**INESS-2025 CONFERENCE PROGRAM** Venue - NAZARBAYEV UNIVERSITY, Block C3 (entrance from Turan ave.)

> Location: Block C3. M floor Location: Block C3, M floor, Red hall

Location: Block C3, M floor, Red hall

1030-1100 COFFEE BREAK (Block C3, 1st floor)

C3.1009 (Block C3, First floor)

**BI. ADVANCED FUNCTIONAL MATERIALS** 

Chairman: Prof. Maksym Myronov;

Co-Chairman: Prof. Sung-Woo Moon

Prof. Maksym

Myronov

The University of

Warwick, UK

Prof. Zulkhair

Mansurov

Institute of

**Combustion Problems** 

Kazakhstan

**Prof. Sung-Woo** 

Nazarbayev

University, Kazakhstar

**Sumera Karim** 

Nazarbayev

University, Kazakhstan

Saniya R.

Rakisheva

Institute of Nuclear

Physics, Kazakhstan

Dr. Zakaria Ziadi

Okinawa Institute of

Science and

Technology, Japan

Tolagay

Duisebayev

Nazarbayev

University, Kazakhstan

Dr. Valery

Petrvkin

LLC, Japan

Dr.Guldana

Zhigerbayeva

**National Laboratory** 

Astana, Kazakhstan

Alina Samyratova

Institute of Batteries,

1630-1700 COFFEE BREAK (Block C3, 1st floor) 1700-1830 POSTER SESSION and LAB-TOUR Location: Atrium on the 2<sup>nd</sup> floor between blocks C3 and C4 Chairman: Dr. Ayaulym Belgibayeva; Co-chairman: Dr. Gani Yergaliuly; Dr. Zhandos Shalabayev; Lab-tour: Ms. Yerkem Kanatbekkyzy; Dr. Zhandos Shalabayev

day Factory Japan

1300-1400 LUNCH BREAK (Block C2, 3rd floor, Ballroom right) **KEYNOTE SESSION** Location: Block C3, M floor, Red hall; Chairman: Prof. Zhumabay Bakenov

**BI. ADVANCED FUNCTIONAL MATERIALS** 

Chairman: Dr. Valery Petrykin;

Co-Chairman: Dr. Zakaria Ziadi

C3.1009 (Block C3, First floor)

11<sup>00</sup>-11<sup>25</sup>

INVITED

1125\_1150

INVITED

11<sup>50</sup>-12<sup>10</sup>

12<sup>10</sup>-12<sup>30</sup>

12<sup>30</sup>-12<sup>50</sup>

L4<sup>30</sup>-14<sup>55</sup>

INVITED

14<sup>55</sup>–15<sup>15</sup>

15<sup>15</sup>-15<sup>40</sup>

INVITED

15<sup>40</sup>-16<sup>00</sup>

16<sup>00</sup>-16<sup>20</sup>

Location: Block C3, M floor, Red hall; Chairman: Prof. Zhumabay Bakenov

Ultraclean 2D hole system on

silicon with mobility beyond the

state of the art

**Development of advanced** 

nanocomposite materials for

environmental protection and

industrial applications

Low-permeability behavior of

chromium tailings: A barrier

material perspective

Investigation of intense pulsed

high-current ion beam interaction

with ITO and

**FTO** coatings

Application of track-etched

membrane decorated by Fe3O4-

Cr(azide)MIL101

MOF in the sorption of U(VI) ions

from aqueous media.

Nanomaterials and

nanofabrication for sensing

applications

In-situ optical monitoring and

morphological evolution of silicon

nanowires grown on faceted

Al2O3(0001) substrates via the

ATLAS deposition technique

Large-Scale Production of High-

**Temperature Superconducting** 

Wires for Fusion, Energy, and

**Transportation Applications** 

Multifunctional hybrid conducting

polymers and their

nanocomposites for highly stable

and flexible micro-supercapacitors

Underground hydrogen storage

sites selection using fuzzy logic

New trend of lithium ion & metal batteries by using separator having inverse opal structure

Grain size engineering of porous Si-alloy anodes for enhanced electrochemical stability

**PARALLEL SESSIONS** 

11<sup>00</sup>-11<sup>20</sup>

1120-1140

11<sup>40</sup>-12<sup>00</sup>

12<sup>00</sup>–12<sup>20</sup>

1220\_1245

INVITED

(ONLINE)

14<sup>30</sup>-14<sup>55</sup>

INVITED

1455-1515

15<sup>15</sup>-15<sup>3</sup>

(ONLINE)

15<sup>35</sup>-15<sup>55</sup>

15<sup>55</sup>-16<sup>15</sup>

Nanostructured high-performance lithium insertion materials for practical battery applications

**PARALLEL SESSIONS** 

C3.1010 (Block C3, First floor)

Biomass-derived porous carbon

for high-performance hydrogen

storage at ambient and

cryogenic temperatures

Advancing energy devices

through molecular engineering

of conducting polymers and

polyelectrolytes

Influence of electrolyte composition on the

photoelectrochemical

performance of

electrodeposited Bi2S3 thin films

Thermoelectric and electronic

properties of Bi2S3 synthesized

via green mechanochemical and

conventional routes

A review of challenges

associated with on-board

hydrogen energy storage for use

with fuel-cells in electric aircraft

C3.1010 (Block C3, First floor)

Health risk implications of

photocatalytic indoor air

purification: challenges and

mitigation strategies

Zif-derived co/NC as an efficient

catalyst for biomimetic CO2

mineral carbonation under

ambient conditions

Syngas production by carbon

dioxide conversion of methane

over the CO-based

nanocomposite catalysts with

high stable activity

**Key factors influencing** 

photocatalytic degradation of

microplastics

Real-time observation of

molecular dynamics and

chemical reactions in STEM

CII. CATALYSIS

Chairman: Prof. Bolat Uralbekov;

Co-Chairman: Dr. Reza Zamani

CI. ELECTROCHEMICAL ENGINEERING AND ADVANCED

**ENERGY CONVERSION SYSTEMS** 

Chairman: Dr. Kairat Ismailov:

Co-Chairman: Dr. Fail Sultanov

Dr. Baglan

Baqbolat

. Kazakhstan

Dr. Dana

Kanzhigitova

**National Laboratory** 

Astana, Kazakhstan

Xeniya Leontyeva

**D.V.Sokolsky Institute** 

of Fuel, Catalys,

Kazakhstan

**Abylay Abilkhan** 

**National Laboratory** 

Astana, Kazakhstan

**Prof. Desmond** 

Adair

Institute of Batteries.

Kazakhstan

Prof. Bolat

Uralbekov

Al-Farabi Kazakh

National University,

Kazakhstan

**Hafiz Abid** 

Nazarbayev

University,

Kazakhstan

**Prof. Sholpan** 

Itkulova

D.V.Sokolsky Institute

of Fuel, Catalysis, and

Electrochemistry,

Kazakhstan

Dr. Natalya Khan

Institute of batteries,

Kazakhstan

Dr. Reza Zamani

Thermo Fisher

Scientific, The

Netherlands

rbayev University,

Prof. Zhumabay Bakenov (Nazarbayev University (NU), National Laboratory Astana (NLA), Institute of Batteries (IoB)) Prof. Waqar Ahmad (The President of Nazarbayev University)

**REGISTRATION** 

920\_930

11<sup>00</sup>-11<sup>25</sup>

INVITED

11<sup>25</sup>–11<sup>50</sup>

INVITED

11<sup>50</sup>–12<sup>15</sup>

INVITED

12<sup>15</sup>-12<sup>40</sup>

INVITED

12<sup>40</sup>–13<sup>00</sup>

**K3** 

1400-1430

14<sup>30</sup>-14<sup>55</sup>

INVITED

14<sup>55</sup>–15<sup>15</sup>

15<sup>15</sup>–15<sup>35</sup>

15<sup>35</sup>-15<sup>55</sup>

15<sup>55</sup>–16<sup>15</sup>

800\_900 **OPENING CEREMONY** 900\_920

**GROUP PHOTO** KEYNOTE SESSION

K1 Prof. Kiyoshi Kanamura 930-1000

Tokyo Metropolitan University, Japan **Prof. Sung-Soo Kim** 1000-1030 Red hall (Block C3, First floor)

Chungnam National University, Republic of Korea AI. ADVANCED ENERGY STORAGE AND BATTERIES (Li+)

Prof. Ismael

Saadoune

Mohammed VI

Polytechnic University,

Benguerir, Morocco

**Dr.Oleg Drozhzhin** 

Lomonosov Moscow

State University, Russia

**Prof. Xin-Bing** 

Cheng

Southeast University,

China

Prof. Lianqi Zhang

**Tianjin University of** 

Technology,People's

**Republic of China** 

Alina

**Toktamyssova** 

Institute of Batteries,

Kazakhstan

Red hall (Block C3, First floor)

**Prof. Long Kong** 

Northwestern

University, China

Dr.Ayaulym

Belgibayeva

**National Laboratory** 

Astana, Kazakhstan

Temirlan Kerimkul

**National Laboratory** 

Astana, Kazakhstar

Yessimzhan

Raiymbekov

**National Laboratory** 

Astana, Kazakhstan

**Aizhan** 

Kazvmbetova

**National Laboratory** 

Astana, Kazakhstan

**PARALLEL SESSIONS** 

**Toward safer and cheaper** 

batteries: phosphate-based

cathodes for Li<sup>+</sup> and Na<sup>+</sup> ion

technologies

Phosphate cathode materials for

lithium-ion batteries and

methods for their improvement

Working mechanism and

materials design of

thermoresponsive electrolytes

Study on the construction of high

safety and rapid ion conduction

gel polymer

lithium battery

Development of the new 1d

nickel-rich NCM cathode for

lithium-ion battery

Electrolytes and interphases in

low temperature lithium

batteries

Carbon nanofibers embedded

with nickel phosphide for

enhanced sulfur Immobilization

in Li-S Batteries

Investigation of a dual photo-

thermally crosslinked PVA-based

gel polymer electrolyte for robust

lithium-sulfur battery

applications

Li-coated poly(ethylene oxide)-

poly(vinylidene fluoride-co-

hexafluoropropylene)-based

membrane as gel polymer

electrolyte for lithium-ion

batteries Optimizing hybrid carbon

matrices: synthesis and

electrochemical characterization

of buckwheat-derived HC and

**SWCNT** composites for Li-S

batteries

**PARALLEL SESSIONS** 

Prof. Naoaki Yabuuchi

Yokohama National University, Japan

**AI. ADVANCED ENERGY STORAGE AND BATTERIES (Li-S)** 

Chairman: Prof. Naoaki Yabuuchi

Co-Chairman: Prof. Long Kong

Chairman: Prof. Xin-Bing Cheng; Co-Chairman: Prof. Almagul Mentbayeva Red hall (Block C3, First floor)

University of Illinois,

USA

**Orazaly Sultan-**

**Akhmetov** 

National Laboratory

Astana, Kazakhstan

Farizat Aidvn

National Laboratory

Astana, Kazakhstan

**Nikolay** 

Gerasimenko

E-Globaledge

Corporation

**KEYNOTE SESSION** 

	Location: B	Block C3, M floor, Red hall; Chairman: Prof. Aishuak Konarov Co-chairman: Dr. Dauren Baty
14.0		

К4	Prof. Yongcheng Jin	Poly(ionic liquid)-based solid-state electrolyte for high performan

**PARALLEL SESSIONS** 

Ocean University of China, China

Prof. Nae Lih Wu

National Taiwan University, Taiwan

ance lithium metal batteries

**K6** Prof. Shinichi Komaba 10<sup>00</sup>-10<sup>30</sup> Tokyo University of Science, Japan

From materials science to market: recent progress in Na-ion batteries

10<sup>30</sup>-11<sup>00</sup> COFFEE BREAK (Block C3, 1<sup>st</sup> floor)

C3.1009 (Block C3, First floor)

**CIII. COMPUTATIONAL MODELLING AND THEORETICAL SIMULATION** 

C3.1010 (Block C3, First floor)

Identifying hidden trends in

complex data to design best

BI. ADVANCED FUNCTIONAL MATERIALS AND SENSORS

Chairman: Prof. Salimgerey Adilov;

All-solid-state lithium metal batteries integrating Ni-rich NCM cathodes and halide-based solid electrolytes

Chairman: Prof. Lefteri Tsoukalas: Co-Chairman: Prof. Yanwei Wang

Chairman: Prof. Rizwan Uddin: Co-Chairman: Dr. Baktiyar Soltabayev Co-Chairman: Prof. Natalia Voronina

**Prof. Natalia** 

AI. ADVANCED ENERGY STORAGE AND BATTERIES (Na-ion

batteries)

Investigation of anionic and cationic redox chemistry in p3-

**Prof. Salimgerey** 

1 ppm-detectable hydrogen gas sensor based on nanostructured Prof. Lefteri

AI/ML for discovery in the

Voronina Sejong University,

type Na0.67[Zn0.3Mn0.7]O2 layered sodium cathode

**Adilov** 1100-1120 Nazarbaye University, Kazakhstan

polyaniline

11<sup>00</sup>-11<sup>25</sup> INVITED

**PARALLEL SESSIONS** 

Tsoukalas nuclear domain Purdue University, USA

INVITED South Korea Prof. Rizwan Uddin

1100-112

INVITED

**K5** 

930-1000

Molten salt intermediate energy storage in a hybrid energy system with multiple nuclear power

1120\_114

Dr. Aitkazy Kaisha Nazarbayev University, Kazakhstar

Tailoring Carrier Suppression in a-IGZO/SiOx/a-IGZO Ultrathin Laminates

11<sup>25</sup>-11<sup>45</sup>

Dr.Sergey V. Levchenko Skolkovo Institute of cience and Technology

Russia

Dana Sapobekova

**National Laboratory** 

Astana, Kazakhstan

Mr. Sultan

**Abylkairov** 

Nazarbayev University,

. Kazakhstan

**Serik Akhmetov** 

**IC Lab** 

C3.1010 (Block C3, First floor)

**CIII. COMPUTATIONAL MODELLING AND THEORETICAL SIMULATION** 

Chairman: Prof. Moulay Rachid Babaa; Co-Chairman: Dr.Sergey V. Levchenko

metal-organic-framework catalysts for oxygen evolution reaction

Vitalii Shevchenko 11<sup>50</sup>–12<sup>10</sup> **Moscow State** University, Kazakhstan

transformations on electrochemical properties of O3-NaFe1-x-yNixMnyO2 materials as cathodes for Na-ion

batteries

Development and fabrication of

lithium-ion battery pouch cells

using A pilot production line

Development of A Zn/LiFePO4

aqueous battery system with

ZnCl2/LiCl binary electrolyte for

commercial applications

Standardless FP analysis of

lithium-ion battery cathode

material LiFePO4 by WDXRF

spectrometer

Red hall (Block C3, First floor)

AI. ADVANCED ENERGY STORAGE AND BATTERIES (Na-ion batteries)

**Chairman: Prof. Rodion Panin;** 

Co-Chairman: Dr. Nurzhan Umirov

**Prof. Seung-Taek Myung** 

Sejong University, South Korea

**Prof. Rodion Panin** 

**Lomonosov Moscow State** 

University, Russia

Anastasija D. Jablanovic

Skolkovo Institute of Science

and Technology, Russia

Dr. Lunara Rakhymbay,

Nazarbayev University,

Kazakhstan

Mikhail Agapkin

Skolkovo Institute of Science and Technology, Russia

plants and multiple energy use

Effect of Ni and Fe redox

11<sup>40</sup>-12<sup>00</sup>

12<sup>00</sup>-12<sup>20</sup>

12<sup>20</sup>-12<sup>30</sup>

SPONSOR

12<sup>30</sup>-12<sup>40</sup>

SPONSOR

The new polyanionic NaMNb(PO4)3 (M=Cr, V)

multielectron anode

Materials for Na-ion batteries based on the

Nb5+/Nb4+/Nb3+ redox transfer

Sodium and iron mixed phosphate cathode

materials: phase composition and

elecrochemical performance relations

Tailoring Mn-Fe-Ni layered oxides for high-

performance sodium-ion battery cathodes

Analysis of morphological features of binder-

free metal electrodes for a sodium-ion battery

**Anum Afroz** Nazarbayev University, Kazakhstan

Dr. Gani

Yergaliuly

National Laboratory

Astana, Kazakhstan

Dr.Reza Zamani

MN-Labtech

Ozhiken Assylbek

**Prolabsupport** 

13<sup>00</sup>–14<sup>00</sup> LUNCH BREAK (Block C2, 3<sup>rd</sup> floor, Ballroom right) **KEYNOTE SESSION** Location: Block C3, M floor, Red hall; Chairman: Prof. Rodion Panin Co-Chairman: Dr. Nurzhan Umirov

1430-1455

INVITED

14<sup>55</sup>-15<sup>15</sup>

15<sup>15</sup>-15<sup>35</sup>

15<sup>35</sup>-15<sup>45</sup>

**SPONSOR** 

16<sup>00</sup>–17<sup>00</sup> POSTER SESSION Location: Atrium on the 2<sup>nd</sup> floor between blocks C3 and C4 Chairman: Dr. Ayaulym Belgibayeva; Co-Chairman: Dr. Gani Yergaliuly; Dr. Zhandos Shalabayev

> 17<sup>00</sup>-17<sup>50</sup> AWARDING Location: Block C2, 3<sup>rd</sup> floor, Ball room right

1800–2030 CLOSING CEREMONY and GALA DINNER Location: Block C2, 3<sup>rd</sup> floor, Ball room right

The conference program is subject to change and may be updated. Please check for the latest schedule and updates regularly.

0900-1800 trip to Kulager

**CONFERENCE ACTIVITY EVENT** (get ticket on the registration desk)

**PARALLEL SESSIONS** 

remote patient health monitoring

Design of an internet of things

(IoT) based intelligent system for

**Enhancement of NO gas sensing** 

properties of titanium-doped ZnO

nanostructures via intense pulsed

ion beam irradiation

**Tackling the Challenges of Novel** 

Materials' Analysis: Recent

**Conceptual and Technological** 

**Advances in TEM** 

ProLabSupport: Equipment for

**Electrochemistry and Batteries** 

11<sup>45</sup>-12<sup>10</sup>

12<sup>10</sup>-12<sup>30</sup>

12<sup>30</sup>-12<sup>50</sup>

12<sup>50</sup>-13<sup>0</sup>

SPONSOR

Mn-rich layered cathode materials for lithium and sodium intercalation

Prof. Moulay Rachid Babaa

New Uzbekistan University,

Uzbekistan

**Ravil Ashirmametov** 

Nazarbayev University, SEDS,

Kazakhstan

Meiirzhan Nurmyrza

National Laboratory Astana

Kazakhstan

**Didar Nurbolatuly** 

Distritech

Integrating computational **Prof. Yanwei Wang National Laboratory** Astana, Kazakhstan

materials science into engineering education and energy innovation Advanced polymer-based

emulsion modeling for efficient

hydrocarbon recovery in

Kazakhstan's oil fields

Computational analysis of Bi2S3

crystal morphology and

hydrogen adsorption behavior

Laboratory solutions for

researching of nanomaterials

and advanced energy storage

systems

Machine learning (ML) approach utilizing FTIR

spectroscopy data for accurate and efficient

identification of organic components

Determining the structure of functionalized

graphene for tailored thermomechanical properties

using ML techniques

Acid rainwater-assisted mineral dissolution using

Kazakhstan's industrial waste for CO2 mineral

carbonation

**Anton Paar solutions for Battery material** 

characterization

12<sup>10</sup>-12<sup>30</sup>











**K7** 

1400-1430

1430-1450

14<sup>50</sup>-15<sup>10</sup>

15<sup>10</sup>-15<sup>30</sup>

15<sup>30</sup>-15<sup>50</sup>

DAY III, AUGUST 8, 2025