



ONLINE, AUGUST 6, 2020

8.00 – 16.00	REGISTRATION	
8.55 – 9.00	OPENING CEREMONY (Prof. Zhumabay Bakenov, National Laboratory Astana, Nazarbayev University, Institute of Batteries)	
09.00 – 10.25	SOLAR ENERGY SESSION 1. Chairman: Prof. Annie Ng Co-chairman: Dr. Berik Uzakbaiuly	
9.00 – 9.20	Prof. Svetlana Mikhailova (al-Farabi Kazakh National University, Kazakhstan)	Smart window design with aerosol trap, greenhouse gardening and powered by solar panels
9.20 – 9.35	Assanali Sultanov (Kazakh-British Technical University, Kazakhstan)	Investigation of SiC based antireflection coating for Si solar cells by numerical FTDT simulations
9.35 – 9.50	Zarina Umatova (Nazarbayev University, Kazakhstan)	Fabrication of back-contact solar cells by microsphere lithography
09.50 – 10.05	Sholpan Nauryzbekova (Kazakh-British Technical University, Kazakhstan)	Simulation of antireflection coatings system based on DLC/porous Si and TiO ₂ /SiO ₂ for Si solar cells

10.05 – 10.25	Prof. Askhat Jumabekov (Nazarbayev University, Kazakhstan)	Dynamic chemical passivation of absorber layer trap states and its real-time effect on the device performance in back-contact perovskite solar cells
10.25 - 10.30	BREAK	
10.30 – 11.55	SOLAR ENERGY SESSION 2. Chairman: Prof. Svetlana Mikhailova Co-chairman: Dr. Baktiyar Soltabayev	
10.30 – 10.50	Dr. Baurzhan Ilyassov (Nazarbayev University, Kazakhstan)	Enhancement of photovoltaic properties of polymer solar cells by modifying a structure of PEDOT:PSS layer
10.50 – 11.10	Dr. Olzat Toktarbaiuly (National Laboratory Astana, Kazakhstan)	Magnetic and electronic properties of PtSe ₂ thin film
11.10 - 11.25	Oleg Prikhodko (al-Farabi Kazakh National University, Kazakhstan)	Effect of annealing on the optical properties of TiO ₂ films
11.25 – 11.40	Almaz Beisenbayev (Nazarbayev University, Kazakhstan)	Silver nanowires mesh electrode for metal-semiconductor-metal perovskite solar devices
11.40 – 11.55	Nuriya Abdyldayeva (Kazakh-British Technical University, Kazakhstan)	ZnO-ITO multilayered structure on Si substrate with prospective usage as antireflective covering for solar cells
11.55 – 12.00	BREAK	
12.00 – 13.20	SOLAR ENERGY SESSION 3. Chairman: Prof. Nurxat Nuraje Co-chairman: Dr. Olzat Toktarbaiuly	
12.00 – 12.20	Prof. Niyazbek Ibrayev (Buketov Karaganda University, Kazakhstan)	Sensitization of TiO ₂ by merocyanine dye in the presence of plasmon nanoparticles
12.20 – 12.35	Yevgenya Kedruk (Satbayev University, Kazakhstan)	Effect of copper sulfate concentration in growth solution on photocatalytic properties of ZnO/CuO nanostructures
12.35 – 12.50	Askar Maxim (Nazarbayev University, Kazakhstan)	Light management in perovskite solar cell by incorporation of carbon quantum dots
12.50 – 13.05	Yerzhan Mukhametkarimov (al-Farabi Kazakh National University, Kazakhstan)	Ag:TiO ₂ plasmonic nanocomposite films obtained by RF magnetron co-sputtering
13.05 – 13.20	Damir Aidarkhanov (Nazarbayev University, Kazakhstan)	Bulk and interfacial defect passivation for high performance perovskite solar cells
13.20 – 13.25	BREAK	

13.25 – 14.55	SOLAR ENERGY SESSION 4. Chairman: Prof. Askhat Jumabekov Co-chairman: Dr. Baurzhan Ilyassov	
13.25 – 13.45	Prof. Nurxat Nuraje (Nazarbayev University, Kazakhstan)	Advanced functional nanomaterials for photocatalytic water splitting
13.45 – 14.10	Invited Speaker Prof. Maksym Myronov (The University of Warwick, United Kingdom)	High mobility 2D holes in strained epitaxial germanium quantum well hetero structures
14.10 – 14.25	Alexandr Zibert (L.N. Gumilyov Eurasian National University, Kazakhstan)	Synthesis and modification of gadolinium ferrite nanoparticles for potential application in neutron capture therapy
14.25 – 14.40	Dmitriy Afanasyev (Buketov Karaganda University, Kazakhstan)	Enhancing of charge transfer efficiency from a perovskite $\text{CH}_3\text{NH}_3\text{PbI}_3$ film in a layer of titanium dioxide in the presence of Ag/SiO_2 nanoparticles
14.40 – 14.55	Mirat Karibayev (Nazarbayev University, Kazakhstan)	Free energy of metal ion binding to some functional groups of concrete admixtures in water
11.00 – 12.25	ENERGY STORAGE SESSION 1. Chairman: Prof. Almagul Mentbayeva Co-chairman: Dr. Aishuak Konarov	
11.00 – 11.25	Invited Speaker Prof. Sung-Soo Kim (Chungnam National University, Republic of Korea)	Novel and pragmatic approach to design silicon alloy anode by equilibrium method
11.25 – 11.45	Prof. Desmond Adair (Nazarbayev University, Kazakhstan)	Investigating the feasibility of energy harvesting using material work functions
11.45 – 12.10	Invited speaker Prof. Fu-Ming Wang (National Taiwan University of Science and Technology, Taiwan)	Synthesis, characteristics and electrochemical performances of N, N-(<i>p</i> -phenylene) bismaleamate and its fluoro-substitution compound on organic anode materials in lithium-ion battery
12.10 – 12.25	Kydyr Askaruly (Satbayev University, Kazakhstan)	Amorphous silicon dioxide as an anode material for li-ion batteries
12.25 – 12.35	BREAK	
12.35 -14.05	ENERGY STORAGE SESSION 2. Chairman: Prof. Sung-Soo Kim Co-chairman: Prof. Zhumabay Bakenov	

12.35 – 13.00	Invited Speaker Dr. Sigita Trabesinger (Paul Scherrer Institute, Switzerland)	Morphological peculiarities from lithium plating and stripping
13.00 – 13.25	Invited Speaker Prof. Yongguang Zhang (Hebei University of Technology, China)	All-purpose electrode design of flexible conductive scaffold toward high-performance Li-S batteries
13.25 – 13.40	Nurzhan Baikalov (Nazarbayev University, Kazakhstan)	High mass-loading sulfur-composite cathode for lithium-sulfur batteries
13.40 – 13.55	Nurbol Tolganbek (Nazarbayev University and National Laboratory Astana, Kazakhstan)	The performance comparison of $\text{Li}_{1.3}\text{Al}_{0.3}\text{Ti}_{1.7}(\text{PO}_4)_3$ solid electrolyte via various synthesizing methods.
13.55 – 14.05	BREAK	
14.05 – 15.25	ENERGY STORAGE SESSION 3. Chairman: Prof. Zhumabay Bakenov Co-chairman: Dr. Indira Kurmanbayeva	
14.05 – 14.30	Invited Speaker Prof. Zulkhair Mansurov (al-Farabi Kazakh National University, Kazakhstan)	Valorization of biomass waste into high efficient materials for CBRN protection
14.30 – 14.55	Invited Speaker Prof. Seung-Taek Myung (Sejong University, Republic of Korea)	Controlled oxygen redox for excellent power capability in layered sodium-based compounds
14.55 – 15.10	Zhainarbek Nurymov (L.N. Gumilyov Eurasian National University, Kazakhstan)	Methods of producing a polymer electrolyte on the surface of a 3D structure for lithium-ion batteries
15.10 – 15.25	Yerkezhan Yerkinbekova (National Laboratory Astana, Kazakhstan)	Electrospun 3D structured carbon current collector for Li/S batteries
15.25 – 15.35	BREAK	
15.35 – 16.55	ENERGY STORAGE SESSION 4. Chairman: Dr. Sigita Trabesinger Co-chairman: Dr. Sandugash Kalybekkyzy	
15.35 – 16.00	Invited Speaker Prof. Sarkyt Kudaibergenov (Satbayev University, Kazakhstan)	“Quenched” polyampholytes as catalysts and supercapacitors
16.00 – 16.25	Invited Speaker Prof. Toru Wakihara (The University of Tokyo, Japan)	Extremely stable zeolites developed via liquid-mediated self-defect-healing

16.25 – 16.40	Dauren Batyrbekuly (Institut de Chimie et des Matériaux Paris Est, France, National Laboratory Astana, Kazakhstan)	Mechanistic investigation on hybrid Zn/V ₂ O ₅ rechargeable battery using a binary Li ⁺ /Zn ²⁺ aqueous electrolyte
16.40 – 16.55	Lunara Rakhymbay (National Laboratory Astana, Kazakhstan)	Additives to suppress dendrite formation on Zn anode of rechargeable aqueous battery
17.00 – 17.30	CLOSING CEREMONY and POSTER AWARDS	

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