

GOLDEN ACADEMY

Message from the organizers

Dear Colleagues and Friends,

2015 International Symposium for Advanced Materials Research (ISAMR 2015) will be held in Sun Moon Lake, Taiwan during August 16-20 2015.

ISAMR 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 ISAMR 2015. Your active participation is the key to the success of this conference.



Yours Sincerely,

ISAMR 2015 Committee

Asia Pacific Society for Materials Science (APSMR)

www.apsmr.org



GOLDEN ACADEMY

Conference organizing committee

CONFERENCE CHAIRS

Prof. Chi-Jung CHANG (Feng Chia University)

Prof. Nam-Joon CHO (Nanyang Technological University)

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Prof. Hitoshi MIZUNO (Shimane University)

Prof. Kiyokazu NAKAGAWA (University of Yamanashi)

Prof. Yuji SASANUMA (Chiba University)

Continue to next page.....



GOLDEN ACADEMY

Conference organizing committee (Continued from previous section)

CONFERENCE CHAIRS

Prof. Xiangyang SHI (Donghua University)

Dr. Rudder WU (National Institute for Materials Science)

Prof. Shin-ichi YUSA (University of Hyogo)

CONFERENCE PROGRAM DIRECTORS

Dr. Yingxue SONG (APSMR)

Prof. Chau-Chang CHOU (National Taiwan Ocean University)

CONFERENCE SECRETARIAT

Ms. Yangjun HU (APSMR)



Conference topics

1. **Structure materials and Functional Coatings (metals, ceramics, and composites):** No. 3(5-10), No. 3(26)
2. **Materials for energy (saving, conversion, transfer, storage) and environment plus electrochemistry**
 - 2.1. **Photovoltaics:** No. 1(21-23), No. 2(27-28)
 - 2.2. **Rechargeable Batteries and Fuel Cells:** No. H(15), No. 3(27)
 - 2.3. **Thermoelectric and Thermal Insulation Materials:**
 - 2.4. **Materials for Energy and Environmental Applications:** No. 1(25-26), No. 2(4-6), No. 2(13-2), No. 2(17-22), No. 3(2)
3. **Optics and Photonic Materials:** No. H(1), No. H(3-5), No. 2(14-15), No. 3(1), No. 3(12), No. 3(25), No. 3(28)
4. **Electronics, Magnetics and Nanomaterials:** No. H(6), No.1(11-13-1), No.1(19), No. 2(1-2,7-10), No. 3(2), No. 3(11), No. 3(13-1,13-2), No. 3(17-23)
5. **Polymer Science and Molecular Chemistry:** No.1(27), No. 2(24-26), No. 3(1), No. 3(3) No. 3(14-16), No. 3(24)
6. **Organic Materials and Biomaterials:** No. H(7-9, 10-1), No.1(1-10,14-18), No.1(24), No. 2(23),
7. **Theory, Characterization and Computational Modeling of Materials:** No. H(2), No. H(10-2, 11-14), No. 1(13-2), No. 1(20), No. 2(11-13-1), No. 2(16), No. 3(4)

	SUN, 08/16	MON, 08/17	TUE, 08/18	WED, 08/19	THU, 08/20
9:15 – 10:15	Pre-session technical and discussion forums	Oral Presentation			
10:15– 10:30		Coffee & Tea Break			
10:30 – 12:00		Oral Presentation			
12:00 – 13:15	Conference Registration	Lunch Break			
13:15 – 14:45		Oral Presentation	Conference Excursion	Oral Presentation	
14:45 – 15:00		Coffee & Tea Break		Coffee & Tea Break	
15:00 – 17:00		Oral Presentation		Oral Presentation	
17:00 – 17:15				Break	
17:15 – 18:45				Poster Session	
19:00 – 20:30				Conference Banquet	
20:30 – 22:00		Conference Reception			

GOLDEN ACADEMY

Presentation List (Hall)

	SUN, 08/16	MON, 08/17	TUE, 08/18	WED, 08/19	THU, 08/20
9:15 - 10:15	Staff Meeting	1. K.H. WEI 2. H.C. CHUI	6. L.J. CHEN 7. A. HARADA	11. Y. SASANUMA 12. T.F. MARK CHANG	
10:15 - 10:30		Coffee & Tea Break			
10:30 - 12:00		3. C.F. LIN 4. J.K. CHEN 5. K. OKAMOTO	8. A. KAWAMURA 9. E. NAKATA 10-1. G. ZHU 10-2. T. KAJIWARA	13. W.J. LEE 14. Y. AOKI 15. Y. AMAO	
12:00 - 13:15		Lunch Break			
13:15 - 14:45			Conference Excursion		
14:45 - 15:00		Coffee & Tea Break		Coffee & Tea Break	
15:00 - 17:00	Conference Registration				
17:15 - 18:45				Poster Session	
19:00 - 20:30				Conference Banquet (Approx. 2 hrs)	
20:30 - 22:00	Reception				

GOLDEN ACADEMY

Presentation List (No. 1 Meeting Room)

	SUN, 08/16	MON, 08/17	TUE, 08/18	WED, 08/19	THU, 08/20
9:15 - 10:15	Staff Meeting				24. A. HIGUCHI 25. R. VIRTUDAZO
10:15 - 10:30		Coffee & Tea Break			
10:30 - 12:00		1. T. HAYASHI 2. P.S. LEE 3. J.K. PARK	11. K. UENO 12. J. YAMANAKA 13-1. L. PALASSE 13-2. Y.P. CHIU	14. Y. NAKAYAMA 15. Y. ZHANG 16. J. RYU	26. G. KAWAMURA 27. Y. TANAKA 28.
12:00 - 13:15		Lunch Break			
13:15 - 14:45	Conference Registration	4. J. CHOI 5. R. TERO 6. L.P. TAN	Conference Excursion	17. K. M. KIM 18. M. HARUTA 19. S.H. YU	
14:45 - 15:00		Coffee & Tea Break		Coffee & Tea Break	
15:00 - 17:00		7. M. CHUNG 8. Y.C. CHANG 9. T. OOYA 10. T. MIZUNO		20. T.YAMAMOTO 21. C.F. LIN 22. H.C. HAN 23. C.H. YANG	
17:15 - 18:45				Poster Session	
19:00 - 20:30				Conference Banquet (Approx. 2 hrs)	
20:30 - 22:00	Reception				

GOLDEN ACADEMY

Presentation List (No. 2 Meeting Room)

	SUN, 08/16	MON, 08/17	TUE, 08/18	WED, 08/19	THU, 08/20
9:15 - 10:15	Staff Meeting				24. S. YUSA 25. T.IMAE
10:15 - 10:30		Coffee & Tea Break			
10:30 - 12:00		1. I. CHEN 2. Y.L. LIU 3. Reserved	11. J.L. KUO 12. J.D. CHAI 13-1. S.T. LIN 13-2. S.H. KIM	14. M.K. WEI 15. H.W.LIN 16. M.SAGISAKA	26. M. UJIHARA 27. H. MIZUNO 28. J. DAMASCO TY
12:00 - 13:15		Lunch Break			
13:15 - 14:45		4. T.C. LEE 5. Y.C. PU 6. E.A. CHO	Conference Excursion	17. Y.G. LIN 18. Y.F. LIN 19. S.M. CHANG	
14:45 - 15:00		Coffee & Tea Break		Coffee & Tea Break	
15:00 - 17:00		Conference Registration		7. M. NAGAO 8. J.C. HUANG 9. Z. AHMAD 10. K.L. LU	
17:15 - 18:45				Poster Session	
19:00 - 20:30				Conference Banquet (Approx. 2 hrs)	
20:30 - 22:00	Reception				

GOLDEN ACADEMY

Presentation List (No. 3 Meeting Room)

	SUN, 08/16	MON, 08/17	TUE, 08/18	WED, 08/19	THU, 08/20
9:15 - 10:15	Staff Meeting				24. H. SHIMOMOTO 25. J.H. LEE
10:15 - 10:30		Coffee & Tea Break			
10:30 - 12:00		1. K. KINBARA 2. C. MAEDA 3. H.C. LIN	11. Y.Y. LI 12. H.Y. LIN 13-1. J. TERAO 13-2. M. FUNAHASHI	14. U.H. CHOI 15. M. SEO 16. J. KIM	26. Y. HE 27. H. FUKUNAGA 28. C.K. LEE
12:00 - 13:15		Lunch Break			
13:15 - 14:45	Conference Registration	4. T. YAMADA 5. N. ASAO 6. B. SAHA	Conference Excursion	17. K. SAWANO 18. Y. SHIMIZU 19. C.Y. CHEN	
14:45 - 15:00		Coffee & Tea Break		Coffee & Tea Break	
15:00 - 17:00		7. Y.I. CHANG 8. J.P. WANG 9. N. OONO 10. H.P. LIN		20. D. YAMANE 21. K. KOBASHI 22. Y.K. KIM 23. L.Y. CHEN	
17:15 - 18:45		Poster Session			
19:00 - 20:30			Conference Banquet (Approx. 2 hrs)		
20:30 - 22:00	Recep tion				

GOLDEN ACADEMY

Presentations for ISAMR 2015

MONDAY 08/17

LIST Hall

1. Nano-scale Morphology for Bulk Heterojunction Polymer Solar Cells (K.H. WEI)
2. The precise measurement on anodic aluminum oxide thin films (H.C. CHUI)
3. High efficiency nitride-based light-emitting diodes fabricated through laser scribing and electrochemical etching Processes (C.F. LIN)
4. Reversibly Thermoswitchable Two-Dimensional Periodic Gratings Prepared from Tethered Poly(N-isopropylacrylamide) on Silicon Surfaces (J.K. CHEN)
5. Plasmonics toward high-efficiency InGaN-based Light-Emitting Diodes (K. OKAMOTO)

LIST No 1

1. Comprehensive investigations of hierarchical structures of interface between cells and artificial organic surfaces (T. HAYASHI)
2. Hybrid transparent conducting electrodes for flexible and stretchable devices (P. S. LEE)
3. Methods for Controlling the Properties and Function of Organic Semiconductors (J.K. PARK)

GOLDEN ACADEMY

4. A gold@polydopamine core-shell nanoprobe for long-term intracellular detection of microRNAs in differentiating stem cells (J. CHOI)
5. Artificial biomembrane system on inorganic oxides and graphene oxide (R. TERO)
6. Engineering Cell Microenvironment (L. P. TAN)
7. Developing Artificial Cell Membrane: Soft Nanoscience (M. CHUNG)
8. Biomimetic Extracellular Microenvironment for Rare Cell Isolation for Early Cancer Detection (Y.C. CHANG)
9. Tocopherol-based drug carriers: combination of antioxidation and anticancer drugs (T. OOYA)
10. Construction and Characterization of Protein-Encapsulated Electrospun Fibermats (T. MIZUNO)

LIST No 2

1. Metallic Nanoparticle Dispersions for Interconnect on Flexible Substrate by Ink-Jet Printing (I. CHEN)
2. Organo-modification of carbon nanotubes: some approaches and applications (Y.L. LIU)
3. Reserved
4. Electrochemical Properties of Metal Sulfides for Energy Applications (T.C. LEE)

GOLDEN ACADEMY

5. Titanium Dioxide Nanoheterostructures: Interfacial Charge Carrier Dynamics and Solar Fuel Generation (Y.C. PU)
6. Nanostructured carbon based non-precious metal catalyst for oxygen reduction reaction (E.A. CHO)
7. Growth and physical properties of $R(O,F)BiS_2$ (R:La,Ce,Pr,Nd) single crystals (M. NAGAO)
8. The structures, electronic properties and interactions of bismuth-based atomic materials growth on monolayer epitaxial graphene (J.C. HUANG)
9. Viability of several silane coupling agents in adhesion improvement for Stretchable Conductive Circuit (Z. AHMAD)
10. Metal–Organic Frameworks as Low Dielectric Materials (K.L. LU)

LIST No 3

1. Engineering of monodisperse oligoethylene glycols for thermoresponsive molecular materials (K. KINBARA)
2. Synthesis and Catalytic Application of Functional Porphyrins (C. MAEDA)
3. Functional Supramolecular Polymers: The Versatility of Ultrashort Peptides (H.C. LIN)
4. Control of single molecular electronic states with STM atom manipulation: toward single molecular device (T. YAMADA)

GOLDEN ACADEMY

5. Fabrication of fine sodium titanate nanowires based on the dealloying techniques (N. ASAO)
6. Surface coating: A solution for micro/nano fabrication by hot-embossing and injection molding (B. SAHA)
7. Making PVF Porous Foam with/without Using the Pore Forming Agent — A Comparison (Y.I. CHANG)
8. Synthesis of Nanosized Zirconium Carbide Powder by Magnesiothermic Reduction (J.P. WANG)
9. Nucleation of oxide particles in ODS ferritic steels (N. OONO)
10. Porous Carbon/Silica Fillers in Epoxy-Anhydride Composites for Improving Mechanical Strength and Thermal conductivity (H.P. LIN)

TUESDAY 08/18

LIST Hall

6. Advanced Electronics Devices Based on Nanoscale Copper and Copper Compounds (L.J. CHEN)
7. Head-tail type polycation as material for drug delivery system (A. HARADA)
8. Design of Biologically Stimuli-responsive Gel Particles for Biomedical Applications (A. KAWAMURA)

GOLDEN ACADEMY

9. The rational design strategy for latent ratiometric fluorescent pH probe (E. NAKATA)

10-1. Enhancing the Anticancer Efficacy of Cisplatin Using Efficient and Low-Toxic Drug Delivery Systems (G. ZHU)

10-2. Numerical Study on Mixing Performance of Glass Fiber Dispersion in a Twin-Screw Extruder with Backward-Mixing Screw Elements (T. KAJIWARA)

LIST No 1

11. Fundamental issues for vertical power devices on GaN substrates (K. UENO)

12. TEM observation of defects induced into semiconductor thin films under the control (J. YAMANAKA)

13-1. A new approach to the Transmission Kikuchi Diffraction technique (L. PALASSE)

13-2. Toward atomically, directly understanding interface science across heterostructures by cross-sectional STM (Y.P. CHIU)

LIST No 2

11. Computational Material Design and Energy Applications (J.L. KUO)

GOLDEN ACADEMY

- 12. TAO-DFT and Its Applications to Zigzag Graphene Nanoribbons (J.D. CHAI)
- 13-1. Theoretical Study on the Exciton Binding Energy of Organic Semiconducting Materials from Density Functional Theory Methods (S.T. LIN)
- 13-2. Porous metallic structures as sensors and catalyst for wastewater monitoring and treatment (S.H. KIM)

LIST No 3

- 11. Porous nanomaterials: electrochemical fabrication, simulation, and applications (Y.Y. LI)
- 12. Light Extraction from Organic Light Emitting Diodes (H.Y. LIN)
- 13-1. Synthesis of insulated molecular wires with high charge mobility directed toward molecular electronics (J. TERAOKA)
- 13-3. Nanostructured liquid-crystalline electronic functional materials bearing chiral moiety (M. FUNAHASHI)

WEDNESDAY 08/19

LIST Hall

GOLDEN ACADEMY

11. Conformational Characteristics and Structure-Property-Function Relationships of Polymers, Elucidated by ab initio Statistical Mechanics (Y. SASANUMA)
12. Characterization and Fabrication of the Metals and Metal Oxides Electrodeposited at High Pressure with Supercritical Carbon Dioxide (T.F. MARK CHANG)
13. Structural and Mechanical Properties of Graphene on Silicon Surfaces (W.J. LEE)
14. An efficient quantum chemical approach for material design (Y. AOKI)
15. Artificial Photosynthesis: Photoelectrochemical Biofuel Cell with the Carbon Dioxide Conversion Function -Combination System of Thylakoid Membrane from Microalgae *Spirulina Platensis* and Biocatalyst Immobilized Electrodes (Y. AMAO)

LIST No 1

14. Electronic Structures of Fundamental and Practical Organic Semiconductor Materials (Y. NAKAYAMA)
15. Bladder acellular matrix graft reinforced silk fibroin composite scaffolds loaded VEGF with aligned electrospun fibers in multiple layers (Y. ZHANG)

GOLDEN ACADEMY

16. Bioinspired Materials Science: Mimicking Nature's Strategies to Build Functional Materials (J. RYU)
17. Deracemization of Amino Acids by Enantioselective Extraction Coupled with Racemization (K. M. KIM)
18. An implantable hemodynamic imaging device with a two-color light source for observing two brain phenomena (M. HARUTA)
19. Enhanced dielectric performance of polymeric composites with ceramic-metal hybrid particles as fillers (S.H. YU)
20. Computational modeling of polymer crystallization (T. YAMAMOTO)
21. Dye Sensitized Solar Cells with Carbon and Cobalt Derivatives as Counter Electrodes (C.F. LIN)
22. Using Fluorine material Surface Modified Anode Buffer Layer to Control the Lateral and Vertical Domains in the Active Layer of the Organic Solar Cells (H.C. HAN)
23. Analysis of electrical characteristics of high efficiency solar cells based on various rear side etching treatment (C.H. YANG)

LIST No 2

GOLDEN ACADEMY

14. Microlens arrays for Light Extraction in OLED Lighting (M. K. WEI)
15. Sequential vacuum sublimation: A new way to make planar-type perovskite solar cells (H.W. LIN)
16. Low Surface Energy Hydrocarbon Surfactants for Water/Air and Supercritical CO₂ Surfaces (M. SAGISAKA)
17. Nanomaterials for Photoelectrochemical Water Splitting (Y.G. LIN)
18. Porous Water-repellent Silica-based Aerogel Membranes for Carbon Dioxide Capture (Y.F. LIN)
19. An Imprinted Photonic Crystal for Environmental Sensing (S.M. CHANG)
20. Solid Oxide Fuel Cells based on the Low Temperature Ceramic Coating Process (J.J. CHOI)
21. Composite electrode for micro-scale supercapacitor (S.C. JUN)
22. Electrodeposition of Layered Organo-Manganese Oxide Films for Environmental Applications (M. NAKAYAMA)
23. Dynamic micropatterning of cells on complex nanostructured surfaces using a cell-friendly photoresist (J. DOH)

LIST No 3

GOLDEN ACADEMY

14. Molecular Volume Effects on the Dynamics of Polymerized Ionic Liquids and Their Monomers (U.H. CHOI)
15. RAFT Copolymerization towards Cross-linked Nanoporous Polymers (M. SEO)
16. Scalable Sub-micron Patterning of Organic Materials Toward High Density Heterogeneous Soft Electronics (J. KIM)
17. Strained Germanium based Nano-Structures toward High Performance Optoelectronic Integrated Circuits (K. SAWANO)
18. Elemental distributions in semiconductor-based device structures analyzed by atom probe tomography (Y. SHIMIZU)
19. Anodic TiO₂ nanotubes: Synthesis and Applications (C.Y. CHEN)
20. A Sub-1G MEMS Inertial Sensor (D. YAMANE)
21. Lithographically integrated microsupercapacitors for compact, high performance, and designable energy circuits (K. KOBASHI)
22. Nanostructured complex inorganic particles and hybrid composites for efficient heat dissipation in electronic devices (Y.K. KIM)
23. The study of Cu₂ZnSnS₄ Nanocrystal/TiO₂ Nanorod Arrays Heterojunction Photoelectrochemical Cell for Hydrogen Generation (L.Y. CHEN)

POSTER SESSION

GOLDEN ACADEMY

- P1. Complex formation of LCST type diblock copolymer and fullerene and solubilization of it in Water (J. YANO)
- P2. Chelator-Free Gadolinium-Loaded Polyethyleneimine-Entrapped Gold Nanoparticles for Dual Mode CT/MR Imaging (D. LI)
- P3. Conformational characteristics in the isolated state and intermolecular interactions in the crystalline state of biodegradable nylon 4: ab initio molecular orbital calculations and NMR experiments (Y. FUKUDA)
- P4. Preparation and characterization of Nafion/phosphotungstic acid composite membranes for direct ethanol fuel cells (H. KIM)
- P5. Electrochemical fabrication and optical properties of porous tin oxide films with structural colors (S. ZENG)
- P6. Electron transfer kinetics in photoanode based on NiTi-LDH / rGO film fabricated via electrophoretic deposition (S. AZUMA)
- P7. Effect of metal ions on the quenching of photoluminescent CdTe QDs and their recovery (A. WANG)

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- P8. Performance of SOFC using $\text{La}_{0.85}\text{Sr}_{0.15}\text{Cr}_{1-x}\text{Ni}_x\text{O}_3/\text{CeO}_2$ composite anode with various Ni content and mixing composition (M. SAITO)
- P9. Pluripotency and proliferation of amniotic fluid-derived stem cells cultured on biomaterials grafted with oligopeptides and cyclic RGD, having optimal elasticity (S. MUDULI)
- P10. Hydrogen Photoproduction Enhancement by a Pyrene-pendant Rh Catalyst Immobilized to Reduced Graphene Oxide (S. J. PARK)
- P11. Theoretical design for NLO polymers (Y. AOKI)
- P12. Bestow metal foams with nanostructured surface via a facile electrochemical method for improved device performance (Y. ZHAN)
- P13. Compression Deformation of Micro-Components Fabricated by FIB from Gold Electrodeposited Films (M. YOSHIBA)
- P14. Electrochemical doping of anatase TiO_2 nanotube arrays and their energy-environment-related applications (H. BIAN)
- P15. CNF catalysts for efficient oxygen reduction reaction with a systematic study of active site formation (M.J. KIM)

GOLDEN ACADEMY

- P16. 3D monolithic electrodes enabled by surface mechanical attrition techniques-facilitated dealloying (J. ZHANG)
- P17. Interaction of OH⁻ with Xylan and Its Hydrated Complexes: Structures and Molecular Dynamics Study Using Elongation Method (L. JIN)
- P18. Hydrogels grafted with different sequence of oligo-peptide for xeno-free culture of human PSCs (Y.M. CHEN)
- P19. Facile ambient temperature synthesis and characterization of a stable nano-sized hollow silica particles using water-soluble poly(methacrylic acid) sodium salt templating (R. VIRTUDAZO)
- P20. Ag nano-particles filled TiO₂ nanotubes prepared by electrophoretic deposition (W. XING)
- P21. Defect Creation and Functionalization of Delicate Surfaces via Surface Mechanical Attrition Treatment (Z. LI)
- P22. Highly efficient electronic structure calculations of biomaterials for their functional design (Y. ORIMOTO)

GOLDEN ACADEMY

P23. Human stem cell culture and detachment on biomaterials immobilized with thermoresponsive nanobrush (Y.T. LU)

P24. Development of pH-Responsive Biocompatible Polyion Complex Vesicle (Y. TSUDA)

THURSDAY 08/20

LIST No 1

24. Human Pluripotent Stem Cell Culture on Hydrogels Grafted with Nanosegments for Xeno-free Culture (A. HIGUCHI)

25. Facile ambient temperature synthesis and characterization of a stable nano-sized hollow silica particles using water-soluble poly (methacrylic acid) sodium salt templating (R. VIRTUDAZO)

26. Photocatalytic performance of gold-deposited mesoporous silica-titania under UV and visible light illumination (G. KAWAMURA)

27. Physical Ageing Study of Polystyrene: A DSC investigation of the Enthalpy Relaxation and Film Stretching (Y. TANAKA)

LIST No 2

24. Polyion Complex Micelles Formed from Oppositely Charged Diblock Copolymers (S. YUSA)

GOLDEN ACADEMY

- 25. Self-assembling of Amphiphilic Block Copolymers with Dendritic Side Chains and Their Drug-carrying Ability (T. IMAE)
- 26. Preparation of Confeito-Like Au Nanoparticles and Their Surface-Enhancing Effects (M. UJIHARA)
- 27. Fabrication and Optical Properties of Metallic Microcavities Containing Dye J-aggregates (H. MIZUNO)
- 28. Electrochemical deposition of fullerene-doped ZnO thin films for hybrid solar cells (J. DAMASCO TY)

LIST No 3

- 24. Synthesis of Functional Polymers by Polymerization of Diazocarbonyl Compounds (H. SHIMOMOTO)
- 25. Carrier injection and transport in phosphorescent organic light-emitting diodes (J.H. LEE)
- 26. Convenient manufacturing of high-performance powder metallurgy high speed steel (Y. HE)
- 27. Oxygen Reduction Reaction of Silk-Derived Activated Carbon as Non-Precious Metal Catalyst for PEFC (H. FUKUNAGA)
- 28. High quality Ta₂O₅ thin film/waveguide fabrication and its nonlinear properties: Novel material for Si photonics (C.K. LEE)