

INNESS-2022 CONFERENCE PROGRAM
Venue - NAZARBAYEV UNIVERSITY, Block C3, 1 floor

DAY I, AUGUST 4, 2022

8 ⁰⁰ –8 ⁵⁰	REGISTRATION (near Red hall #1022)
8 ⁵⁰ –9 ⁰⁰	Red hall #1022 OPENING CEREMONY Prof. ZHUMABAY BAKENOV (Nazarbayev University (NU), National Laboratory Astana (NLA), Institute of Batteries (IoB)) Mr. RACHID MAANINOU (His Excellency Ambassador of the Kingdom of Morocco)

KEYNOTE SESSION
Chairman: Prof. ZHUMABAY BAKENOV, Co-Chairman: Dr. ALIYA MUKANOVA

K1 9 ⁰⁰ –9 ³⁰	Dr. RACHID YAZAMI Nanyang Technological University, Singapore	INNOVATIVE SOLUTIONS FOR LITHIUM-ION BATTERIES MANAGEMENT FOR ELECTRIC VEHICLES
K2 ONLINE 9 ³⁰ – 10 ⁰⁰	Prof. ZHONG LIN WANG Georgia Institute of Technology, USA	THE FUNDAMENTAL SCIENCE AND TECHNOLOGY APPLICATIONS OF TRIBOELECTRIC NANOGENERATOR
K3 ONLINE 10 ⁰⁰ –10 ³⁰	Prof. KIYOSHI KANAMURA Tokyo Metropolitan University, Japan	RECENT PROGRESS OF RECHARGEABLE LITHIUM METAL BATTERY

10³⁰–10⁴⁰ **GROUP PHOTO** and 10⁴⁰–11⁰⁰ COFFEE BREAK

Red hall #1022 **PARALLEL SESSIONS** Conference room #1010

A1. ADVANCED NANOMATERIALS FOR ENERGY STORAGE Chairman: Prof. SEUNG-TAEK MYUNG, Co-Chairman: Dr. ALMAGUL MENTBAYEVA			B1. MODELING TOOLS IN MATERIALS SCIENCE Chairman: Prof. YANWEI WANG, Co-Chairman: Dr. AMANZHOL TURLYBEKULY		
A1.1 11 ⁰⁰ –11 ³⁰ PLENARY	Prof. EVGENY ANTIPOV Moscow State University, RF	NOVEL PHOSPHATES AND FLUORIDE-PHOSPHATES ELECTRODE MATERIALS FOR ME-ION BATTERIES	B1.1 ONLINE 11 ⁰⁰ –11 ¹⁵	Prof. DESMOND ADAIR NU, RK	AN EFFICIENT METHOD FOR COMBINING MULTI-CRITERIA SUBJECTIVE EVIDENCE WHEN SELECTING MATERIAL FOR FUEL CELL BIPOLAR PLATES
A1.2 ONLINE 11 ³⁰ –12 ⁰⁰ INVITED	Prof. HIROKAZU MUNAKATA Tokyo Metropolitan University, Japan	EVALUATION OF IONIC CONDUCTIVITY IN LiNi _{0.5} Co _{0.2} Mn _{0.3} O ₂ COMPOSITE ELECTRODES OF LITHIUM-ION BATTERIES BY DC POLARIZATION METHOD	B1.2 11 ¹⁵ –11 ³⁰	Mr. MIRAT KARIBAYEV NU, RK	BINDING, REACTION, AND ACTIVATION ENERGIES OF OH ⁻ IONS INTERACTING AND REACTING TO SOME HEAD GROUPS OF ANION EXCHANGE MEMBRANE EXPLORED VIA THE DFT METHOD
A1.3 12 ⁰⁰ –12 ¹⁵	Mr. BAGDAULET SHUGAY NU, RK	ENHANCEMENT OF THE ELECTROCHEMICAL PERFORMANCE OF THE CATHODE MATERIAL NaNi _{0.5} Mn _{0.5-x} Zr _x O ₂	B1.3 11 ³⁰ –11 ⁴⁵	Ms. AIGERIM KABIYEVA NU, RK	OPTIMAL DISTRIBUTION OF CATALYST IN POROUS PELLETS FOR A QUASI-STEADY-STATE REACTION WITH LANGMUIR-HINSHELWOOD KINETICS
A1.4 12 ¹⁵ –12 ³⁰	Mr. ALEXANDR RYABIN Ural Federal University, RF	SINGLE PARTICLE APPROACH TO RAMAN STUDY OF LiFePO ₄ : SPATIAL RESOLUTION AND LASER-INDUCED DECOMPOSITION	B1.4 11 ⁴⁵ –12 ⁰⁰	Ms. SALTANAT KAZBEK NU, RK	ENHANCEMENT OF THE POROUS CATALYST PRODUCTIVITY BY USING GAUSSIAN NONUNIFORM ACTIVITY DISTRIBUTION UNDER UNSTEADY-STATE REGIME
A1.5 12 ³⁰ –12 ⁴⁵ SPONSOR	Mr. VADIM DARNITSIN Interactive Corporation	THE NANO PARTICLE FORMATION BY ARC PLASMA DEPOSITION SYSTEM	B1.5 12 ⁰⁰ –12 ¹⁵	Ms. AINUR DUISENOVA Zhubanov Aktobe Regional University, RK	MODEL OF SINGLE-ELECTRON TRANSISTOR BASED ON PRISMANES
			B1.6 ONLINE 12 ¹⁵ –12 ³⁰	Prof. DESMOND ADAIR, NU, RK	SIMULATION OF HARVESTING VIBRATIONAL ENERGY WHEN UTILIZING MATERIAL WORK FUNCTIONS USING THE MODIFIED DIFFERENTIAL TRANSFORMATION METHOD

LUNCH BREAK

Red hall #1022 **PARALLEL SESSIONS** Conference room #1010

AII. ADVANCED NANOMATERIALS FOR ENERGY STORAGE Chairman: Prof. SUNG-SOO KIM, Co-Chairman: Dr. AISHUAK KONAROV			BII. ADVANCED NANOMATERIALS FOR DIFFERENT APPLICATIONS Chairman: Prof. MANNIX BALANAY, Co-Chairman: Dr. FAIL SULTANOV		
AII.1 ONLINE 14 ⁰⁰ –14 ³⁰ PLENARY	Prof. NAE-LIH WU National Taiwan University, Taiwan	ENGINEERING ARTIFICIAL ELECTRODE-ELECTROLYTE INTERPHASE FOR ADVANCED LI-ION BATTERIES	BII.1 14 ⁰⁰ –14 ³⁰ INVITED	Prof. ZULKHAIR MANSUROV Institute of Combustion Problems, RK	RECENT ADVANCES AND OUTLOOK IN NANOTECHNOLOGY
AII.2 14 ³⁰ –15 ⁰⁰ PLENARY	Prof. ARTYOM ABAKUMOV Skolkovo Institute of Science and Technology (Skoltech), RF	HOW ADVANCED TRANSMISSION ELECTRON MICROSCOPY CAN CONTRIBUTE TO BATTERY RESEARCH?	BII.2 14 ³⁰ –14 ⁴⁵	Mr. ZHANDOS SADIRKHANOV NU, RK	SELF-POWERED ORGANOMETAL HALIDE PEROVSKITE PHOTODETECTOR WITH EMBEDDED SILVER NANOWIRES
AII.3 ONLINE 15 ⁰⁰ –15 ³⁰ INVITED	Prof. FU MING WANG National Taiwan University of Science and Technology, Taiwan	THE DEVELOPMENT OF SUPER ELECTRICALLY CONDUCTIVE SI MATERIAL WITH POLYMER BRUSH ACID AND EMERALDINE BASE AND ITS AUTO-SWITCH DESIGN FOR HIGH-SAFETY AND HIGH-PERFORMANCE LITHIUM-ION BATTERY	BII.3 14 ⁴⁵ –15 ⁰⁰	Mr. ARTYOM NOVIKOV Skoltech, RF	CHARGE-TRANSPORT MATERIALS IMPACT ON THE PEROVSKITE SOLAR CELLS STABILITY
AII.4 15 ³⁰ –15 ⁴⁵ SPONSOR	Mr. ALEXANDER PUCHKOV E-Global Corporation	RIGAKU'S X-RAY SPECTROMETERS AND DIFFRACTOMETERS	BII.4 15 ⁰⁰ –15 ¹⁵	Ms. ZHULDYZ YELZHANOVA NU, RK	A MORPHOLOGICAL STUDY OF SOLVOTHERMALLY GROWN SnO ₂ NANOSTRUCTURES FOR APPLICATION IN PEROVSKITE SOLAR CELLS
AII.5 15 ⁴⁵ –16 ¹⁵ INVITED	Prof. SERGEY LEVCHENKO Skoltech, RF	NOVEL SYMBOLIC REGRESSION AND DATA MINING APPROACHES IN ENERGY MATERIALS RESEARCH	BII.5 15 ¹⁵ –15 ³⁰	Mr. IVAN PRIKHNO Moscow State University, RF	SWITCHABLE MEMBRANE MATERIALS BASED ON ELECTROACTIVE POLYAZINES
AII.6 16 ¹⁵ –16 ⁴⁵	Prof. PAVEL SOROKIN National University of Science and Technology MISiS, RF	CURRENT PROGRESS IN THE STUDY OF ULTRATHIN DIAMOND FILMS. ACHIEVEMENTS AND CHALLENGES	BII.6 15 ³⁰ –15 ⁴⁵	Dr. EKATERINA FEDOTOVA Moscow Power Engineering Institute, RF	EFFECTS OF CLIMATE VARIABILITY AND CLIMATE CHANGE ON WIND POWER INTEGRATION INTO POWER SYSTEMS

COFFEE BREAK

16 ¹⁵ –17 ⁰⁰ LABORATORY TOUR Dr. AMANZHOL TURLYBEKULY	16 ⁴⁵ –18 ⁰⁰ POSTER SESSION Shanyrak Hall Chairman: Dr. BATUKHAN TATKAYEV; Co-chairman: Mr. ARMAN UMIRZAKOV; Co-chairman: Dr. ARAILYM NURPEISSOVA
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Red hall #1022		PARALLEL SESSIONS		Conference room #1010	
AIII. ADVANCED NANOMATERIALS FOR ENERGY STORAGE			BIII. ADVANCED NANOMATERIALS FOR DIFFERENT APPLICATIONS		
Chairman: Prof. ZHUMABAY BAKENOV, Co-Chairman: Prof. BERIK UZAKBAIULY			Chairman: Dr. SERGEY TOKAREV, Co-Chairman: Dr. BAKTIYAR SOLTABAYEV		
K4 ONLINE 09 ⁰⁰ –09 ³⁰ KEYNOTE	Prof. SUNG-SOO KIM Chungnam National University, South Korea	BOOSTING THE ELECTROCHEMICAL PROPERTIES OF Mg-DOPED SiO _x ALLOY BY CARBON COATING FOR FABRICATION OF HIGH-ENERGY LITHIUM-ION BATTERIES	BIII.1 09 ³⁰ –09 ⁴⁵	Dr. SERGEY TOKAREV Nesmeyanov Institute of Organoelement Compounds of Russian Academy of Sciences, RF	RUTHENIUM (II) COMPLEXES OF IMIDAZO-1,10-PHENANTHROLINES: HETEROGENEOUS ELECTRON TRANSFER AND GAS SENSORY PROPERTIES
K5 ONLINE 9 ³⁰ –10 ⁰⁰ KEYNOTE	Prof. SEUNG-TAEK MYUNG Sejong University, South Korea	MN-BASED HIGH-CAPACITY CATHODE MATERIALS FOR SODIUM-ION BATTERY	BIII.2 09 ⁴⁵ –10 ⁰⁰	Ms. ALIYA ZHAGIPAROVA NU, RK	KEY FACTORS AND PERFORMANCE CRITERIA IN WEARABLE STRAIN SENSORS BASED ON POLYMER NANOCOMPOSITES
AIII.1 10 ⁰⁰ –10 ¹⁵	Ms. YERKEZHAN YERKINBEKOVA, NU, RK	FUNCTIONALIZED LIGNIN-CONTAINED NANOFIBROUS SEPARATOR WITH HIGH STABILITY FOR SAFE LITHIUM-ION BATTERIES BY UV-ELECTROSPINNING	BIII.3 10 ⁰⁰ –10 ¹⁵	Dr. GULNUR KALIMULDINA, NU, RK	FLEXIBLE SINGLE ELECTRODE TRIBOELECTRIC NANOGENERATOR
AIII.2 10 ¹⁵ –10 ³⁰	Ms. NARDANA BAZYBEK NU, RK	MAXIMIZING SPECIFIC CAPACITY OF NUTTY HARD CARBON: IMPACT OF TREATMENT CONDITIONS ON STRUCTURAL AND ELECTROCHEMICAL PROPERTIES	BIII.4 10 ¹⁵ –10 ³⁰	Mr. YERKEBULAN KADYROV NLA, RK	Ti DOPED ZnO FILMS DEPOSITED BY MAGNETRON SPUTTERING FOR GAS SENSORS

COFFEE BREAK

AIV. ADVANCED NANOMATERIALS FOR ENERGY STORAGE			BIV. ADVANCED NANOMATERIALS FOR DIFFERENT APPLICATIONS		
Chairman: Prof. ARTYOM ABAKUMOV, Co-Chairman: Dr. NURZHAN UMIROV			Chairman: Dr. EVGENIIA STEPANIDENKO, Co-Chairman: Dr. BAKTIYAR SOLTABAYEV		
AIV.1 10 ⁴⁵ –11 ⁰⁰	Ms. ELENA ROMADINA Skoltech, RF	NOVEL ORGANIC MATERIALS FOR NON-AQUEOUS REDOX FLOW BATTERIES: IMPLEMENTATION OF TRIARYLAMINE AND PHENAZINE CORE STRUCTURES	BIV.1 ONLINE 11 ⁰⁰ –11 ¹⁵	Dr. ELENA USHAKOVA ITMO University, RF	CHIRAL CARBON DOTS FOR BIOAPPLICATIONS
AIV.2 11 ⁰⁰ –11 ¹⁵	Dr. MIKHAIL PETROV Mendeleev University of Chemical Technology of Russia, RF	HIGH-POWER AND INEXPENSIVE ORGANIC NEGOLYTE FOR REDOX FLOW BATTERY BASED ON ANTHRAQUINONE SULFO-DERIVATIVES MIXTURE	BIV.2 11 ¹⁵ –11 ³⁰	Dr. EVGENIIA STEPANIDENKO ITMO University, RF	NIR-EMISSIVE CARBON DOTS PRODUCED FROM ORGANIC DYES VIA TEMPLATE-ASSISTED METHOD
AIV.3 11 ¹⁵ –11 ⁴⁵ INVITED	Prof. TAYFUR ÖZTÜRK Middle East Technical University, Turkey	DEVELOPMENT OF POLYAMORPHOUS CATHODES FOR IT-SOFCs	BIV.3 11 ³⁰ –11 ⁴⁵	Dr. RUSTAM SHARIPOV, Kazakh-British Technical University, RK	USING THE WORKS OF M. FARADAY FOR THE DEVELOPMENT OF RESEARCH
AIV.4 11 ⁴⁵ –12 ⁰⁰	Dr. FYODOR MALCHIK al-Farabi Kazakh National University, RK	BOOSTING MXENE CAPACITY BY SELF-OXIDATION IN AIR ATMOSPHERE FOR WATER-IN-SALT ELECTROLYTE-BASED SUPERCAPACITOR	BIV.4 11 ⁴⁵ –12 ⁰⁰	Dr. GAUKHAR SMAGULOVA al-Farabi Kazakh National University, RK	OBTAINING CELLULOSE FIBERS FROM THE FALLEN LEAVES
AIV.5 12 ⁰⁰ –12 ¹⁵	Ms. MADINA KALIBEK NU, RK	P-DOPED COFFEE GROUND-DERIVED HARD CARBON FOR BOOSTING SODIUM-ION BATTERIES	BIV.5 12 ⁰⁰ –12 ¹⁵	Mr. BAYAN K Aidar al-Farabi Kazakh National University, RK	OBTAINING COMPOSITIONAL FIBERS VIA ELECTROSPINNING METHOD
AIV.6 ONLINE 12 ¹⁵ –12 ²⁵ SPONSOR	Dr. JÁNOS GOMBKÖTŐ G and G Instruments Ltd.	ANALYTICAL EQUIPMENT FOR CATALYST AND BATTERY CHARACTERISATION	BIV.6 ONLINE 12 ¹⁵ –12 ³⁰	Dr. EKATERINA SOLNTSEVA Rosatom State Atomic Energy Corp., RF	ROSATOM STATE ATOMIC ENERGY CORPORATION CAPACITIES AND TECHNOLOGIES IN HYDROGEN ENERGY
AIV.7 12 ²⁵ –12 ⁴⁰	Ms. LUNARA RAKHIMBAY NU, RK	A STUDY OF CU-DOPING EFFECTS IN Na ₂ Mn ₃ O ₇ LAYERED CATHODE MATERIAL FOR SODIUM-ION BATTERY			

LUNCH BREAK

Red hall #1022		PARALLEL SESSIONS		Conference room #1010	
AV. ADVANCED NANOMATERIALS FOR ENERGY STORAGE			BV. ADVANCED MATERIALS FOR DIFFERENT APPLICATIONS		
Chairman: Prof. DMITRY PELEGOV, Co-Chairman: Dr. DAUREN BATYRBEKULY			Chairman: Dr. BATUKHAN TATYKAYEV, Co-Chairman: Dr. YER-TARGYN TLEUKENOV		
AV.1 ONLINE 14 ⁰⁰ –14 ³⁰ INVITED	Dr. SIGITA TRABESINGER Research Department General Energy (ENE) Villigen, Switzerland	DECIPHERING THE MECHANISM OF FEC-INDUCED SEI FORMATION IN LI-ION BATTERIES	BV.1 14 ⁰⁰ –14 ³⁰ PLENARY	Prof. TORU WAKIHARA The University of Tokyo, Japan	UNDERSTANDING AND CONTROLLING ZEOLITE SYNTHESIS
AV.2 14 ³⁰ –15 ⁰⁰ INVITED	Prof. DMITRY PELEGOV Ural Federal University, RF	LIMITATIONS AND CAPABILITIES OF MICRO-RAMAN SPECTROSCOPY. ELECTRODE MATERIALS FOR LITHIUM BATTERY	BV.2 14 ³⁰ –15 ⁰⁰ INVITED	Prof. NURXAT NURAJE, NU RK	DESIGNING HETEROSTRUCTURED NANOMATERIALS FOR PHOTOCATALYTIC HYDROGEN GENERATION
AV.3 15 ⁰⁰ –15 ¹⁵	Mr. OLZHAS KAUPBAY al-Farabi Kazakh National University, RK	REDUCED FORM OF PRUSSIAN BLUE (PRUSSIAN WHITE) CATHODE MATERIAL FOR APPLICATION IN TWO ELECTRODE SYSTEMS	BV.3 15 ⁰⁰ –15 ¹⁵	Dr. ANASTASSIA MASHENTSEVA, The Institute of Nuclear Physics, RK	COMPOSITE-TRACK ETCHED MEMBRANES FOR ENVIRONMENTAL APPLICATIONS
AV.4 ONLINE 15 ¹⁵ –15 ³⁰	Mr. YUMA SHIMBORI Tokyo Metropolitan University, Japan	APPLICATION OF 3DOM PI SEPARATOR TO LITHIUM METAL BATTERIES WITH IONIC LIQUIDS BASED ELECTROLYTE	BV.4 15 ¹⁵ –15 ³⁰	Mr. NIKOLAY VINOGRADOV Samara State Technical University, RF	COMPOSITE ALUMINOSILICATE MATERIAL BASED ON HALLOYSITE AND MCM-41 AS A SUPPORT FOR HIGHLY EFFICIENT HYDROTREATING CATALYSTS
AV.5 15 ³⁰ –15 ⁴⁵	Mr. NIKITA LUCHININ Skoltech, RF	KTiPO ₄ F AND α-TIPO ₄ AS ELECTRODE MATERIALS FOR METAL-ION BATTERIES			
AV.6 15 ⁴⁵ –15 ⁵⁵ SPONSOR	Dr. ELISABETH TURRINI DistriTech	SOLUTIONS FOR BATTERY MATERIALS: SURFACE AREA AND PORE SIZE	BV.5 15 ³⁰ –15 ⁴⁵	Mr. DMITRY KOGOLEV Tomsk Polytechnic University, RF	LASER-ASSISTED ABLATION OF Uio-66 METAL-ORGANIC FRAMEWORK ON THE PET SURFACE FOR NOVEL ELECTRODE MATERIALS
AV.7 15 ⁵⁵ –16 ¹⁰	Mr. NURZHAN BAIKALOV NU, RK	CATALYTIC EFFECTS OF DIFFERENT LOADINGS OF Ni NANOPARTICLES ENCAPSULATED IN FEW LAYERS N-DOPED GRAPHENE AND SUPPORTED BY N-DOPED GRAPHITIC CARBON IN LSB			

COFFEE BREAK

16 ⁰⁰ –16 ⁴⁵	LABORATORY TOUR Dr. AMANZHOL TURLYBEKULY (ask at the registration desk)	16 ¹⁵ –17 ³⁰	POSTER SESSION Chairman: Dr. BATUKHAN TATYKAYEV; Co-chairman: Mr. ARMAN UMIRZAKOV; Co-chairman: Ms. AIGUL SHONGALOVA
17 ³⁰ –18 ⁰⁰	AWARD & CLOSING CEREMONY		
18 ⁰⁰ –18 ⁴⁰	GALA PARTY		

SIGHTSEEING (ask at the registration desk)	
09 ⁰⁰ –12 ⁰⁰	The "ALZHIR" MUSEUM AND MEMORIAL COMPLEX (https://museum-alzhir.kz/)
09 ⁰⁰ –18 ⁰⁰	"KULAGER" RECREATION CENTER