International Conference on New Energy and Optoelectronic Materials

新能源与光电材料国际学术会议 NEOM2023

Conference Program

June 3-4, 2023 Online

http://www.icneom.org/
https://neom.pasanhu.com/

International Conference on New Energy and Optoelectronic Materials (NEOM2023)

NEOM2023 will be held online during June 3-4, 2023. It aims to provide an opportunity for physicists, chemists, engineers, biologists, and other specialists on an international platform to communicate in a team and to interact, facing and solving new scientific and technological challenges, and to inspire more advanced ideas.

On behalf of the NEOM organizing committee, we sincerely thank you for attending the conference to share your research and insight.

Conference Schedule

Date	Time	Program	Online Platform
June 3, 2023	10:00-17:00	Registration	VooV Meeting / 腾讯会议 Room No: 349-3834-4530
June 4, 2023	9:00-9:10	Opening Ceremony	
	9:10-9:40	Keynote Speech 1	
	9:40-10:10	Keynote Speech 2	
	10:10-10:40	Keynote Speech 3	
	10:40-11:10	Keynote Speech 4	
	11:10-11:40	Keynote Speech 5	
	11:40-12:10	Keynote Speech 6	
	12:10-14:00	Lunch & Break	
	14:00-14:15	Oral Presentation 1	
	14:15-14:30	Oral Presentation 2	
	14:30-14:45	Oral Presentation 3	
	14:45-15:00	Oral Presentation 4	
	15:00-15:15	Oral Presentation 5	
	15:15-15:30	Oral Presentation 6	
	15:30-15:50	Poster Presentations	
	15:50-16:00	Closing Remarks	

Note: The schedule may be adjusted to the actual situation.

Part I. Opening Ceremony

9:00-9:10, Sunday, June 4, 2023

Part II. Keynote Speech

9:10-12:10, Sunday, June 4, 2023

Speaker	Speech Title	Affiliation
Kun Liang	Surface and Interlayer Chemistry enhance MXene Materials for Energy Storage	Chinese Academy of Sciences, China
Guohua Xie	Solution-Processed Organic Light-Emitting Devices	Wuhan University, China
Xin Chen	Recent development of high-performance composite nanomaterials for supercapacitor applications	East China University of Science and Technology, China
Jun Peng	Zero Carbon Technology for Maritime Engines	University of Lincoln, Lincoln, UK
Osman Adiguzel	Exothermic and endothermic reactions and Energy Storage in Reversible Behavior of Shape Memory Alloys	Firat University, Turkey
Sadek Khalifa Mohammed Shakshooki	Developments on Synthesis and Applications of Conducting Polymers	Tripoli University, Libya
Sajid Hussain Siyal	Dual Ceramic Composed by Organic-Inorganic Functional Polymer Gel Electrolyte for Dendritic-Free and Robust Lithium Batteries	Dawood University of Engineering and Technology, Pakistan

Part III. Oral Presentations

14:00-15:30, Sunday, June 4, 2023

Speaker	Paper Title	Affiliation
Qian Meng	Analysis of development of Norwegian household solar energy ecosystem	Tongji University, China
Gomaa Mohamed Gomaa Khalaf	Cation Exchange Synthesis of Wide Bandgap PbS Quantum Dots for High-Efficiency Solar Cell	Huazhong University of Science and Technology, China
Shiqiang Luo	A thin flexible zinc battery enabled by simultaneously electro-depositing both electrodes in acetate electrolytes	Zinergy Shenzhen Ltd., China
Lili Yang	Preparation of Pt/ZIF-7 hybrid porous material and its application in hydrogen fuel cell	Guangdong Polytechnic of Environmental Protection Engineering, China
Zhe Zheng	Cr-doped Pd metallene nanoribbon superstructures for oxygen reduction reaction and formic acid oxidation	Guizhou University, China
Xiaomeng Jia	Interface-rich Au-doped PdBi alloy nanochains as multifunctional oxygen reduction catalysts boost the power density and durability of a direct methanol fuel cell device	Guizhou University, China

Part IV. Poster Presentations

15:30-15:50, Sunday, June 4, 2023

Authors	Paper Title	Affiliation
Zhonghua Huang	Fatigue life analysis of offshore wind Turbine tower under combined action of wind and wave	Hunan Institute of Engineering, China
Yitang Chen	Thermal Convection-assisted Radiative Cooling Effect - Solving the Problem of Radiative Cooling Effect Failure under High Humidity	Nanjing Foreign Language School, China
Xiao Wu	Identification of adulterated honey with different varieties and concentrations based on hyperspectral imaging technology combined with deep learning	Yunnan Normal University, China

Keynote Speech

Xin Chen
Professor
East China University of Science and Technology, China

Speech Title: Recent development of high-performance composite nanomaterials for supercapacitor applications

Brief Introduction: Prof. Chen was graduated from Department of Modern Applied Physics in 1991. 1991-1996, he worked in State's Key Open Laboratory, Chinese Academy of Sciences. 1996 -2000, he studied in Department of Physics, University of Houston, USA, and received Ph.D. degree in 2000. From 2001 to 2008, he worked in Center for Advanced Materials, University of Houston, and he became Research Assistant Professor in 2006, and Visiting Professor in 2008. From November 2004 to January 2005, he was a Visiting Professor of Peking University. In 2008-2009, he was a Product Engineer in Applied Optoelectronics, Inc. USA. In 2010 -2011, he was a Visiting Research Assistant Professor at University of Illinois at Urbana-Champaign, USA. Since July 2011, he became Professor in School of Materials Science and Engineering, East China University of Science and Technology. He has 7 issued US Patents, and he has been awarded Sigma Xi Research Achievement Award, and NASA Space Act Award, USA. In 2013, he was selected as a Council Member of Shanghai Micrology Society.

Kun Liang
Professor
Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China

Speech Title: Surface and Interlayer Chemistry enhance MXene Materials for Energy Storage

Abstract: MXenes are synthesized by selective etching of A-layer elements from MAX phase. MXenes are promising candidates for energy storage, such as Li-ion batteries, aqueous Zn batteries, and supercapacitors. To improve the electrochemical performance, we can design the functional MXenes by surface and interlayer chemistry. In this talk, I will discuss our work on designing specific structures to improve electrochemical performance.

Guohua Xie
Associate Professor
Department of Chemistry, Wuhan University, China

Speech Title: Solution-Processed Organic Light-Emitting Devices

Abstract: Organic light-emitting devices (OLEDs) have many promising applications in active matrix displays, solid-state lighting, visible light communication, and medical treatment, which make them attractive in fundamental and applied researches. Currently, the manufacture of OLEDs mainly relies on high-vacuum thermal evaporation, which is highly expensive and complicated. To address this issue, solution-processed OLEDs are favorable due to the merits of large-area and low-cost. In this talk, the state-of-the-art solution-processable OLEDs will be presented and explained, including material selection and device engineering. Moreover, the innovative technologies of transfer printing and inkjet printing for solution-processed OLEDs will be elaborated, which are more competitive for large-area mass production.

Jun Peng
Professor
University of Lincoln, Lincoln, UK

Speech Title: Zero Carbon Technology for Maritime Engines

Abstract: To achieve net zero CO2 emissions for maritime vessels, various technologies with carbon-neutral fuels and required engine combustion systems are being studies and developed. This lecture is aiming to discuss and summarise the production and supply of green and blue methanol, hydrogen and ammonia then explore those fuels' combustion characteristics and required combustion technologies to support direct net zero emissions or integrated CCS (Carbon Capture and Storage). As hydrogen can help internal combustion engines and industrial gas turbines to implement fast ignition and high temperature combustion, the difficulty for hydrogen storage and high NOx emissions generated by high combustion temperature need necessary research outcome. Ammonia can be stored with liquid stage (for high energy density) easier than hydrogen, but it is difficult to get ignition and its low combustion temperature limits the combustion efficiency. Combining hydrogen and ammonia for dual fuel combustion can get a better solution if the fuel supply system can be developed well and the combustion control can be managed for ideal combustion phase. Green methanol has been employed with several demonstration applications on maritime ships, while CCS must be integration for obtaining onboard zero CO2 emissions.

Osman ADIGUZEL
Professor
Firat University, Turkey

Speech Title: Exothermic and endothermic reactions and Energy Storage in Reversible Behavior of Shape Memory Alloys

Abstract: A series of ally systems called shape memory alloys exhibit a peculiar property called shape memory effect with special chemical compositions in the β-phase fields. This phenomenon is initiated with thermomechanical processes on cooling and deformation, and performed thermally on heating and cooling, with which shape of the material cycles between original and deformed shapes in reversible way. Therefore, this behavior can be called Thermoelasticity. This is plastic deformation, due to the soft character of materials in low temperature condition, deformation energy is stored, and release on heating by recovering the original shape, by means of reverse endothermic austenitic transformation. This behavior is governed by thermal, and stress induced martensitic transformations.

Thermal induced transformations are exothermic reactions and occur on cooling with cooperative movement of atoms in <110 > -type directions on {110}-type planes of austenite matrix along with lattice twinning reaction and ordered parent phase structures turn into twinned martensitic structure. Twinned structures turn into detwinned martensite by means of stress induced martensitic transformation with stressing. The {110}-type planes of austenite matrix represent six certain planes, and possible 24 martensite variants occur.

These alloys exhibit another property called superelasticity. This behavior is performed in mechanical manner with stressing and releasing the material in elasticity limit at a constant temperature in parent phase region, and shape recovery occurs instantly and simultaneously upon releasing, by exhibiting elastic material behavior. Superelasticity is performed in non-linear way; stressing and releasing paths are different in the stress-strain diagram, and hysteresis loop refers to energy dissipation. The strain energy is stored after releasing, and these alloys are mainly used as strain absorbent materials in building industry against the seismic events. Superelasticity is also result of the stress induced martensitic transformation and ordered parent phase structures turn into the detwinned martensitic structure with stressing in parent phase region. Therefore, lattice twinning and detwinning reactions play important role at the

structural transformations.

Copper based alloys exhibit this property in metastable β-phase region. Lattice twinning is not uniform in these alloys and cause to the formation of the complex layered structures with martensitic transformation, like 3R, 9R or 18R depending on the stacking sequences on the close-packed planes of the ordered lattice.

In the present contribution, x-ray diffraction and transmission electron microscopy (TEM) and X-Ray diffraction studies were carried out on two copper- based CuZnAl and CuAlMn alloys. Electron diffraction patterns and x-ray diffractograms exhibit superlattice reactions. X-ray diffractograms taken in a long-time interval show that locations and intensities of diffraction peaks change with the aging time at room temperature, and this result refers to the rearrangement of atoms in diffusive manner.

Sadek Khalifa Mohammed Shakshooki
Professor
Department of Chemistry, Tripoli University, Tripoli, Libya.

Speech Title: Developments on Synthesis and Applications of Conducting Polymers

Abstract: Conducting polymers have been used in various applications (battery, supercapacitor, electromagnetic shielding, chemical sensor, biosensor, nanocomposite, light-emitting-diode, electrochromic display etc.) due to their excellent conductivity, electrochemical and optical properties, and low cost.

Sajid Hussain Siyal
Associate Professor
Dawood University of Engineering and Technology, Pakistan

Speech Title: Dual Ceramic Composed by Organic-Inorganic Functional Polymer Gel Electrolyte for Dendritic-Free and Robust Lithium Batteries

Abstract: Lithium-metal batteries (LiMBs) are promising energy storage devices due to the high capacity and minimum negative electrochemical potential. Nevertheless, their concrete applications remain disturbed by unbalanced electrolyte-electrode interfaces, limited electrochemical window, and high-risk. Herein, a novel strategy to obtain dual ceramic-based electrolytes that possess great potential in energy storage due to their higher level of energy densities in LiMBs. Dual-ceramic (LATP-LLTO) gel polymer electrolyte (DCGPE) film developed via the curable system, aimed to prepare flexible Li+ interpenetrating network film to integrate the two ceramic structures with polyethylene oxide (PEO) to yield the free-standing electrolytes film for better battery safety and desired interfacial stability. The DCGPEs films presented a satisfactory electrochemical performance, including, good ionic conductivity, large transference number, and wide electrochemical stability window (ESW) at room temperature.

Most importantly, the fundamental function of LATP and LLTO is to support building a stable solid-electrolyte-interphase (SEI) and limits the growth of dendrites. Thus, prepared dual ceramic-based electrolytes effectively renders to inhibit lithium dendrite growth in a symmetrical cell Li//PEO+10% LATP+15% LLTO//Li test during charge/discharge at a current density of 2 mA/cm2and 0.25 mA/cm2 above 2400 h without short-circuiting occurrence at room temperature. Besides, the battery assembled of LiFePO4/PEO+10% LATP+20% LLTO/Li exhibits superior cyclic stability with high Coulombic efficiency. This study recommends that the binary network structures of Li-ion conductor help to design a prime solution of promising electrolyte for high performance LiMBs applications.

Supplementary Information

Instructions for Presentations

Oral Presentation

Devices:

Laptops (with MS-Office & Adobe Reader)

Materials:

Power Point or PDF files

Duration of each presentation (Tentatively):

Keynote Speech: 25 minutes of Presentation, 5 minutes of Q&A

Oral Presentation: 12 minutes of Presentation, 3 minutes of Q&A

Poster Presentation

Requirement for posters:

Add your Paper ID and Conference Name's Acronym on the top of poster.

Posters are required to be condensed and attractive.

Content: for demonstration of the presenter's paper

For online posters:

Send a PowerPoint or PDF poster to the committee in advance.

Contact Us

NEOM2023 Organizing Committee

info@icneom.org

Tel: +86- 15827124266