

The 3rd International Symposium
on
Advanced Inorganic Materials (ISAIM)

August 2nd – 5th, 2017

Venue: WPI-MANA Auditorium, NIMS, Namiki, Tsukuba

August 2nd

Registration and Welcome Reception

18:00 - Restaurant "Espoir", Epochal Tsukuba

August 3rd

Opening

9:00 - 9:05 Welcome addresses
Daisuke Fujita, Executive Vice President, NIMS
9:05 - 9:20 Introduction of MANA
Takayoshi Sasaki, Director, MANA, NIMS

Chair: Dmitri Golberg

Plenary

9:20 - 10:00 *Nanogenerators for Self-powered Systems and Large-scale Blue Energy*
Zhong Lin Wang, School of Materials Science and Engineering, Georgia Institute of Technology

Chair: Tomonobu Nakayama

Session 1

10:00 – 10:15 *Development of in-situ Electron Microscopy for Nanomaterial Property Analysis*
Dmitri Golberg, School of Physics, Chem. & Mechanical Eng, Queensland University of Technology
10:15 – 10:30 *Solid State Electrochemical Lithiation Mechanism Revealed by in-situ TEM*
Xuedong Bai, State Key Lab for Surface Science, Institute of Physics, CAS
10:30 – 10:45 *SEM as a Versatile Lab for in-situ Nanomaterial Research*
Xianlong Wei, School of Electronics Engineering & Computer Science, Peking University
10:45 – 11:00 *3D Microscopy: From Microscale to Atomic Resolution*
Zongwen Liu, School of Chemical & Biomolecular Engineering, The University of Sydney

Chair: Laure Bourgeois, Naoyuki Kawamoto

Group Photo & Coffee Break

11:00 – 11:30

Session 2

11:30 – 11:45 *High Power Rechargeable Mg/I₂ and Al/I₂ Battery*
Weiqiang Han, School of Materials Science & Engineering, Zhejiang University
11:45 – 12:00 *Flexible Energy Storage Devices, from Super Stretchable Supercapacitor to Highly Safe Battery*
Chunyi Zhi, City University of Hong Kong
12:00 – 12:15 *Atomic Scale Storage Mechanism Studies of the Advanced Electrode Materials for Li⁺ Storage*
Xi Wang, Department of Physics, School of Science, Beijing Jiaotong University
12:15 – 12:30 *Flexible and High Energy Density Asymmetrical Supercapacitors Based on Ni₃S₂/CoNi₂S₄ 3D-Network Structures*
Xijin Xu, School of Physics and Technology, University of Jinan

Chair: Guozhen Shen, Ujjal K. Gautam

Lunch

12:30 – 13:45

Session 3

13:45 – 14:00 *Metal-organic Framework Derived Materials for Secondary Battery Electrodes*
Longwei Yin, School of Materials Science and Engineering, Shandong University
14:00 – 14:15 *CNFs@MnO₂ Multifunctional Coating Layer for High-Performance Lithium-Sulfur Battery*

Chair: Yihua Gao, Jinhua Zhan

- Dequan Liu**, School of Physical Science and Technology, Lanzhou University
 14:15 – 14:30 *Inorganic Nanoporous Materials for Cancer Therapy*
Xia Li, National Institute of Advanced Industrial Science and Technology
 14:30 – 14:45 *Paper-Driven Flexible Heteroatom-Doped 3D Nanoporous Carbon Microfiber Networks with Controllable Pore Sizes for High-Performance Supercapacitors*
Pengcheng Dai, Research Inst. of Unconventional Oil & Gas and Renewable Energy, China Univ. of Petroleum

Session 4

Chair: Martin Pumera, Longwei Yin

- 14:45 – 15:00 *Unusual Structure and Properties of Magadiite, a Natural Layered Silicate*
Yusuke Ide, MANA, NIMS
 15:00 – 15:15 *Novel MXene Materials and their Properties*
Qing Huang, Ningbo Institute of Industrial Technology, CAS
 15:15 – 15:30 *New Function Exploration of Single-Layer Metal Hydroxide Nanosheets*
Renzhi Ma, MANA, NIMS
 15:30 – 15:45 *Superelastic and Ultralight Electron Source from Modifying 3D Reduced Graphene Aerogel Microstructure*
Yihua Gao, School of Physics, Huazhong University of Science and Technology

Coffee Break

15:45 – 16:05

Special Session

Chair: Chunyi Zhi

- 16:05 – 16:25 *Publishing in Wiley Materials Science Journals*
Guangchen Xu, Small, Wiley

Session 5

Chair: Xuedong Bai, Tianyou Zhai

- 16:25 – 16:40 *Polymeric Micelle Assembly' for Synthesis of Porous Materials with Crystallized Frameworks*
Yusuke Yamauchi, Australian Inst. for Innovative Materials (AIIM) & School of Chem., Univ. of Wollongong
 16:40 – 16:55 *Rare Pt Nanostructures for Efficient Energy Harvesting*
Ujjal K. Gautam, Nanomaterials and Energy Group, Dept. of Chemical Sciences, IISER-Mohali
 16:55 – 17:10 *Silver Nanowires Transparent Conductive Films and Related Devices*
Changhui Ye, Institute of Solid State Physics, Chinese Academy of Sciences
 17:10 – 17:25 *Controlled Synthesis of Single-Wall Carbon Nanotubes*
Chang Liu, Institute of Metal Research, Chinese Academy of Sciences

Banquet

Banquet: A Celebration of Professor Bando 70th Birthday

18:30 – 20:30 Banquet Hall "Asahi", Hotel Grand Shinonome, Tsukuba

August 4th

Plenary

Chair: Dmitri Golberg

- 9:00 - 9:40 *From TEM to BN Nanotubes: 43 Years of Research at NIRIM/NIMS*
Yoshio Bando, MANA, NIMS

Session 6

Chair: Zongwen Liu, Masanori Mitome

- 9:40 – 9:55 *Probing Interfacial Structure and Phase Transformations in Embedded Nano-Crystals*
Laure Bourgeois, Department of Materials Science and Engineering, Monash University
 9:55 – 10:10 *Cathodoluminescence Study of Various Semiconductor Nanostructures with Bando Group*
Takashi Sekiguchi, MANA, NIMS
 10:10 – 10:25 *Relating Structure-Properties of 1D and 2D Materials by in-situ Transmission Electron Microscopy*
Daiming Tang, MANA, NIMS
 10:25 – 10:40 Development of Nanoscale Thermal Conductivity Measurement in TEM
Naoyuki Kawamoto, MANA, NIMS

Coffee Break

10:40 – 11:00

Session 7**Chair: Weiqiang Han, Pedro Miguel Costa**

- 11:00 – 11:15 *Graphene and Boron Nitride Nanosheets: Synthesis and Applications for Energy Storage and Composite Materials*
Xuebin Wang, Department of Energy Science and Engineering, Nanjing University
- 11:15 – 11:30 *Light Element Magnetism in Carbon Doped Boron Nitride Nanosheets and Related Systems*
Wenlong Wang, State Key Lab for Surface Science, Institute of Physics, CAS
- 11:30 – 11:45 *Boron Nitride Foams Consisting of Porous Boron Nitride Microfibers*
Yang Huang, School of Materials Science and Engineering, Hebei University of Technology
- 11:45 – 12:00 *Luminescent Organic-Inorganic Hybrid Materials Based on Porous Boron Nitride*
Jing Lin, School of Materials Science and Engineering, Hebei University of Technology
- 12:00 – 12:15 *Electronic Properties of Hexagonal Boron Nitrides after Oxygen Doping and Functionalization*
Qunhong Weng, Inst. for Integrative Nanosciences, Leibniz Inst. for Solid State and Materials Research, Dresden

Lunch

12:15 – 13:30

Session 8**Chair: Renzhi Ma, Baodan Liu**

- 13:30 – 13:45 *Flexible Sensors and Integrated Systems with Low-dimensional Nanostructures*
Guozhen Shen, Institute of Semiconductors, Chinese Academy of Sciences
- 13:45 – 14:00 *Silicon Nanocrystals for Efficient Light Emitters*
Naoto Shirahata, MANA, NIMS
- 14:00 – 14:15 *Low-Dimensional Inorganic Optoelectronic Nanomaterials and Micro/Nano Devices*
Tianyou Zhai, School of Materials Science and Engineering, Huazhong University of Science and Technology
- 14:15 – 14:30 *The Underlying Micro-mechanism of Performance Enhancement of Non-Polar n-ZnO/p-AlGaN Ultraviolet Light Emitting Diode with i-ZnO Inserted Layer*
Luying Li, Center for Nanoscale Characterization and Devices, Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology
- 14:30 – 14:45 *Inorganic-Organic Hybrid Perovskite Based Photodetectors and Solar Cells*
Wei Tian, College of Physics, Optoelectronics and Energy, Soochow University

Session 9**Chair: Yusuke Ide, Qing Huang**

- 14:45 – 15:00 *Advanced Anode Materials Based on Transition Metal Oxides*
Shimou Chen, Institute of Process Engineering, Chinese Academy of Sciences
- 15:00 – 15:15 *Biomimetic Catalysts for Removal of Persistent Toxic Substances*
Jinhua Zhan, School of Chemistry and Chemical Engineering, Shandong University
- 15:15 – 15:30 *The Growth Design, Optoelectronic and Catalytic Properties of Functional Nanostructures*
Baodan Liu, Institute of Metal Research, Chinese Academy of Sciences
- 15:30 – 15:45 *Self-supported 3D Nanoarray Electrodes for Sodium Storage*
Jiangfeng Ni, College of Physics, Optoelectronics and Energy, Soochow University

Coffee Break

15:45 – 16:05

Session 10**Chair: Chang Liu, Naoto Shirahata**

- 16:05 – 16:20 *2D Nanomaterials, Nanomachines and Sensing*
Martin Pumera, Division of Chemistry & Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University
- 16:20 – 16:35 *Stabilizing Red Phosphorous Anodes with Carbon Nanotubes*
Pedro Miguel Costa, King Abdullah University of Science and Technology
- 16:35 – 16:50 *Discovery of New Solid State Materials for Phosphors and Their Photoluminescence Tuning*
Zhiguo Xia, School of Materials Science & Engineering, University of Science and Technology Beijing
- 16:50 – 17:05 *Relationship of 5d-Level Energies of Ce³⁺/Eu²⁺ with Structure and Composition of Nitride Hosts and its Applications in Phosphors*
Quanlin Liu, School of Materials Science & Engineering, University of Science and Technology Beijing

Poster Session

17:05 – 18:35

Closing

18:35 - 18:40 **Chengchun Tang**

Invitation Dinner

19:00 – 21:00 Restaurant “Angebrisa”

August 5th

Lab Tour

10:00 – 12:00 National Institute for Material Science, Namiki Campus