



Muş Alparslan
University

**ISPEC 7th
INTERNATIONAL
CONFERENCE ON
AGRICULTURE, ANIMAL
SCIENCES AND RURAL
DEVELOPMENT**

18-19 SEPTEMBER
2021 / MUŞ

**CONFERENCE
PROCEEDINGS BOOK**

Editors
Prof. Dr. Yaşar KARADAĞ
Assoc. Prof. Dr. Seyithan SEYDOŞOĞLU

ISPEC
**7th INTERNATIONAL CONFERENCE ON AGRICULTURE,
ANIMAL SCIENCE and RURAL DEVELOPMENT**

DATE – PLACE
September 18-19, 2021
Muş, TURKEY

PROCEEDINGS BOOK

EDITOR

Prof. Dr. Yasar KARADAG
Assoc. Prof. Dr. Seyithan SEYDOSOGLU

All rights of this book belongs to ISPEC Publishing House.

Without permission can't be duplicate or copied.

**Authors of chapters are responsible both
ethically and juridically.**

ISSUED: 23/09/2021

ISBN: 978-625-7720-61-8

CONFERENCE ID

CONGRESS TITLE

**7th INTERNATIONAL CONFERENCE ON AGRICULTURE, ANIMAL
SCIENCES AND RURAL DEVELOPMENT**

DATE-PLACE

**September 18-19, 2021
Mus, TURKEY**

ORGANIZATION

Mus Alparslan University

ORGANIZING COMMITTEE

**Prof. Tekin ŞAHİN
Prof. Dr. Kağan KÖKTEN
Prof. Dr. Aydın AKKAYA
Assoc. Prof. Dr. Mehmet KARAMAN
Assoc. Prof. Dr. İsa YILMAZ
Assoc. Prof. Dr. Fırat KURT
Assist. Prof. Dr. Mustafa YAŞAR
Assist. Prof. Dr. Özer KURT
Assist. Prof. Dr. Onur ŞAHİN
Assist. Prof. Dr. Mahir ÖZKURT
Assist. Prof. Dr. Hülya HANOĞLU ORAL
Assist. Prof. Dr. Ahmet YENİKALAYCI
Assist. Prof. Dr. Veysi KAYRI
Assist. Prof. Dr. Dilek KABAKCI
Assist. Prof. Dr. Orhan KARADAG**

PARTICIPANTS' COUNTRIES

**Turkey, Algeria, Australia, Brazil, China, Egypt, Ethiopia, Finland, Germany, Georgia,
Indonesia, India, Iran, Israel, Iraq, Kazakhstan, Macedonia, Moldova, Morocco, Nigeria,
Pakistan, Portugal, Phipinas, Russia, Romania, Serbia, South Africa, Tunisia, Ukraine,
Vietnam**

TOTAL ACCEPTED ARTICLE

**Turkey: 115
Other Countries: 131**

SCIENCE BOARD

Prof. Dr. Ahmet YILDIRIM- International University of Sarajevo

Prof. Dr. Ali BİLGİLİ- Ankara University

Prof. Dr. Ayhan YILMAZ- Siirt University

Prof. Dr. Disna Ratnasekera- University of Ruhuna

Prof. Dr. Hirofumi SANEOKA- Hiroshima University

Prof. Dr. Marian Brestic- Slovak University of Agriculture

Prof. Dr. M. Shohidul ISLAM- Hajee Mohammad Danesh Science and Technology University

Prof. Dr. Oksana SYTAR- Taras Shevchenko National University of Kyiv

Prof. Dr. Sarash KONYRBAYEVA- Kazak Devlet Pedagoji Üniversitesi

Prof. Dr. Rüşti HATİPOĞLU- Cukurova University

Assoc. Prof. Dr. Başak HANEDAN- Ataturk University

Assoc. Prof. Dr. Demet ÇEKİN- Rwth Aachen University

Assoc. Prof. Dr. Gülcan DEMİROĞLU TOPÇU- Ege University

Assoc. Prof. Dr. Sehrana KASİMİ- Azerbaijan State University

Assoc. Prof. Dr. Sina BESHARAT- Urmia University

Assoc. Prof. Dr. Şeyda ÇAVUŞOĞLU- Van Yüzüncü Yıl University

Assoc. Prof. Dr. Yusuf DOĞAN- Mardin Artuklu University

Dr. Adnan Akhter- University of Punjab

Dr. Allah WASAYA- College of Agriculture, BZU, Bahadur Sub-Campus Layyah

Dr. Alfonso CUESTA MARCOS- Bayer Crop Science

Dr. Akbar HOSSAIN- Bangladesh Wheat and Maize Research Institute (BWMRI)

Dr. Ayman ELSABAGH- Kafrelsheikh University

Dr. Elham MOTALLEBI- Islamic Azad University

Dr. Muhammad Aamir IQBA- University of the Poonch Rawalakot (AJK)

Dr. Muhammad Ali RAZA Sichuan Agricultural University

Dr. Muhammad MUBEEN COMSATS- University Islamabad, Vehari Campus

Dr. Serkan ATEŞ- Oregon State University

Dr. Shah FAHAD The University of Swabi

Zakya MHAMDI Ali AMECHROUQ Ouassima RIFFI Jamila FLIOU Mohammed ELHOURRI Maryame SABIRI	Thermogravimetric Study and Heavy Metal Content of Pelargonium Graveolens From the Region of Errachidia Morocco	228
Giuli Keshelashvili Mariam Jibuti	Challenges for Developing Business Climate During Pandemic	229
Imash A. Smagulova G. Kaidar B. Ospanali A. Korkembay Zh. Mansurov Z. Lesbayev A.	Pan-Based Composite Fibres Modified with Magnetite Nanoparticles	230
Zeeshan Asghar	Sperm Motion Through Non-Newtonian Mucus Enclosed Within Slippery Walls	232
Ying-Qing Song B.D. Obideyi Nehad Ali Shah I.L. Animasaun Y.M. Mahrous Jae Dong Chung	Significance of Haphazard Motion and Thermal Migration of Alumina and Copper Nanoparticles Across the Dynamics of Water and Ethylene Glycol on a Convectively Heated Surface	233
Numan ERTAŞ	For Rural Development, Agriculture Or Livestock? Level2 Region Comparison on Trb2 Axis	234
Abir Chahouri Hanan Ouchene Bouchra Yacoubi Abdellatif Moukrım Ali Banaoui	Bioaccumulation of metals in sediment and marine species captured from the Agadir Bay, Morocco.	238
Sajad Ahmad Wani	Process Standardization, Characterization and storage stability of bread: An Amaranth Blended Approach	240
Vo Hong Tu Nguyen Thuy Trang Le Thanh Son Nguyen Phu Son	Is Super-Intensive Shrimp Farming More Environmentally Friendly? An Application of Material Balance Principle	241
Selcan AKKOYUN Aylin OLUK Sait AYKANAT Ali Bahadır KÜR	Determining the Effects of Different Nitrogen Doses on Grain Quality in Some Six-Row Barley Varieties under Cukurova Conditions	242
Mushtaq. A. Lone S. A. Mir Rafiq Lone Omar F. Khan	Mathematical Modelling and Optimal Allocation of Crops	244
FULL TEXT		
Nizamettin TURAN	Recent Informations on Alfalfa (<i>Medicago sativa</i> L.)	246
Dilek URAL Mithat DİREK	The Status and Development Potential of Organic Agriculture in the European Union	257
Seyithan SEYDOŞOĞLU Kağan KÖKTEN	Utilisation Potential of Aquatic Plant “Eurasian Watermilfoil” (<i>Myriophyllum spicatum</i>) by Livestock Enterprises	269
Muhammad Irfan Said Amran Farida Nur Yuliati	Increasing the Productivity of Beef Cattle Farming Business through the Dissemination of Livestock Waste Treatment Technology	282



PAN-BASED COMPOSITE FIBRES MODIFIED WITH MAGNETITE NANOPARTICLES

Imash A.

Institute of Combustion Problems, Almaty, Kazakhstan
Al-Farabi Kazakh National University, Almaty, Kazakhstan

Smagulova G.

Institute of Combustion Problems, Almaty, Kazakhstan
Al-Farabi Kazakh National University, Almaty, Kazakhstan

Kaidar B.

Institute of Combustion Problems, Almaty, Kazakhstan
Al-Farabi Kazakh National University, Almaty, Kazakhstan

Ospanali A.

Institute of Combustion Problems, Almaty, Kazakhstan
Al-Farabi Kazakh National University, Almaty, Kazakhstan

Korkembay Zh.

Institute of Combustion Problems, Almaty, Kazakhstan

Mansurov Z.

Institute of Combustion Problems, Almaty, Kazakhstan
Al-Farabi Kazakh National University, Almaty, Kazakhstan

Lesbayev A.

Institute of Combustion Problems, Almaty, Kazakhstan
Satbayev University, Almaty, Kazakhstan

ABSTRACT

Electrospinning is a unique method of producing polymer fibers because of the action of electrostatic forces on an electrically charged stream of polymer solution. This article presents the results of analyzes and experiments on the preparation of composite fibers based on polyacrylonitrile (PAN) and magnetite Fe_3O_4 . For this purpose, magnetite nanoparticles were synthesized by the chemical condensation method. The synthesis of magnetite nanoparticles includes the preparation of solutions from iron (III) chloride with a concentration of 0.32 mol / L and iron sulfate with a concentration of 0.2 mol / L, by gradually adding a 25% aqueous ammonia solution. Analyzes of Fe_3O_4 magnetite nanoparticles have been carried out, according to the results of this analysis, that is, X-ray phase analysis and transmission electron microscopy (TEM), it is confirmed that the primitive deposition method can be used to synthesize



homogeneous Fe₃O₄ magnetite nanoparticles with particle sizes of 11-17 nm. The synthesized magnetite nanoparticles were used to obtain PAN/Fe₃O₄ composite fibers by adding magnetite in 7 wt. % PAN solution in dimethylformamide. Composite fibers were obtained from a suspension of PAN/Fe₃O₄ in dimethylformamide by electrospinning. Scanning electron microscopy (SEM) images show the fiber size being 288-658 nm. The conducted elemental analysis of PAN/Fe₃O₄ fibers showed a high carbon content - 65.95%. Comparison of PAN fibers 7 wt. % without the addition of magnetite and PAN/Fe₃O₄ fibers, leads to a decrease in the value of the fiber diameter that the addition of magnetite under equally equal conditions. The XRD analysis of PAN/Fe₃O₄ fibers was carried out, that magnetite nanoparticles in the composition of the fibers did not change their initial chemical composition and represent single-phase magnetite in a polymer matrix medium. The results obtained prove the possibility of obtaining composite PAN/Fe₃O₄ fibers based on magnetite by the electrospinning method.

Keywords: Electrospinning, magnetite nanoparticles, polyacrylonitrile, composite fiber.

ACKNOWLEDGMENT

The investigation was carried out within the framework of the TPF grant on the topic: "Development of new composite-structural materials for the development of the innovative industry of the Republic of Kazakhstan", under the subprogram: "Development of technology for obtaining carbon fibers and their application as sensors and carbon plastics."