

# INESS

## ABSTRACT BOOK

The 8<sup>th</sup> International Conference on Nanomaterials  
and Advanced Energy Storage Systems  
(INESS-2020)



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The 8<sup>th</sup> International Conference on Nanomaterials and Advanced Energy Storage Systems (INESS-2020)

*Dear Colleagues!*

*We greatly appreciate your participation and valuable contribution to our Conference. We are honored and pleased to welcome you at INESS-2020!*

*The Organizers will put all efforts to make this day at INESS very efficient time to exchange and discuss the ideas, establish and strengthen collaboration in various fields of research. We hope that INESS will serve as an effective platform to establish new opportunities for joint works in science and education for sustainable development and the best future.*

*We will be looking forward to seeing you again.*

*Yours sincerely,*

*On behalf of the Organizers,*

*Prof. Zhumabay Bakenov*

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## CONTENT

### PLENARY INVITED SPEAKERS

1.	<u>Sung-Soo Kim</u> , Nurzhan Umirov, Deok-Ho Seo, Hyang-Yeon Kim <b>Novel and pragmatic approach to design silicon alloy anode by equilibrium method</b>	9
2.	<u>Maksym Mironov</u> <b>High mobility 2D holes in strained epitaxial germanium quantum well hetero structures</b>	10
3.	<u>Fu-Ming Wang</u> <b>Synthesis, characteristics and electrochemical performances of N, N-(p-phenylene) bismaleamate and its fluoro-substitution compound on organic anode materials in lithium-ion battery</b>	11
4.	<u>Sigita Trapesinger</u> , Juliette Billaud, David McNulty <b>Morphological peculiarities from lithium plating and stripping</b>	12
5.	<u>Hee Jae Kim</u> , Aishuak Konarov, Seung-Taek Myung <b>Controlled oxygen redox for excellent power capability in layered sodium-based compounds</b>	13
6.	<u>Toru Wakihara</u> , Kenta Iyoki, Kakeru Kikumasa, Takako Onishi, Yasuo Yonezawa, Anand Chokkalingam, Tatsuya Okubo <b>Extremely stable zeolites developed via liquid-mediated self-defect-healing</b>	14
7.	<u>Yongguang Zhang</u> , Yusen He, Yan Zhao, Zhumabay Bakenov <b>All-purpose electrode design of flexible conductive scaffold toward high-performance Li-S batteries</b>	15
8.	<u>Zulkhair Mansurov</u> , Seitkhan Azat, Almagul Kerimkulova <b>Valorization of biomass waste into high efficient materials for CBRN protection</b>	16
9.	<u>Sarkyt Kudaibergenov</u> <b>“Quenched” polyampholytes as catalysts and supercapacitors</b>	17

### ORAL PRESENTATIONS

10.	<u>Desmond Adair</u> , Torybek Kenzhekhanov, Durbek Abduvali, Gulnur Kalimuldina <b>Investigating the Feasibility of Energy Harvesting using Material Work Functions</b>	18
11.	<u>Svetlana Mikhailova</u> , Leonid Mikhailov, Guzal Ismailova, Nursultan Kenes, Raiymbek Yersaiyn, Ruslan Mahmutov <b>Smart window design with aerosol trap, greenhouse gardening and powered by solar panels</b>	19
12.	<u>Askhat Jumabekov</u> <b>Dynamic chemical passivation of absorber layer trap states and its real-time effect on the device performance in back-contact perovskite solar cells</b>	20
13.	<u>Zarina Umatova</u> , A. Jumabekov <b>Fabrication of back-contact solar cells by microsphere lithography</b>	21
14.	<u>Sholpan Nauryzbekova</u> , Kair Nussupov, Dina Bakranova <b>Simulation of antireflection coatings system based on DLC/porous Si and TiO<sub>2</sub>/SiO<sub>2</sub> for Si solar cells</b>	22
15.	<u>Assanali Sultanov</u> , Kair Nussupov, Nurzhan Beisenkhanov <b>Investigation of SiC based antireflection coating for Si solar cells by numerical FDTD simulations</b>	23
16.	<u>Baurzhan Ilyassov</u> , A.K. Aimukhanov, X.S. Rozhkova, A.K. Zeinidenov, N. Nuraje <b>Enhancement of photovoltaic properties of polymer solar cells by modifying a structure of PEDOT:PSS layer</b>	24
17.	<u>Olzat Toktarbaiuly</u> , Askar Syrlybekov, Ozhet Mauit <b>Magnetic and electronic properties of PtSe<sub>2</sub> thin film</b>	25
18.	<u>Oleg Prikhodko</u> , Svetlana Mikhailova, Yerzhan Mukhametkarimov, Suyumbika Maksimova, Kuanysh Dauitkhan, Ulantai Doseke <b>Effect of annealing on the optical properties of TiO<sub>2</sub> films</b>	26
19.	<u>Almaz Beisenbayev</u> , Askhat Jumabekov <b>Silver nanowires mesh electrode for metal-semiconductor-metal perovskite solar devices</b>	27
20.	<u>Nuriya Abdyldayeva</u> , Nurzhan Beisenkhanov <b>ZnO-ITO multilayered structure on Si substrate with prospective usage as antireflective covering for solar cells</b>	28
21.	<u>Niyazbek Ibrayev</u> , Evgeniya Seliverstova, Gulden Omarova <b>Sensitization of TiO<sub>2</sub> by merocyanine dye in the presence of plasmon nanoparticles</b>	29

22.	<u>Yevgenya Kedruk</u> , L.V. Gritsenko, Kh.A. Abdullin, G. Cicero <b>Effect of copper sulfate concentration in growth solution on photocatalytic properties of ZnO/CuO nanostructures</b>	30
23.	<u>Askar Maxim</u> , Damir Aidarkhanov, Timur Sh. Atabaev, Askhat N. Jumabekov, Annie Ng <b>Light management in perovskite solar cell by incorporation of carbon quantum dots</b>	31
24.	<u>Yerzhan Mukhametkarimov</u> , Svetlana Mikhailova, Oleg Prikhodko, Kuanysh Dauitkhan, Darya Puzikova, Ulantai Doseke <b>Ag:TiO<sub>2</sub> plasmonic nanocomposite films obtained by RF magnetron co-sputtering</b>	32
25.	<u>Damir Aidarkhanov</u> , Zhiwei Ren, Chang-Keun Lim, Zhuldyz Yelzhanova, Gaukhar Nigmatova, Bakhytzhann Bapdayev, Mannix Balanay, Charles Surya, Paras N. Prasad, Annie Ng <b>Bulk and interfacial defect passivation for high performance perovskite solar cells</b>	33
26.	<u>Nurxat Nuraje</u> <b>Advanced functional nanomaterials for photocatalytic water splitting</b>	34
27.	<u>Alexandr Zibert</u> , Ilya Korolkov <b>Synthesis and modification of gadolinium ferrite nanoparticles for potential application in neutron capture therapy</b>	35
28.	<u>Dmitriy Afanasyev</u> , Niazbek Ibrayev, Dias Toleutay <b>Enhancing of charge transfer efficiency from a perovskite CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> film in a layer of titanium dioxide in the presence of Ag/SiO<sub>2</sub> nanoparticles</b>	36
29.	<u>Mirat Karibayev</u> , Hongxia Zhao, Almagul Mentbayeva, Yanwei Wang <b>Free energy of metal ion binding to some functional groups of concrete admixtures in water</b>	37
30.	<u>Kydyr Askaruly</u> , Seitkhan Azat, Zhantikekeyev Ulan, Mukhtar Yeleuov <b>Amorphous silicon dioxide as an anode material for li-ion batteries</b>	38
31.	<u>Nurzhan Baikalov</u> , Nurassyl Serik, Sandugash Kalybekkyzy, Indira Kurmanbayeva, Zhumabay Bakenov, Almagul Mentbayeva <b>High mass-loading sulfur-composite cathode for lithium-sulfur batteries</b>	39
32.	<u>Zhainarbek Nurymov</u> , Zarina Yelemessova, Kulzhan Beisembayeva, Arailym Nurpeissova, Gulnur Kalimuldina, Zhumabay Bakenov <b>Methods of producing a polymer electrolyte on the surface of a 3D structure for lithium-ion batteries</b>	40
33.	<u>Yerkezhan Yerkinbekova</u> , Sandugash Kalybekkyzy, Almagul Mentbayeva, Nurzhan Baikalov, Memet Vezir Kahraman, Zhumabay Bakenov <b>Electrospun 3D structured carbon current collector for Li/S batteries</b>	41
34.	<u>Dauren Batyrbekuly</u> , Sabrina Cajoly, Barbara Laïk, Jean-Pierre Pereira-Ramos, Nicolas Emery, Zhumabay Bakenov, Rita Baddour-Hadjean <b>Mechanistic investigation on hybrid Zn/V<sub>2</sub>O<sub>5</sub> rechargeable battery using a binary Li<sup>+</sup>/Zn<sup>2+</sup> aqueous electrolyte</b>	42
35.	<u>Nurbol Tolganbek</u> , Almagul Mentbayeva, Kiyoshi Kanamura, Zhumabay Bakenov <b>The performance comparison of Li<sub>1.3</sub>Al<sub>0.3</sub>Ti<sub>1.7</sub> (PO<sub>4</sub>)<sub>3</sub> solid electrolyte via various synthesizing methods</b>	43
36.	<u>Lunara Rakhymbay</u> , Indira Kurmanbayeva, Zhumabay Bakenov <b>Additives to suppress dendrite formation on Zn anode of rechargeable aqueous battery</b>	44
<b>POSTER SESSION</b>		
37.	<u>Aliya Mukanova</u> , Orynassar Mukhan, Maksym Myronov, Zhumabay Bakenov <b>Thermal conductivity of Si thin films through time-domain thermoreflectance measurements</b>	45
38.	<u>Yongguang Zhang</u> , Jiayi Wang, Xin Wang <b>Hierarchical Defective Fe<sub>3-x</sub>C@C Hollow Microsphere Impulses Fast and Long-lasting Lithium-Sulfur Batteries</b>	46
39.	<u>Nazym Kassenova</u> , Sandugash Kalybekkyzy, Memet Vezir Kahraman, Zhumabay Bakenov, Almagul Mentbayeva <b>Fabrication and characterization of electrospun PVA/PVA-MA/TEOS based gel polymer electrolyte for Lithium-ion batteries</b>	47
40.	<u>Anastassiya Mashentseva</u> , Tomiris Khassen, Ainash Zhumazhanova, Dmitriy Zheltov, Alyona Russakova, Saniya Rakisheva, Liliya Altynbayeva, Nurgulim Aimanova <b>Adsorption arsenite from aqueous solutions by Cu/CuO loaded composite track-etched membranes</b>	48
41.	<u>M.S. Batalova</u> , B.E. Alpysbayeva, N.E. Korobova <b>Analysis of the dependence of the structural parameters of membranes based on NOA and anode current on the parameters of the production process</b>	49



The 8<sup>th</sup> International Conference on Nanomaterials and Advanced Energy Storage Systems (INESS-2020)

42.	<u>Nurbolat Issatayev, Arailym Nurpeissova, Gulnur Kalimuldina, Zhumabay Bakenov</u> <b>The effect of chemical activating agents on the morphology and structure of bio-derived activated carbon</b>	50
43.	<u>Aiym Mashekova, Arailym Nurpeissova, Zhumabay Bakenov, Aliya Mukanova</u> <b>Study of the lithium-ion battery at low temperatures</b>	51
44.	<u>Aiym Mashekova, Zhumabay Bakenov, Aliya Mukanova</u> <b>Study of a solid-state electrolyte for lithium-ion battery</b>	52
45.	<u>Nursultan Turdakyn, Alisher Medeubayev, Ingkar Abay, Desmond Adair, Gulnur Kalimuldina</u> <b>Preparation of a Piezoelectric PVDF Sensor via Electrospinning</b>	53
46.	<u>Anastassiya Vetrova, Dmitriy Khrustalev, Azamat Yedrissov, Anastassiya Khrustaleva</u> <b>Synthesis of 4,7-dibromo-9H-carbazole and its N-alkylation under Microwave Activation Conditions in a Flow-type Microwave Reactor</b>	54
47.	<u>G.S. Amirbekova, B.E. Alpysbayeva, E. Erlanuly, M. T. Gabdullin, V.Y. Smirnov</u> <b>Etching the surface of aluminum foil using high-frequency plasma to produce a nanoporous aluminum oxide membrane</b>	55
48.	<u>Meruyert Kadir, Balaussa Alpysbayeva, Vladimir Smirnov</u> <b>Surface morphology analysis of copper films produced by anodizing process</b>	56
49.	<u>Rustam Shlyapov, Aitolkyn Uali, Shamshiya Amerkhanova</u> <b>Prospects of application of iron-containing carbon-paste electrode in electrochemical analysis</b>	57
50.	<u>Iskakov Bakhtiyar, Altayqzy Marzhan, Tautayev Yernar, Ongarova Shynar, Karmenov Kanat</u> <b>Photocell modernization</b>	58
51.	<u>Renata Nemkayeva, Nazim Guseinov, Gulzhan Baigarinova, Madi Aitzhanov, Yerzhan Mukhametkarimov</u> <b>Thickness-Dependent Raman and Photoluminescence Spectra of 2D Indium Selenide</b>	59
52.	<u>Darya Puzikova, Margarita Dergacheva, Gulnur Khussurova, Xeniya Leontyeva</u> <b>Semiconductor film CuBi<sub>2</sub>O<sub>4</sub>, modified Pt</b>	60
53.	<u>T.Kh. Sadykov, V.V. Zhukov, B.A. Iskakov, I.S. Nevmerzhitskiy, A.S. Serikkanov, O.A. Novolodskaya, Y.M. Tautayev</u> <b>Solar cell research at an altitude of 3340 meters above sea level</b>	61
54.	<u>Bakhtiyar Soltabayev, Almagul Mentbayeva, Ali Orkun Çağırtekin, Selim Acar</u> <b>Enhanced gas sensing properties of IZO thin films using SILAR</b>	62
55.	<u>Kundyz Turmanova, Oleg Prikhodko, Guzal Ismailova, Alibek Zhakypov, Suyumbika Maksimova, Zhandos Tolepov</u> <b>Effect of Ag impurity on the optical properties of GST<sub>225</sub> thin films</b>	63
56.	<u>Alibek Zhakypov, Suyumbika Maksimova, Oleg Prikhodko, Guzal Ismailova, Kundyz Turmanova, Zhandos Tolepov</u> <b>Effective penetration depth of optical radiation in nanoscaled modified Ge<sub>2</sub>Sb<sub>2</sub>Te<sub>5</sub>&lt;Ag&gt; films</b>	64
57.	<u>Anastassia Khrustaleva, Azamat Yedrissov, Anastassiya Vetrova, Dmitriy Khrustalev</u> <b>The green method for recycling polylactic acid made products under ultrasonication conditions</b>	65
58.	<u>Azamat Yedrissov, Dmitriy Khrustalev, Anastassiya Khrustaleva, Anastassiya Vetrova</u> <b>New composite material for both biodegradable electronics and soft biomedical electronics</b>	66
59.	<u>Saule Issayeva, Anar Kabylda, Yingqiu Xie, Haiyan Fan</u> <b>Synthesis of nitrogen-doped zinc oxide nanostructures and their application in antibacterial activity against <i>e.coli</i>, <i>lactis</i>, <i>aerogenes</i>, <i>s.marcescens</i></b>	67
60.	<u>Dmitriy Khrustalev, Azamat Yedrissov, Anastassiya Vetrova, Anastassiya Khrustaleva</u> <b>Green method of preparation for phenol formaldehyde foams under microwave irradiation</b>	68



The 8<sup>th</sup> International Conference on Nanomaterials and Advanced Energy Storage Systems (INESS-2020)

61.	<u>Dana Ainakulova</u> , Samal Rakhmatulla, Mirat Karibayev, Almagul Mentbayeva, Yanwei Wang <b>Polymer physics and modeling of polycarboxylate-based superplasticizers</b>	69
62.	<u>Kuanysh Samarkhanov</u> , Mendykhan Khasenov, Yuriy Gordienko, Yuriy Ponkratov, Vadim Bochkov, Yevgeniy Tulubayev <b>Sputtering of alkali metals into a gas medium upon excitation by products of nuclear reaction <math>{}^6\text{Li}(n,\alpha){}^3\text{H}</math></b>	70
63.	<u>Kuanysh Samarkhanov</u> , Yuriy Gordienko, Yuriy Ponkratov, Vadim Bochkov, Yevgeniy Tulubayev <b>Results of thermal stability tests of the IGR reactor HEU fuel</b>	71
64.	<u>Shyryn Nurbolat</u> , Zharkyn Zhumakhanov, Zhanar Kalkozova, Khabibulla Abdullin <b>ZnO-CoO nanopowders for asymmetric supercapacitors</b>	72
65.	<u>Orynbassar Mukhan</u> , Arailym Nurpeissova, Zhumabay Bakenov <b>Conformal coating of LTO/PAN for high performance Si nano-composite anodes</b>	73
66.	<u>Y.Y. Kedruk</u> , N. Alpysbaiuly, L.V. Gritsenko, Kh.A. Abdullin <b>Hydrothermal low-cost synthesis of ZnO-GO nanocomposites</b>	74
67.	<u>Orynbay Zhanadilov</u> , Almagul Mentbayeva, Zhanna Beisbayeva, Magzhan Amze, Zhumabay Bakenov <b>Composite PAAm-based hydrogel electrolyte for hybrid aqueous (Zn-Li-ion) battery</b>	75
68.	<u>K.K. Dikhanbayev</u> , Ye. Shabdan, Ye. Sagidolda, Sh. B. Bayganatova, G. K. Mussabek, Sh.A.Zhumatova <b>Silicon solar cells textured using gold of induced etching</b>	76
69.	<u>Bolat Zhadyra</u> , Temesheva Symbat, Baydeldinov Uakaskan <b>Wireless power transmission technology</b>	77



### Solar cell research at an altitude of 3340 meters above sea level

T.Kh. Sadykov<sup>1,2\*</sup>, V.V. Zhukov<sup>3</sup>, B.A. Iskakov<sup>1,2\*\*</sup>, I.S. Nevmerzhitskiy<sup>1</sup>, A.S. Serikkanov<sup>1</sup>,  
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Providing electricity to consumers in the mountainous regions is one of the urgent problems of power engineers. Laying and maintenance of power lines is expensive because of the difficult terrain and climatic conditions. Providing a heating system for heating boilers, requires the acquisition and delivery of large quantities of combustible material. The heating season in the highlands lasts up to nine months. Considering all the costs of electricity consumption and heating, it becomes necessary to conduct research and evaluate the economic efficiency of using solar power plants, focused on providing electricity to consumers in mountain regions.

In order to create a scientific basis for solving innovative problems in solar energy at the Tien Shan high-mountain cosmic ray scientific station (TSHSS), located at an altitude of 3340 meters above sea level, initiative work is underway to create a solar power station (SPS), assess its effectiveness, safety, environmental friendliness and reliability in work.

At the moment, a solar power station has been created at an altitude of 3340 meters above sea level. A comparative analysis of the results of generating electricity from the same type of solar power plants located at altitudes of 800 and 3340 meters above sea level was carried out. It is shown that the amount of electricity generated by a solar power plant at an altitude of 3340 is 20 percent more than at an altitude of 800 meters.

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