraine

ORCID ID: 0000-0003-0354-9720

Elena Strelnikova, Doctor of Technical Sciences

A.M. Podgorny Institute for Mechanical Engineering Problems NAS of Ukraine, Kharkiv, Ukraine

ORCID ID: 0000-0003-0707-7214

Denys Kryutchenko, PhD student

A.M. Podgorny Institute for Mechanical Engineering Problems NAS of Ukraine, Kharkiv, Ukraine

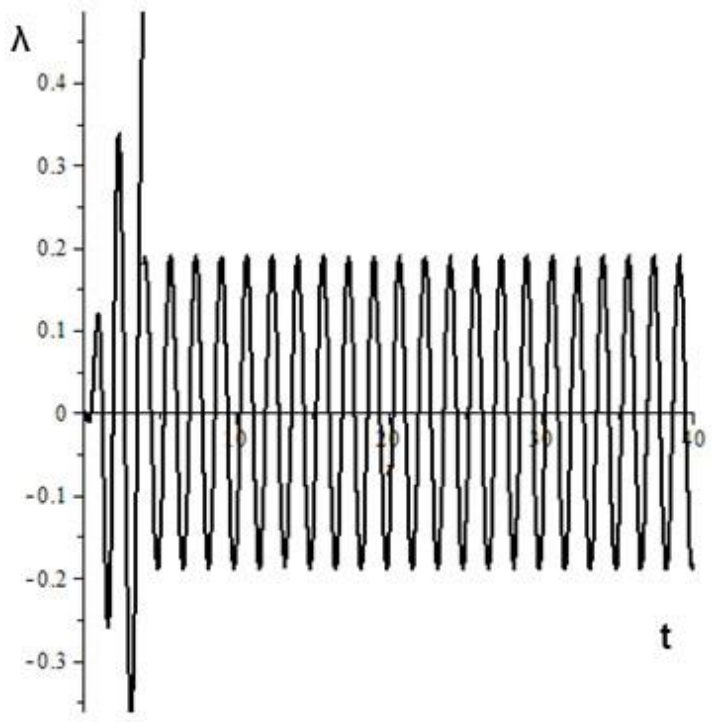
ORCID ID: 0000-0002-6804-6991

ABSTRACT

One of the current problems of mechanical engineering, energy, oil and gas industry, chemical industry is to ensure reliable, trouble-free and efficient operation of storage tanks for environmentally hazardous substances (EHS). Damage and destruction of such facilities lead to environmental pollution and emergencies. Tanks filled with EHS, even in normal operation, belong to the sources of uncontrolled emissions of vapor-gas mixtures and spills of EHS with the subsequent occurrence of fires and explosions. Reservoirs could be operated in hard-to-reach places under conditions of complex loads exposure, which often exceed the calculated values and are characterized by the most stringent conditions to preserve their integrity and prevent leakage of EHS. For environmentally hazardous facilities, it has been important to constantly monitoring their technical condition, monitoring the condition of the surrounding area, which they could affect, assess of natural and technogenic factors affecting these facilities, operational loads assess, prediction the changes in technical condition and prediction the impact of factors of various origin.

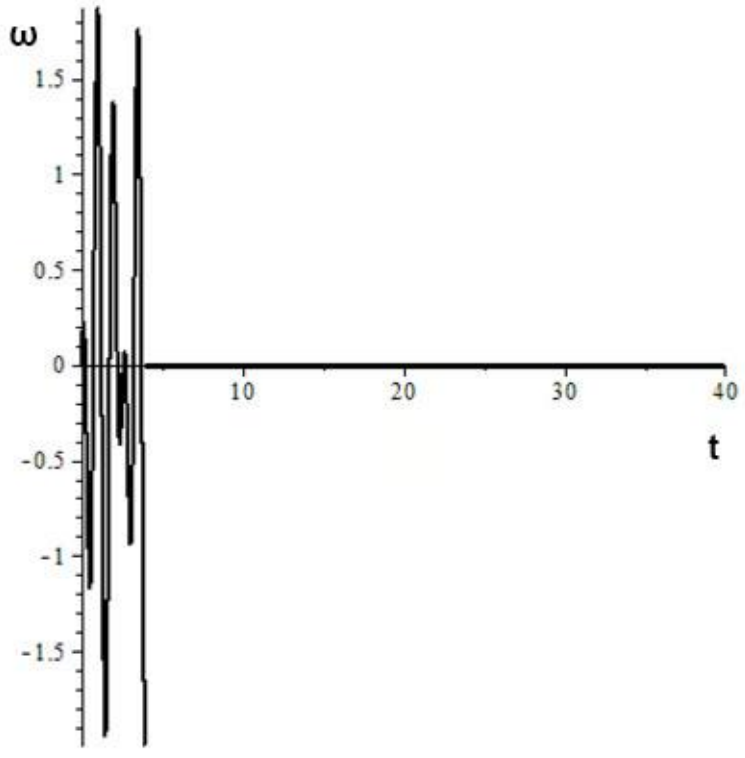
Therefore, the urgent issue has been to improve the forecasts of possible technogenic and natural impacts on reservoirs for the preservation of EHS, operated in critical conditions, to ensure their trouble-free operation and prevention of emergencies [1-3]

The seismic acceleration from an earthquake and its effect on the amplitude of liquid rise in the cylindrical tank has been provided in the paper (Pic. 1,2).



Pic. 1. The rise amplitude of the liquid in the cylindrical tank

λ –rise amplitude of the liquid, m; t – time, sec.



Pic. 2. Seismic acceleration from the earthquake

ω – seismic acceleration, Hz; t – time, sec.

The liquid in the tank rises by 40 cm, which could lead to liquid spillage. If the tank has completely filled with liquid, it will put excessive pressure on the tank lid. At t = 4 sec, the

amplitude λ = 2 m, ω = 2 Hz. That corresponds to the earthquake of 6 points with the distance epicenter of 200 meters.

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SYSTEMATIC SURVEY OF MUTATION TESTING – ROOKIES VANTAGE POINT

[1]Dr G Lalitha Kumari [2]Mrs Y Surekha [3]Dr. K. Koteswara Rao [4]Mr N Ramesh Babu

[3]Associate Professor, [2]Asst Professor, [1]Sr Asst Professor

[123] Department of CSE, Prasad V Potluri Siddhartha Institute of Technology, VIjayawada,

[4]Assistant Professor, RGKUT,Srikakulam, Andhrapradesh, INDIA

ABSTRACT

Mutation testing is a fault based testing strategy that had been broadly studied more than three decades. Change testing is an intense yet entangled and computationally costly testing strategy .In this testing approach, purposeful erroneous lines of codes are infused to check programming capacity to deliver comes about that are not quite the same as the right or unique code. It is a system which guarantees the nature of test info information by looking at whether the test information can recognize an arrangement of substitute projects by speaking to particular sorts of flaws from the program under test. Change investigation is generally thought to be awesome approach for testing and consequently it is frequently used to assess the test criteria as far as its transformation ampleness score. The writing on Mutation Testing has contributed an arrangement of methodologies, instruments, improvements, and exact outcomes. This paper gives a complete examination and review of change testing. This investigations gives confirm that Mutation Testing strategies and apparatuses are achieving a condition of development and appropriateness, while the point of Mutation Testing itself is the subject of expanding premium.

Index Terms*:* Mutation Testing, Mutant, Mutant adequacy score, Syntax Errors, cost, Mutant operators

MACHINE LEARNING AND IOT TECHNOLOGIES FOR ENVIRONMENTAL ISSUES- RESEARCH PERSPECTIVES

[1]Dr. K. Koteswara Rao [2]Dr G Lalitha Kumari [3]Mrs Y Surekha [4]Mr N Ramesh Babu

[1]Associate Professor, [3]Asst Professor, [2]Sr Asst Professor

[123] Department of CSE, Prasad V Potluri Siddhartha Institute of Technology, VIjayawada,

[4]Assistant Professor, RGKUT, Srikakulam, Andhrapradesh, INDIA

ABSTRACT

The most beautiful thing that is created by the almighty God is the nature, to protect nature we need better environment, it means surroundings in particular geographical area particularly affected by human activity. Unscientific approaches has impacted the environment and there by various calamities surfaced like, the classical example is present pandemic in the form of COVID-19, on similar lines nobody knows about what other disaster or calamity can appear in future, hence to protect the environment, technology need to be used for offering solutions to existing problems.

The fundamental classification given by various Research and Development Giants or organizations for environment is into three categories

1. Natural Environment: It includes water, light, land, air and other organisms that live on the earth which are gifted by god.
2. Industrial Environment: It includes cities, villages, factories and all human synthesis
3. Social Environment: It includes authorities, schools, companies other establishments and communication ways.

Lot of differences are there between past and now a days environment. In the past environment people lived in tabernacles, huts, they do not have any electronic machines, motor vehicles etc. They lived in simple life. In these days of Information Technology epoch software, electronic machines, vehicles have become lifeline of human activity. It may not be hyperbole if someone states that our lives will come to standstill if every machine in the universe stops working. As per the present environmental context the environmental concerns are 1. Global warming 2.Climate Change 3.Air and water pollution

Predicting Environmental changes due to degradation of quality, many software Giants/organizations are encouraging their research and Development divisions to find the solutions by developing business model in order to generate a separate revenue and creating the opportunities for peers, For example IBM research had a separate wing for finding

1. Innovative solutions to protect our environment and natural resources

2. Real solutions to protect and preserve our environment.

In the world wide today so many countries announced that it will expand its green horizons Initiative Globally, which is an initiative to improve harmonious relationships of human with the environment. The new horizon engagements apply Machine Learning and IOT technologies to ingest and learn from huge amounts of big data for improving accuracy to create most accurate environmental Forecasting systems. They include

1. Delhi Dialogue Commission

2. Pilot program in South Africa

3. U S department of energy's sun shot initiative.

Inspired by the Research and Development activities of companies across the globe.

I believe Academician can more or less equally contribute to suggest a solution for existing environmental challenges or issues, with this idea back in mind we from CSE department applied STTP program in order to create a platform for academic experts to explore their creative ideas, fortunately AICTE sanctioned this Programme under AQIS.

In these days of Information Technology epoch Machine Learning, Deep Learning, IoT and Big data became buzz words, ML is an application of AI that provides systems, the ability to automatically learn and improve from experience without being explicitly programmed.

IoT describes network of physical objects or things that are enabled with sensors, software other technologies .For the purpose of connecting and exchanging the data with other devices and systems over the internet. Now a day's most environmental challenging tasks are weather forecasting, Air pollution, Hence experts are delivered the lectures on

1. Rainfall prediction using Machine Learning
2. Air pollution prediction using Machine Learning and IoT
3. Weather Forecasting using IoT analytics

STUDY OF CORROSION RESISTANCE UNDER MICRO-CRACKS AND MECHANICAL PROPERTIES OF SUPERHYDROPHOBIC CONCRETE

Lulu Lei and Qing Wang

Shandong University of Science and Technology, Qingdao, China

ABSTRACT

The superhydrophobic concrete with good integral hydrophobicity and anti-corrosion property is prepared by hydrophobic additive method and surface polishing. The wettability of the prepared superhydrophobic concrete under different pH values is studied. In addition, the compressive strength and water absorption rate of superhydrophobic concrete are explored. In order to expand the application field of super-hydrophobic concrete, super-hydrophobic surface is obtained by coating super-hydrophobic concrete powder on the surface of other materials. Furthermore, in the presence of micro-cracks, the anti-corrosion property of superhydrophobic concrete is studied. It is expected that the proposed method may have potential applications to improve the durability and corrosion resistance of coastal concrete structures.

MICROCAPSULE TYPE LONG-LASTING PHOSPHORESCENT PROBE FOR CONCRETE CRACK MONITORING

Yao Li and Qing Wang

Shandong University of Science and Technology, Qingdao, China

ABSTRACT

A microcapsule type damage sensing material with PMMA as the shell material and long-lasting phosphorescent dye as the core material was proposed. When the cracks occur and propagate on the structure surface, the phosphorescent microcapsules will be ruptured and then highlight the crack area by phosphorescence after exposing to ultraviolet light. A series of work around the preparation, characterization and performance testing of the microcapsules was carried out. The results indicated that the microcapsules have good environmental stability and can adapt to the expression of damage under various light conditions.

DESIGN OPTIMISATION OF ANKLE JOINT PROSTHESIS USING ADVANCED COMPUTATIONAL TECHNIQUES

Saathwik Vaidya, Dhruv Garg, Subrata Mondal, and Ankit Gupta

School of Engineering, Shiv Nadar University, NH-91, Tehsil Dadri, Greater Noida, Uttar Pradesh 201314

ABSTRACT

Total ankle replacement (TAR) is a common treatment method for overcoming problems related to ankle arthritis and fracture. Aseptic loosening of the tibial or talar component is a major issue of failure for TAR and revision arthroplasty. This study aims at comparing the stress pattern developed at the ankle joint between a customized prosthetic and a standard size prosthetic. Three-dimensional finite element (FE) models of intact ankles were developed using computed tomography data sets and then modeling was done of the prosthetic according to the size of the joint. Stress analysis was carried out on the 3D models and results were plotted. The present study suggests that developing customized prosthetics specific to patient can reduce aseptic loosening and increase the durability and life of prosthetic. Results from studies provide early clinical evidence that preoperative CT scan–derived patient-specific surgical plans and guides can help provide accurate and reproducible TAA radiographic alignments. The present analysis has number of limitations and assumptions relating the involvement of tissues and loading conditions.

THE INFLUENCE OF UPPER SURFACE STRUCTURE AND SIDEWALL STRUCTURE ON THE WETTABILITY OF WATER DROPLETS

Mingya Zhang and Qing Wang

Shandong University of Science and Technology, Qingdao, China

ABSTRACT

Wetting characteristics of nanodroplets on solid surfaces with nanostructures were investigated through molecular dynamics simulations. The effects of the upper surface structure and sidewall structure on the surface wettability were studied. Furthermore, the wettability on different surface morphologies was compared systematically. It is found that gecko claw-like pillars tend to exhibit better hydrophobicity than ordinary pillars. However, the increase of surface characteristic energy and primary groove width can weaken the advantage of gecko claw-like pillars. The influence of sidewall structure on hydrophobicity is stronger than that of upper surface structure. Moreover, the contact angles gained from simulation were compared with the theoretical prediction values. It is expected that this study may have potential guiding significance in designing surface hydrophobicity.

TYPES OF REPEATERS IN COMMUNICATION CHANNELS

Nagashbek SS

Ph.D. Kopbalina KB

Karaganda State Technical University

ABSTRACT

A repeater is a communication equipment that connects two or more radio transmitters at a great distance from each other.

Active repeater-a receiving and transmitting radio-technical device located at intermediate points of radio communication networks, amplifying the received signals and transmitting them further. As an intermediate point, a stationary object can be used, as well as a mobile object equipped with signal retransmission equipment, such as a car, aircraft, ship, communication satellite, etc. An active repeater will have an antenna (or multiple antennas), a radio receiver, a radio transmitter, an electrical power source, means of remote control and monitoring of equipment, and automation tools.

The medium through which radio signals propagate has a high level of linearity (this is typical only for wired communication lines). Therefore, all nonlinear distortions observed in the channels are caused by the equipment that is part of the channel (with the output cascades of the transmitter, the input cascades of the receiver and intermediate amplifiers-repeaters). Intermediate amplifiers can be divided into two types:

- linear (analog);

- nonlinear (numerical).

Both types are used in Wired and radio relay communications.Currently, digital amplifiers are being evaluated for interference-protected communication channels. In digital channels, intermediate repeaters are used, which consist of a modulator and a demodulator (nonlinear devices). The signal is distorted by additive and multiplicative interference at each section between the repeaters, but if the section length is insignificant, these distortions do not make sense to lead to erroneous demodulation.Therefore, the demodulator of the repeater restores the approximate discrete signal together acting at the input of the previous modulator.

ESTIMATING THE LIFETIME OF PHOTOVOLTAIC MODULES UNDER DESERT ENVIRONMENT

Badreddine Limane [1]

[1] University of 8 mai 1945, 24000 Guelma, Algeria

ORCID ID: 0000-0003-3251-9854

ABSTRACT

Photovoltaic module is a device that convert part of a solar radiation into electrical energy by using semiconductor material that exhibit a photovoltaic effect. It is composed of layers of different materials connected with each other. In the field operating, the mismatch of the coefficient of thermal expansion (CTE) and a daily temperature fluctuation induce thermomechanical stresses in the PV module, which induces the failure causes of PV module such as delamination, cracking of a solar cell and breaking of a copper ribbon. The second highest percentage of failure causes of PV modules is a copper interconnects breakage (around 41 %), this is due to their small size compared to the other components. Therefore, in this work, we use finite element analysis to evaluate the life of the PV module based on the fatigue life of the copper interconnects in the Saharan region.

Key words:

Photovoltaic module, Thermomechanical ,Fatigue life, Finite Element Analysis, Copper interconnects

READINESS AND ACCEPTANCE TOWARDS DRONE TECHNOLOGY IN MALAYSIAN AGRICULTURE: STUDY IN THE NORTHERN STATES OF PENINSULAR MALAYSIA

Dr. Wan Nadzri Osman, Dr. Faisal Zulhumadi, Associate Professor Dr. Mohamed Najib Salleh

School of Technology Management and Logistics, Universiti Utara Malaysia

ABSTRACT

The technological revolution today has not only affected various sectors, especially in the manufacturing and construction sectors that contribute greatly to a country's GDP, in conducting operations, but has also successfully changed the previously traditional methods of operation of the agricultural sector. In the agricultural sector today, there are various technologies that have been introduced from time to time for the purpose of facilitating and revolutionizing the agricultural activities themselves, which can result in greater crop yields. Among the latest technologies that have been introduced today in the agricultural sector is the use of drone technology in facilitating the daily activities of paddy farmers. This study was conducted to investigate the readiness and acceptance of drone technology use in agricultural activities involving paddy cultivation in northern states of Malaysia, including Perlis and Kedah. These two states were selected based on their high paddy production capacity. The objectives of this study were to identify the readiness and acceptance of farmers to drone technology, identify the skill level of farmers or drone service providers, identify factors that hinder the development of drone technology, investigate additional training aspects required, as well as viable business opportunities through the development of drone technology. This study used both quantitative and qualitative data collection methods. For the quantitative study, questionnaires were distributed among farmers to see to what extent they were prepared and accepted the use of drone technology in assisting their agricultural activities. Meanwhile, qualitative methods were used by interviewing agricultural agencies involved in managing paddy fields in the states involved. Additional interviews were also conducted with drone service operators regarding their operations as well as their perspectives on drone technology development in agriculture. The data obtained were analyzed using SPSS and NVivo software accordingly. The study found that farmers have begun to accept the use of drone technology, especially for the purpose of spraying pesticides. Drone service providers were also found to have good skills and competencies in operating drones for agricultural activities and the majority of drone service providers agreed that drones have a bright future to be developed as one of the branches in the business field.

Keywords: Drone Technology Development, Technology Readiness, Technology Acceptance, Paddy Farmers, Malaysia

AIR POLLUTION MONITORING IN URBAN SITE OF ALGIERS

Meriem Zebani[1], L.Bounemia[2], A.Azbouche[2], A.Moulla[2], Z.Melzi[2]

[1] M'Hamed Bougara University of Boumerdés

2 NUCLEAR RESEARCH CENTRE OF ALGIERS (CRNA), ALGIERS (ALGERIA)

ABSTRACT

The objective of this study relates to characterization and assessment of air pollution by fine particles PM2.5 in an urban site located in Algiers nuclear research Centre. 43 samples were collected from November 3rd, 2020 to March 30th, 2021, using an air LVS sampler leinfiltergerät (KFG) type. The polycarbonate filter with 0.45µm porosity was used; the sampling was carried out two times by week during 24 hours. The air flow rate fixed in this work was 2.6 m^3/h. The variation of the of $PM_{2,5}$ concentration values were found between 1 µg/m^3 and 145 µg/m^3 , with a high pollution indicators according of the world organization of health (WHO).

The qualitative analysis was carried out using the Energy dispersive X-ray fluorescence spectrometry (ED-XRF). Many metallic elements such as: Cr, Ni, As, Pb, Mn, Fe, La, Zn, Mo, Sr, Al, Zr were detected. The Hysplit trajectory model showed that the source pollution was coming from the eastern north.

Keywords: Air pollution, ED-XRF, fine particles, Hysplit,

EFFECT OF CLIMATE PARAMETERS ON BLACK CARBON CONCENTRATION IN PM2.5 AT URBAN SITE OF ALGIERS

N.Loghbi L.Bounemia, A.Azbouche, A.Moulla, Z.Melzi

[1] M'Hamed Bougara University of Boumerdés

2 Nuclear Research Centre of Algiers (CRNA), Algiers (Algeria)

ABSTRACT

Black carbon (BC) is considered a reliable indicator of air pollution at a regional scale. It comes from incomplete combustion of fossil fuels. According The World Health Organization report, the BC has a strong impact on cardiovascular system. The aim of this work is the determination of the atmospheric black carbon concentration in PM2.5 and its impact on the environment.

43 samples of PM2.5 were collected from November 3rd, 2020 to March 30th, 2021, using an air LVS sampler leinfiltergerät (KFG) type, in urban site of Algiers.

The black carbon concentration was determined by Smoke Stain Reflectometer. The concentration of the black carbon found was varied between 2 and 22 $\mu g/m^3$. After that, the correlation between PM2.5 and black carbon were studied in 43 samples, the results shows that there is no correlation exist between the black carbon concentrations and the PM2.5.

Considering the meteorological parameters wind speed and wind direction, data analysis indicates that the BC concentration is mainly influenced by regional and/or long–range transport and local sources at urban site study.

Key words*:* Black carbon, PM2.5, LVS sampler, climate condition affects, Environment

FUZZY TOPOLOGICAL B- ALGEBRAS

S. Nivetha[1] and M. Chandramouleeswaran[2]

[1]Department of Mathematics,

Sri Ramanas College of Arts and Science for Women,

Aruppukottai. Tamilnadu. India

[2] Head (Retd.), PG and Research Department of Mathematics,

S.B.K. College, Aruppukottai, Tamilnadu, India.

ABSTRACT

In 2002, Negger and Kim introduced the notion of β- algebras. In 1965, Lofti A Zadeh, introduced the notion of fuzzy sets and fuzzy logics as a reformulation of the classical concepts in the fuzzy setting Chang gave the definition of fuzzy topology. The theory of topological rings discusses how a ring structure enriches several topological operations. In 2011, Deb Ray introduced the notion of left fuzzy topological rings which studied the behavior of the fuzzy topology in presence of the ring operations. In the year 2013, Ansari and Chandramouleeswaran fuzzified the structure of β- algebras which have two binary operation resembling a ring structure. This paper discusses the fuzzy topological spaces on a β- algebra and introduced the notion of fuzzy topological β- algebras where the two binary operations are presumed to be continuous in the sense of topology defined on the β- algebra.

DESIGN AND COLD FLOW SIMULATION OF A SUPERSONIC SINGLE BELL NOZZLE

N. Boughazi and A. Haddad

Department of Mechanical Engineering,

LMANM, Université 8 Mai 1945, BP 401, 24000 Guelma, Algeria

ORCID NO: 0000-0002-5633-4662

ORCID NO: 0000-0002-3740-2009

ABSTRACT

A supersonic nozzle (or de Laval nozzle) is a convergent-divergent device located between the combustion chamber and the external environment to deliver the thrust needed for the propulsion of aircraft and rocket engines. It accelerates the combustion gases to speeds higher than that of the sound by guiding them through the convergent section, the throat and finally the divergent section, and uses both the stagnation temperature and pressure generated in the combustion chamber to achieve this purpose. The bell type geometry nozzle adopted in the present study is nowadays the most commonly used shape for rocket nozzles as it not only offers significant advantages in terms of size and performance over its conical counterpart but also reduces complexity compared to its annular counterparts. It moreover generates substantial thrusts in shorter lengths and consequently lesser weight.

The numerical approach applied for the design is based on the method of characteristics as a first step. Once done, the profile that resulted is further truncated to gain weight without losing too much in performance. The flow field within the truncated configuration is then simulated in 2D through the application of commercial software represented by Ansys-Fluent that applies the Finite Volume Method (FVM) which is a flexible approach as it may be adapted to a wide range of digital problems. This makes it a universal tool for numerically solving differential equations.

The results are mostly obtained in terms of the evolution of the static pressure and Mach number within the supersonic section. They are compared to a similar investigation whose results are available in the specialized literature. Good agreement was achieved between the several components of the study.

Keywords: CD nozzle, Design, Simulation FEM, Supersonic expansion

UDC 539.3

ABOUT THE METHOD FOR REDUCING THE STRESS CONCENTRATION AROUND THE CIRCULAR HOLE IN THE PLATE THROUGH ELLIPTIC INCLUSIONS

Eteri Hart[1]
Dr. Sci. (Phys.-Math.)
Professor of the Department of Theoretical and Computer Mechanics
Oles Honchar Dnipro National University, Dnipro, Ukraine
ORCID NO: 0000-0002-6075-2269
Yaroslav Rybalko[2]
PhD student
Oles Honchar Dnipro National University, Dnipro, Ukraine

ABSTRACT

Most real structures have features (cutouts, grooves, holes, etc.) that cause stress concentration. The concentration of stresses is observed in the vicinity of such structural features, as well as in the contact zones of deformable solids. Analysis of structural elements failure shows that the overwhelming majority of breakdowns, the formation of brittle, fatigue cracks and other reasons for the loss of the bearing capacity of structures occur, as a rule, near these concentrators [3, 4]. Taking into account the effect of local concentrators on the stress-strain state of elastic media, in particular plates, and methods for reducing the stress concentration in thin-walled structures is an urgent problem in the mechanics of a deformable solid. When studying the stress-strain state of structures with inhomogeneities, it is advisable to use numerical methods of mechanics, which, in contrast to analytical ones, are sufficiently universal and effective for solving the specified class of problems. By using inclusions of different geometric shapes and mechanical properties around the holes, the stress distribution in the body and the stress concentration can be influenced [1, 2].

In this paper, we investigated the stress-strain state of a rectangular plate with one circular hole, two and four elliptical inclusions from another material symmetrically located around it at an angle of 30º relative to the horizontal axis. The plate is subjected to a uniaxial uniform tensile load. A finite element analysis of the effect of the distance between the hole and the inclusions, their number, arrangement method and mechanical properties on the stress concentration around the hole has been carried out.

The results of the computer simulation of the effect of the elliptical inclusions surrounding the circular hole on the coefficient of stress concentration in the plate revealed that in the presence of "hard" inclusions located in a certain way, it is possible to reduce the stress concentration around the hole by more than 30%. This opens up the possibility of controlling the stress concentration around the hole due to a certain arrangement of inclusions with different mechanical properties.

Keywords: rectangular plate, circular hole, elliptical inclusions, stress concentration factor, finite element method.

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MODELING BASED ON RSM OF CUTTING PARAMETERS WHEN DRY TURNING OF GLASS FIBER REINFORCED POLYAMIDE (PA66-GF30%) WITH METAL CARBIDE TOOLS

PHD. Student: Haoues sabrina

Department of Mechanical Engineering, Mechanics and Structure Laboratory (LMS), University 8 may 1945, Guelma, Algeria

ORCID NO: 0000-0001-5203-9116

Prof. Dr. Mohamed Athmane Yallese

University 8 may 1945, Guelma, Algeria

ORCID NO: 0000-0003-1686-7269

Dr. Belhadi Salim

University 8 may 1945, Guelma, Algeria

ORCID NO: 0000-0002-7277-1600

Prof. Dr. Alper Uysal

Yildiz Technical University, Faculty of science and technology

ORCID NO: 0000-0002-5513-4431

PHD. Student: Safi Khaoula

University 8 may 1945, Guelma, Algeria

ORCID NO: 0000-0001-9195-1052

ABSTRACT

Polyamide composites find many applications in engineering fields due to their preferred properties and have thus replaced many traditional metallic materials. In order to increase the properties, glass fiber is added to unreinforced polyamide. In this work, a modeling study of the cutting conditions (Vc, f and ap) on the performance parameters such as; surface roughness (Ra), cutting power (pc) was performed. The machining tests were performed during dry turning of polyamide reinforced with 30% glass fiber (PA66-GF30%) using a metal carbide cutting tool following the orthogonal plane (L9) of Taguchi (33). Response surface methodology (RSM) and analysis of variance (ANOVA) were used to establish mathematical prediction models and to define the significant factor affecting the response parameters. The results found indicate that the most significant factor affecting the surface roughness (Ra) is the feed rate (f) with a contribution of (55.09%), it is followed by the cutting speed (Vc) with a contribution of (35.68%) and coefficient of determination R^2= 95.83%, while the ANOVA of (Pc) presents that both factors (Vc and ap) is significant with contributions (39.31%, 49.69%) respectively with a coefficient of determination (R^2=94.53%).

Keywords: Optimization. PA66-GF30%, modeling, ANOVA, turning, metal carbide, RSM.

MULTI-OBJECTIVE OPTIMIZATION OF MACHINING PARAMETERS DURING DRY TURNING OF AISI D3 STEEL USING TAGUCHI BASED GREY RELATIONAL ANALYSIS

Phd Student. Safi Khaoula

Department of Mechanical Engineering, Mechanics and Structure

Laboratory (LMS), University 8 may 1945, BP 401,24000 Guelma, Algeria

ORCID NO: 0000-0001-9195-1052

Prof. Dr. Yallese Mohamed Athmane

Laboratory (LMS), University 8 may 1945

ORCID NO: 0000-0003-1686-7269

Dr. Belhadi Salim

Laboratory (LMS), University 8 may 1945

ORCID NO: 0000-0002-7277-1600

Prof. Dr. Mabrouki Tarek

University of Tunis El Manar, Tunis, Tunisia

ORCID NO: 0000-0002-6502-1131

Phd Student. Chihaoui Salim

Laboratory (LMS), University 8 may 1945

ORCID NO: 0000-0001-6461-4667

Phd. Student: Hadjela Salah

Laboratory (LMS), University 8 may 1945

ORCID NO: 0000-0003-2994-8033

ABSTRACT

The optimization of machining parameters considering multiple performance characteristics of machining process using grey relational analysis (GRA) based on Taguchi method is presented in this study, for improvement of surface quality and minimization of the cutting forces that leads to a reduction of the power consumed. The turning trials based Taguchi L16 factorial plan were conducted under dry cutting conditions for the machining couple : AISI D3 steel/carbide cutting tool CVD (Al_2O_3+TiC+TiCN). The machining parameters taken into account during this study are as follow : cutting insert nose radius (r), cutting speed (Vc), feed rate (f), and depth of cut (ap). For multi-response optimization, initially Signal-to-Noise (S/N) ratio is calculated and then Grey Relational Analysis (GRA) is applied to simultaneously optimize the output responses. The highest value of this latter corresponds to the optimal levels combination of machining parameters. Therefore, the optimal levels combination for a simultaneous improvement of Ra Fz and Pc was obtained at ; (r4 Vc1 f1 ap1) ; major insert radius of 1.6 mm, cutting speed of 180 m/min, feed of 0.08 mm/rev and depth of cut of 0.1 mm. The optimized responses found by the use of optimal levels selected by grey relational analysis were (Ra= 0.233 µm Fz=26.73 N and Pc= 385.50 W).

Keywords: AISI D3, turning, GRA, Taguchi method, Modeling, Optimization.

УДК: 346.2

ПРОБЛЕМЫ ПРАВОВОГО РЕГУЛИРОВАНИЯ ДЕЯТЕЛЬНОСТИ ФИНАНОСВО-ПРОМЫШЛЕННЫХ ГРУПП В РЕСПУБЛИКЕ МОЛДОВА.

И. Арсени,

Доктор права, преподаватель

Комратского государственного университета,

Старший научный сотрудник ИЮПСИ (cod/nr. 20.80009.1606.05)

г. Кишинев, Республика Молдова

Значимость для общества и государства таких объединений как финансово-промышленная группа обуславливают интерес ученых-экономистов и юристов в проведении исследований в области становления и развития такого сложного и многоаспектного правового явления как финансово-промышленные группы. В настоящее время в Республике Молдова законодательство в области создания и деятельности финансово-промышленных групп и практика реализации данного законодательства только формируется и небольшой объем нормативно-правовых актов в этой области зачастую влечет пробелы в правовом регулировании статуса ФПГ. Это также является причиной исследования данной тематики.

Ключевые слова: финансово-промышл*енные группы, предпринимательские* объединения, правовой статус.

ABSTRACT

The importance for society and the state of such associations as a financial and industrial group determines the interest of economists and lawyers in conducting research in the formation and development of such a complex and multifaceted legal phenomenon as financial and industrial groups. Currently, in the Republic of Moldova, legislation in the field of the creation and operation of financial and industrial groups and the practice of implementing this legislation are only being formed and a small amount of normative legal acts in this area often entails gaps in the legal regulation of the status of FIGs. This is also the reason for researching this topic.

Key words: financial and industrial groups, business associations, legal status.

DETERMINATION OF ORGANIC COMPOUNDS IN THE PLANT EXTRACT OF SCHRENKA SPRUCE

G.M. Sayakova, U.A. Akhatyeva, A.B. Absattar

Methods of sample preparation and analysis: 10 g of a plant sample of Schrenk spruce was extracted with 50 ml of 96% ethanol for 12 hours and analyzed by gas chromatography with mass spectrometric detection (Agilent 6890N/5973N). Analysis conditions: sample volume 1.0 µl, sample entry temperature 260 °C, without flow division. Separation was performed using a DB-35MS chromatographic capillary column with a length of 30 m, an internal diameter of 0.25 mm and a film thickness of 0.25 microns at a constant carrier gas velocity (helium) of 1 ml / min. The chromatography temperature is programmed from 40 °C (10 min exposure time) with a heating rate of 5 °C / min to 270 °C (10 min exposure time). Detection is carried out in the SCAN mode m/z 34-750. The Agilent MSD ChemStation software (version 1701EA) was used to control the gas chromatography system, record and process the results and data obtained. Data processing included the determination of retention times, peak areas, as well as the processing of spectral information obtained using a mass spectrometric detector. To decipher the obtained mass spectra, the Wiley 7th edition and NIST'02 libraries were used (the total number of spectra in the libraries is more than 550 thousand). More than 75 compounds were identified (Fig. 1), of which the largest percentage was 2-o-methyl-D-mannopyranosa; 2-propanone, 1-hydroxy-3-(4-hydroxy-3-methoxyphenyl)-; and friedelan-3-one.

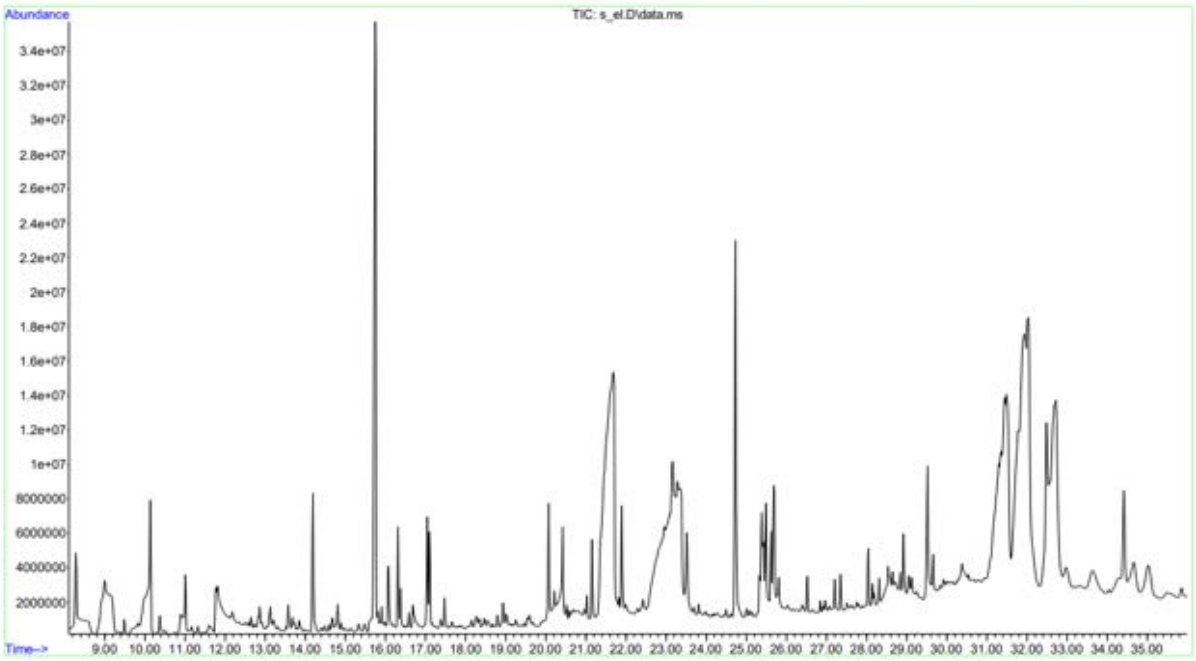

Fig. 1. Chromatogram of Schrenk spruce extract

ERZURUM MECİDİYE TABYASI VE YENİDEN İŞLEVLENDİRİLMESİ ÜZERİNE BİR ÖNERİ: ERZURUM HARP TARİHİ MÜZESİ

Elif Özlem AYDIN

Prof. Dr. Gebze Teknik Üniversitesi

Elif Sibel KOTAN

Yüksek Lisans Öğrencisi, Gebze Teknik Üniversitesi

ÖZET

Tabya yapıları, surlar ve kalelerden sonra geliştiği düşünülen en son askeri savunma yapı tipi olarak tanımlanabilir. Şehirlerin ileri karakolu vazifesindeki tabyaların amacı düşmanı ileri savunma hattı oluşturarak engellemektir.

Türkiye coğrafyasında tabyalar en yoğun olarak doğuda Erzurum ve Kars'ta, batıda Edirne ve Çanakkale'de inşa edilmiştir. Bunun sebebi doğuda Rus ve İran saldırılarına, batıda ise Yunan ve İngiliz saldırılarına karşı koymaktır. Literatür taramalarından, Osmanlı döneminde bu saldırılardan korunmak amaçlı Erzurum'da 42, Kars'ta 46, Edirne 'de 25, Çanakkale'de 32, Ardahan'da 8, Samsun'da 2, Sinop'ta 1 adet tabyanın inşa edildiği bilinmektedir. Ancak günümüze bu tabyaların hepsi ulaşamamıştır.

Osmanlı – Rus savaşlarında aktif olarak kullanılan Erzurum Mecidiye Tabyası (1855) Ahmet Muhtar Paşa, Nene Hatun gibi tarihi kişiliklerle ilgili önemli bir askeri savunma yapısıdır. Erzurum'da en eski tabya olması nedeniyle şehrin tarihi yapıları içinde ayrı bir öneme sahiptir. Konum olarak kentin doğu sınırında, şehir merkezini doğrudan gören Top Dağı'nda inşa edilmiş olan bu savunma yapısı yay planlı tabyaların tipik örneklerindedir. Cumhuriyet döneminde Genel Kurmay Başkanlığı'na bağlı askeri birliklerin kullanımına tahsis edilmiş olan tabya, 2009 yılında Orman ve Su İşleri 13. Bölge Müdürlüğü'ne bağlı Nene Hatun Tarihi Milli Parkı alanına dahil edilmiş ancak yapıya herhangi bir işlev verilmemiştir. Terk ve çevresel etkenlere bağlı olarak fiziksel bozulmaların tespit edildiği tarihi yapının yeniden işlevlendirilmesinin kent tarihi ve kültürüne katkı sağlayacağı düşünülmektedir.

Günümüzde Hazine Mülkiyeti'nde olan Erzurum Mecidiye Tabyası, Kuzeydoğu Anadolu Kalkınma Ajansı (KUDAKA) koordinasyonunda 2012 yılında uygulamaya konulan "İnovasyona Dayalı Bölgesel Turizm Stratejisi ve Eylem Planı"nda tarih ve kültür mirası turizminin geliştirilmesi için oluşturulması planlanan Erzurum kültür ve tarih rotasında yer almaktadır. Mecidiye Tabyası'nın mimari özellikleri ve özgün işlevi gözönüne alındığında "Harp Tarihi Müzesi" olarak yeniden işlevlendirilmesi uygun olacaktır. "Harp Tarihi Müzesi" olarak yeniden işlevlendirilmesi durumunda Nene Hatun Milli Parkı içinde yer alan, Erzurum şehir merkezine çok yakın ve hâkim bir alanda konumlanmış olan yapının bölgeye turizm açısından avantaj sağlayacağı düşünülmektedir. Bu çalışmada, bu amaçla hazırlanan Erzurum Mecidiye Tabyası'nın "Harp Tarihi Müzesi" olarak yeniden işlevlendirme projesi tanıtılacaktır. İlgili projenin hayata geçirilmesi konusunda yerel yönetimler, kent halkı ve aydınlarının desteğine ihtiyaç duyulmaktadır.

Anahtar Kelimeler: Erzurum Mecidiye Tabyası, Kültürel Miras, Yeniden İşlevlendirme, Kültürel ve Tarihsel Turizm.

ABSTRACT

Bastions can be defined as the latest type of military defense structures developed after fortification walls and castles. The purpose of the bastions, which function as the outposts of the cities, is to prevent enemy raids by forming a forward defense line.

The bastions within Turkey's territory were built in the eastern cities of Erzurum and Kars, and in the western cities of Edirne and Canakkale during Ottoman Empire. The rationale behind was to withstand Russian and Iranian attacks in the east and Greek and British attacks in the west. According to the literature review, 42 bastions were built in Erzurum, 46 in Kars, 25 in Edirne, 32 in Çanakkale, 8 in Ardahan, 2 in Samsun and 1 in Sinop. However, not all of these bastions have survived to this day.

Mecidiye Bastion (1855) was used actively during Ottoman - Russian wars. From thereon it has been an important military defense structure associated with historical personalities, i.e. Ahmet Muhtar Pasha and Nene Hatun. Since it is the oldest bastion in Erzurum, it holds special significance among all historical buildings of the city (Figure 4). It is considered that, a renovation and refunctioning of this historical structure, which found to have certain physical deterioration due to abandonment and environmental factors, can contribute to the history and culture of the city. In this study, the re-functioning project of Erzurum Mecidiye Bastion, as "War History Museum" will be introduced. In realization of this project, the support of local administrations, community and intellectuals is needed.

Erzurum Mecidiye Bastion, which is currently the property of National Treasure, is included in the Northeastern Anatolia Development Agency (KUDAKA)'s "Innovation Based Regional Tourism Strategy and Action Plan" (2012). According to this plan, Mecidiye Bastion falls within Erzurum's cultural and historical route, that is designed to develop heritage tourism in the region. Taking the architectural features and the original function of the Mecidiye Bastion into account, re-purposing it as a "War History Museum" is the most appropriate action in terms of the current potential of the historical building.
Within the scope of this study, in order to contribute to the historical and cultural sustainability of the military structures belonging to the Ottoman period around Erzurum, Mecidiye Bastion, which is the oldest bastion in Erzurum, was investigated and reuse suggestions were proposed for transferring it to the future as a Military History Museum.

Keywords: Erzurum Mecidiye Bastion, cultural heritage, reuse, cultural and historical tourism.

KONSTİPASYON BASKIN İRRİTABL BAĞIRSAK SENDROMU (İBS) OLAN BİREYLERDE FARKLI DİYET TEDAVİLERİNİN KONSTİPASYON DURUMUNA ETKİSİ

THE EFFECTS OF DIFFERENT DIET TREATMENTS ON THE CONSTIPATION STATUS IN INDIVIDUALS WITH CONSTIPATION PREDOMINANT IRRITABLE BOWEL SYNDROME (IBS)

Gamze AKBULUT

Prof. Dr. Öğr. Üyesi, Gazi Üniversitesi Sağlık Bilimleri Fakültesi Beslenme ve Diyetetik Bölümü

(Sorumlu Yazar)

Emine Nüket ÜNSAL

Dr. Dyt. Gülhane Eğitim ve Araştırma Hastanesi Beslenme ve Diyet Birimi

ÖZET

Bu çalışma, Gülhane Eğitim ve Araştırma Hastanesinde konstipasyon baskın irritabl bağırsak sendromu (İBS) tanısı almış, 19-50 yaş aralığındaki kadın bireylerde konstipasyon diyeti, çözünür posadan zengin konstipasyon diyeti ve probiyotik yoğurt eklenmiş konstipasyon diyetinin, hastaların konstipasyon durumuna olan etkisini değerlendirmek amacıyla planlanıp yürütülmüştür. Araştırmada dahil edilme kriterlerine uygun olan İBS'li 60 gönüllü kadın birey, çalışma ile ilgili bilgi verildikten sonra tam randomizasyon yöntemi ile üç farklı gruba ayrılmıştır. Birinci gruba (n:21) konstipasyon diyeti, ikinci gruba (n:17) çözünür posadan zengin konstipasyon diyeti ve üçüncü gruba (n:22) probiyotik yoğurt eklenmiş konstipasyon diyeti verilmiş ve bireyler 8 hafta boyunca izlenmiştir. Çalışma başlangıç ve sonunda bireylere Bristol dışkı skalası uygulanmıştır. Bristol dışkı skala formu dışkı yoğunluğunun görsel olarak bir derecelendirmesidir. Dört numaralı forma yaklaştıkça dışkılama durumunda iyileşme olduğu anlaşılmaktadır. Bireylerin çalışma başlangıç ve sonundaki Bristol dışkı formu değerlendirildiğinde gruplar arasında anlamlı bir fark gözlenmiş, özellikle 2. ve 3. gruptaki bireylerin dışkı formunda düzelmenin 1. gruba göre daha etkili olduğu saptanmıştır ($p<0,05$). İkinci ve 3. gruptaki bireylerin dışkı formunun daha fazla düzelmesine bu gruptaki bireylerin aldıkları posa ve probiyotik takviyesinin neden olduğu tespit edilmiştir. Sonuç olarak, her üç tıbbi beslenme tedavi şeklinin İBS semptomları üzerine olumlu etki sağladığı ve bireylerin dışkı formunda düzelme oluşturarak, konstipasyon durumunu iyileştirdiği saptanmıştır.

Anahtar Kelimeler: İrritabl Bağırsak Sendromu, Posa, Probiyotik, Konstipasyon

ABSTRACT

This study was planned and conducted in order to evaluate the effect of constipation diet, constipation diet rich in soluble fiber and probiotic yogurt added constipation diet in female individuals between the ages of 19-50 who were diagnosed with constipation predominant irritable bowel syndrome (IBS) in Gülhane Training and Research Hospital. . 60 volunteer female individuals with IBS who are eligible for inclusion criteria in the study were divided into three different groups by the full randomization method after giving information about the

study. Constipation diet was given to the first group (n: 21), constipation diet rich in soluble fiber to the second group (n: 17) and the constipation diet with probiotic yogurt added to the third group (n: 22) and the individuals were followed for 8 weeks. Work begins and ends on individuals. Bristol stool scale was applied. The Bristol stool scale form is a visual rating of stool density. As you get closer to form number four, it is understood that there is an improvement in defecation. When the Bristol stool forms of the individuals at the beginning and at the end of the study were evaluated, a significant difference was observed between the groups, it was found that the improvement in the stool form of the individuals in the 2nd and 3rd groups was more effective than the first group ($p < 0.05$). It was determined that the more improvement in the stool form of the individuals in the 2nd and 3rd groups was caused by the pulp and probiotic supplements taken by the individuals in this group. As a result, it was determined that all three forms of medical nutrition therapy had a positive effect on IBS symptoms and improved the constipation status by improving the stool form of the individuals.
Keywords: Irritable Bowel Syndrome, Fiber, Probiotic, Konstipation