

# GOLDEN ACADEMY

## Message from the organizers

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Dear Colleagues and Friends,

2019 Global Research Efforts on Energy and Nanomaterials (GREEN 2019) will be held in Taipei, Taiwan during December 20-23 2019.

GREEN is being held every year and intends to provide a platform for the exchange and networking between top scientists, emerging young researchers, and students across a wide spectrum of materials science and engineering.

We would like to invite you to participate in GREEN 2019. Your active participation is the key to the success of this conference.



Yours Sincerely,

GREEN 2019 Committee

Asia Pacific Society for Materials Science (APSMR)

[www.apsmr.org](http://www.apsmr.org)



# GOLDEN ACADEMY

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## **Conference organizing committee**

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### **CONFERENCE CHAIRS**

**Prof. Tohru HIGUCHI (Tokyo University of Science)**

**Prof. Eun-Bum CHO (Seoul National University of Science and Technology)**

**Prof. Akihiro YAMASAKI (Seikei University)**

**Prof. Yuan-Ron MA (National Dong Hwa University)**

**Prof. Ren-Jei CHUNG (National Taipei University of Technology)**

**Prof. Lung-Chien CHEN (National Taipei University of Technology)**

**Prof. Darfu TAI (National Dong Hwa University)**

**Prof. Kung-Chung HSU (National Taiwan Normal University)**

### **CONFERENCE PROGRAM DIRECTORS**

**Dr. Yingxue SONG (APSMR)**

### **CONFERENCE SECRETARIAT**

**Ms. Yaru WU (APSMR)**

**Ms. Yangjun HU (APSMR)**

**Ms. Ai CHUNG (APSMR)**

# GOLDEN ACADEMY

## Conference topics

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1. **Structure materials and Functional Coatings (metals, ceramics, and composites)**
2. **Materials for Energy (saving, conversion, transfer, storage) and Environment plus Electrochemistry**
  - 2.1. **Photovoltaics**
  - 2.2. **Rechargeable Batteries and Fuel Cells**
  - 2.3. **Materials for Thermal Management and Thermal Energy Utilization**
  - 2.4. **Materials for Energy and Environmental Applications**
3. **Optics and Photonic Materials**
4. **Electronics, Magnetics and Nanomaterials**
5. **Polymer Science and Molecular Chemistry**
6. **Organic Materials and Biomaterials**
7. **Theory, Characterization and Computational Modeling of Materials**

	FRI, 12/20	SAT, 12/21	SUN, 12/22	MON, 12/23
9:00 – 10:20	Pre-session technical and discussion forums on international collaboration (by invitation only)	Oral Presentation		
10:20 – 10:30		Coffee & Tea Break		
10:30 – 12:10		Oral Presentation		
12:10 – 13:10		Lunch Break		Optional Excursion
13:10 – 14:50		Oral Presentation		
14:50 – 15:00		Coffee & Tea Break		
15:00 – 16:00		Oral Presentation	Oral Presentation	
16:00 – 16:30			Poster Session	
16:30 – 17:00		Conference Registration		
18:00 – 19:30	Conference Reception		Conference Banquet (Approx. 1.5 hrs)	

# GOLDEN ACADEMY

## Presentation List (No. 202 Meeting Room)

	FRI, 12/20	SAT, 12/21	SUN, 12/22	MON, 12/23
9:00 – 10:20	Pre-session technical and discussion forums on international collaboration (by invitation only)		12. Y.R. MA 13. Y.S. CHO	22. M. TATENO 23. P.C. CHEN
10:20 – 10:30		Coffee & Tea Break		
10:30 – 12:10			14. C.H. TSAI 15. J.L. SHEN 16. K.Y. LEE	24. T.W. WANG 25. J.H. JEONG 26. Reserved
12:10 – 13:10		Lunch Break		Optional Excursion
13:10 – 14:50			17. T. KONDO 18. H. MIURA 19. R. SAKTHIVEL	
14:50 – 15:00		Coffee & Tea Break		
15:00 – 16:00			20. K. OSHIMA 21. S.W. HSU	
16:00 – 16:30			Poster Session	
16:30 – 17:00	Conference Registration			
18:00 – 19:30	Conference Reception		Conference Banquet (Approx. 1.5 hrs)	

# GOLDEN ACADEMY

## Presentation List (No. 204 Meeting Room)

	FRI, 12/20	SAT, 12/21	SUN, 12/22	MON, 12/23
9:00 – 10:20	Pre-session technical and discussion forums on international collaboration (by invitation only)	1. S. KAMIYAMA 2. S. YOSHIMURA		
10:20 – 10:30		Coffee & Tea Break		
10:30 – 12:10		3. N. KOBAYASHI 4. S.P. FENG 5. Y. SATO		
12:10 – 13:10		Lunch Break		Optional Excursion
13:10 – 14:50		6. T. OKUTSU 7. K.I. LEE 8. R. KOBAYASHI		
14:50 – 15:00		Coffee & Tea Break		
15:00 – 16:00		9. T. MORI 10. C.H. TIEN 11. N. NAKATA		
16:00 – 16:30			Poster Session	
16:30 – 17:00	Conference Registration			
18:00 – 19:30	Conference Reception		Conference Banquet (Approx. 1.5 hrs)	

# GOLDEN ACADEMY

## Presentation List (No. 205 Meeting Room)

	FRI, 12/20	SAT, 12/21	SUN, 12/22	MON, 12/23
9:00 – 10:20	Pre-session technical and discussion forums on international collaboration (by invitation only)	1. A. YAMASAKI 2. D. KIM		
10:20 – 10:30		Coffee & Tea Break		
10:30 – 12:10		3. T. HIGUCHI 4. Y. KWON 5. C.L. HO		
12:10 – 13:10		Lunch Break		Optional Excursion
13:10 – 14:50		6. S.C. HSU 7. M. NOGUCHI 8. M. ABE		
14:50 – 15:00		Coffee & Tea Break		
15:00 – 16:00		9. J.S. LEE 10. Y.H. TSANG 11. Reserved		
16:00 – 16:30			Poster Session	
16:30 – 17:00	Conference Registration			
18:00 – 19:30	Conference Reception		Conference Banquet (Approx. 1.5 hrs)	

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## Presentations for GREEN 2019

### SATURDAY 12/21

#### Meeting Room No 204

1. Growth and characterization of GaN nanowires and GaInN/GaN multi-quantum shells (S. KAMIYAMA)
2. Development of novel magnetic recording device driven by electric field using BiFeO<sub>3</sub>-based ferromagnetic and ferroelectric thin films (S. YOSHIMURA)
3. TBA (N. KOBAYASHI)
4. Direct Thermal Charging Cell for Heat-to-Electricity Conversion (S.P. FENG)
5. Synthesis of nitrogen-doped single-walled carbon nanotubes via defluorination and their electrochemical catalytic activity for oxygen reduction reaction (Y. SATO)
6. Protein crystallization induced by surface plasmon resonance of gold nano particles (T. OKUTSU)
7. Model based optimization of thermal management materials (K.I. LEE)
8. Molecular dynamics simulation of laser ablation using electron-temperature dependent force-field (R. KOBAYASHI)
9. Control of Circular Dichroisms and Circularly Polarized Luminescence Responses in Small Organic Molecules (T. MORI)
10. Temperature-dependence growth of Hybrid MAPbBr<sub>3</sub> Perovskite Bulk Crystals MSM Structured Photodetectors (C.H. TIEN)

## 11. 1,2-Regioselective $\alpha$ -Olefin Oligomerization Catalyzed by Zirconium Complexes with [OSSO]-type Bis(phenolate) Ligands (N. NAKATA)

### Meeting Room No 205

1. Analysis of emission of volatile organic compounds from degrading polymers (A. YAMASAKI)
2. Chemically stable polymer electrolyte membranes for proton exchange membrane fuel cells (D. KIM)
3. Innovative Performance of Anode Electrode with Electron-Proton Mixed Conduction for Smart-Type Solid Oxide Fuel Cell (T. HIGUCHI)
4. Enzymatic biofuel cells using mediator embedded biocatalysts (Y. KWON)
5. Molecular Functional Materials for Photocatalytic Hydrogen Production (C.L. HO)
6. Inspection of glucose with ultra-low concentration by surface-enhanced Raman spectroscopy (S.C. HSU)
7. Analysis of the Chemical Composition of THS (Third Hand Smoke) and the Odor Originated from Cigarettes and Heated Tobaccos (M. NOGUCHI)
8. Effect of fabrication methods of self-supporting geopolymer membranes on their porosity and gas permeability (M. ABE)
9. Structural Replication of AgCl Nanostructures for Photocatalysis and Single-Particle SERS (J.S. LEE)



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10. High Performance Broadband Photodetector Based on Vertically Aligned PtSe<sub>2</sub>/GaAs Heterojunction and PtSe<sub>2</sub>/Silicon Nanowire Array (Y.H. TSANG)

11. Reserved

**SUNDAY 12/22**

**Meeting Room No 202**

12. Impact of crystal phase and 3d-valence conversion on the capacitive performance of one-dimensional fully-oxidized-state, reduced-state, and Magneli-phase nanorods-based supercapacitors (Y.R. MA)

13. In-Situ Strain Engineering in Nanostructured Inorganic Materials (Y.S. CHO)

14. Investigation of using novel nanocomposite materials as counter electrodes in dye-sensitized solar cells (C.H. TSAI)

15. Luminescence Properties of 2D-Material-Based Quantum Dots (J.L. SHEN)

16. Purification Process Assisted Surface Engineering for Perovskite CsPbBr<sub>3</sub> Quantum Dots Light-Emitting Diodes (K.Y. LEE)

17. Conductive diamond powder for electrochemical applications (T. KONDO)

18. Quantitative Visualization of Atomic-Scale Degradation of Heat-resistant Alloys under Creep-Fatigue Loadings at Elevated Temperature (H. MIURA)

19. Synthesis of biocompatible tin-sulfide based nanocomposite for biosensor application (R. SAKTHIVEL)

20. New approach for CFRP recycling using electrical treatment and catalytic process (K. OSHIMA)

21. TBA (S.W. HSU)

## POSTER SESSION

### Meeting Room No 201

- P1. Controls of Electronic Structure and Metal-Insulator Transition of VO<sub>2</sub>/NiO Multilayer (T. IMAGAWA)
- P2. Neuromorphic Resistivity Modulation of Pt/Ti<sub>0.99</sub>Sc<sub>0.01</sub>O<sub>2-d</sub>/Pt Cross-point Structure (T. FUJITA)
- P3. Study of active material and electrolyte for Alkaline Redox Flow Battery (C. NOH)
- P4. The study on the all-iron aqueous redox flow battery (M. SHIN)
- P5. Superparamagnetic NiO-doped mesoporous silica flower-like microspheres with high nickel content (J.H. LEE)
- P6. Direct dimethyl ether synthesis from CO<sub>2</sub> hydrogenation over Cu/ZrO<sub>2</sub> and zeolite mixed catalyst (S. NAKAJIMA)
- P7. Protein crystallization by surface plasmon resonance of gold colloid film (A. ITO)
- P8. Properties of irradiation source that induces protein crystallization by surface plasmon resonance (T. SATO)
- P9. Mechanical properties of the AZ91 alloys produced by thixocasting process (T. FUKUI)
- P10. Mechanical properties of the hot stamped 22MnB5 steel (Y. TANAKA)

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- P11. The improvement of the mechanical properties of Al-Si alloys by the microstructural control (R. IKEDA)
- P12. A multi-functionalized poly(aspartamide) integrated with electrically conductive hydrogel designed for Bio-Circuit (S.W. CHO)
- P13. Enhanced the structural integrity of reconstructed human skin equivalents integrated with DEJ Junction. (J.W. LIM)
- P14. Self-assembled nanoparticle of MAa-conjugated Poly(aspartamide) designed for UV screening (S. HAN)
- P15. Synthesis and Applications of UiO-66 metal-organic frameworks (J. KIM)
- P16. Friction-induced martensitic transformation in austenitic stainless steel (Y.S. LEE)

## **MONDAY 12/23**

### **Meeting Room No 202**

22. Strength of Ceramics to Metal Joint by Changing Interface Edge Shape (M. TATENO)
23. Development of Multifunctional Bio-interface Electrodes (P.C. CHEN)
24. Bioinspired Self-assembling Peptide Hydrogel in Tissue Engineering and Regenerative Medicine (T.W. WANG)
25. Self-folding of multi-layered hydrogel designed for biological machine (J.H. JEONG)
26. Reserved