

# GOLDEN ACADEMY

## Message from the organizers

---

Dear Colleagues and Friends,

Asia Pacific Society for Materials Research 2017 Annual Meeting (APSMR 2017 Annual Meeting) will be held in in Hokkaido, Japan during July 27-30 2017.

APSMR 2017 Annual Meeting is a new symposium and aimed 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 APSMR 2017 Annual Meeting. Your active participation is the key to the success of this conference.



Yours Sincerely,

APSMR 2017 Annual Meeting Committee

Asia Pacific Society for Materials Science (APSMR)

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



# GOLDEN ACADEMY

## Conference organizing committee

---

### CONFERENCE CHAIRS

Prof. Edward Yi CHANG (National Chiao-Tung University)

Prof. Roy CHANTRELL (The University of York)

Prof. Zhili DONG (Nanyang Technological University)

Prof. Yoon-Bong HAHN (Chonbuk National University)

Prof. Akon HIGUCHI (National Central University)

Prof. Jason Shian-Ching JANG (National Central University)

Prof. Taesuk JANG (Sun Moon University)

Prof. Masanobu KOBAYASHI (Chiba Institute of Technology)

Prof. Insup NOH (Seoul National University of Science & Technology)

Prof. Chong Rae PARK (Seoul National University)

Prof. Myung Kwan SONG (Korea Institute of Materials Science)

Prof. Jianfang WANG (The Chinese University of Hong Kong)

Prof. Hui-Fen WU (National Sun Yat-sen University)

Dr. Rudder WU (National Institute for Materials Science)

Continue to next page.....



# GOLDEN ACADEMY

## **Conference organizing committee (Continued from previous section)**

### **CONFERENCE PROGRAM DIRECTORS**

**Dr. Yingxue SONG (APSMR)**

### **CONFERENCE SECRETARIAT**

**Ms. Yaru WU (APSMR)**

**Ms. Yangjun HU (APSMR)**



# GOLDEN ACADEMY

## Conference topics

---

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*

|               | THU, 07/27   | FRI, 07/28           | SAT, 07/29                             | SUN, 07/30           |
|---------------|--|----------------------|--|----------------------|
| 9:00 – 10:20  | Pre-session technical and discussion forums on international collaboration | Plenary Presentation |  |                      |
| 10:20 – 10:30 |  | Coffee & Tea Break   |  |                      |
| 10:30 – 12:00 |  | Oral Presentation    |  |                      |
| 12:10 – 13:00 |  | Lunch Break          |  | Conference Excursion |
| 13:10 – 14:40 |  | Oral Presentation    |  |                      |
| 14:40 – 14:50 |  | Coffee & Tea Break   |  |                      |
| 14:50 – 16:30 |  | Oral Presentation    |  |                      |
| 17:00 – 18:30 | Conference Registration  |                      | Poster Session                         |                      |
| 19:00 – 20:30 | Conference Reception   |                      | Banquet (Japanese convivial gathering) |                      |

# GOLDEN ACADEMY

## Presentation List (No. 104 Meeting Room)

|                     | THU, 07/27   | FRI, 07/28  | SAT, 07/29  | SUN, 07/30                     |
|---------------------|--|---|---|--------------------------------|
| 9:00<br>–<br>10:20  | Pre-session<br>technical and<br>discussion forums<br>on international<br>collaboration | 1. G.P. CHEN<br>2. H.F. WU  | 13. J.S.C. JANG<br>14. J.H. HSIEH                 | 24. G.I. IM<br>25. W. AL ZOUBI |
| 10:20<br>–<br>10:30 |  | Coffee & Tea Break  |   |                                |
| 10:30<br>–<br>12:00 |  | 3. S.J. LUE<br>4. J.S YU<br>5. K. NAGAI                             | 15. H. YAMANE<br>16. K. HALADA<br>17. Y. YASUKAWA | 26. M. ISHIKAWA<br>27.<br>28.  |
| 12:10<br>–<br>13:00 |  | Lunch Break   |   | Conference Excursion           |
| 13:10<br>–<br>14:40 |  | 6. A. HIGUCHI<br>7. W. M. FONG<br>8. Y.S. NAM                       | 18. Hwijun KIM<br>19. H.J. CHOI<br>20. M.S. KONG  |                                |
| 14:40<br>–<br>14:50 |  | Coffee & Tea Break  |   |                                |
| 14:50<br>–<br>16:30 |  | 9. D. C. LIM<br>10. G.H. KIM<br>11. J.M. SHIN<br>12. K. KRANTHIRAJA | 21. M.W. LEE<br>22. F.L. HSIAO<br>23. B.S. KIM    |                                |
| 17:00<br>–<br>18:30 | Conference<br>Registration   |   | Poster Session                                    |                                |
| 19:00<br>–<br>20:30 | Conference<br>Reception  |   | Banquet (Japanese<br>convivial gathering)         |                                |

# GOLDEN ACADEMY

## Presentation List (No. 105 Meeting Room)

|                     | THU, 07/27   | FRI, 07/28   | SAT, 07/29                                      | SUN, 07/30                   |
|---------------------|--|--|---|------------------------------|
| 9:00<br>–<br>10:20  | Pre-session<br>technical and<br>discussion forums<br>on international<br>collaboration | 1. Y.K. LEE<br>2. K.J. LEE                               | 13. Z.F. HUANG<br>14. D.H. KIM                  | 24. D.W KANG<br>25. T. J. HA |
| 10:20<br>–<br>10:30 |  | Coffee & Tea Break                                       |   |                              |
| 10:30<br>–<br>12:00 |  | 3. S.M. MOON<br>4. J.Y. KIM<br>5. Y. NAKAYAMA            | 15. D. SUESS<br>16. Y. TOGA<br>17. H. HIRAO     | 26. J.U. PARK<br>27.<br>28.  |
| 12:10<br>–<br>13:00 |  | Lunch Break  |   | Conference Excursion         |
| 13:10<br>–<br>14:40 |  | 6. L. SHAO<br>7. Z.H. KIM<br>8. J.T.F. NG                | 18. Y.P. HSIEH<br>19. J.H. KIM<br>20. C.C. TING |                              |
| 14:40<br>–<br>14:50 |  | Coffee & Tea Break                                       |   |                              |
| 14:50<br>–<br>16:30 |  | 9. Y. LONG<br>10. H.D. SUN<br>11. A. TOK<br>12. S.W. HAN | 21. Hyunjin KIM<br>22. W.J. KIM<br>23. M.W. OH  |                              |
| 17:00<br>–<br>18:30 | Conference<br>Registration   |  | Poster Session                                  |                              |
| 19:00<br>–<br>20:30 | Conference<br>Reception  |  | Banquet (Japanese<br>convivial gathering)       |                              |

# GOLDEN ACADEMY

## Presentation List (No. 106 Meeting Room)

|                     | THU, 07/27   | FRI, 07/28   | SAT, 07/29                                | SUN, 07/30                           |
|---------------------|--|--|---|--------------------------------------|
| 9:00<br>–<br>10:20  | Pre-session<br>technical and<br>discussion forums<br>on international<br>collaboration | 1. J.Y. LIN<br>2. S.K. KIM                                 |   | 24. T. WATANABE<br>25. L. XU         |
| 10:20<br>–<br>10:30 |  | Coffee & Tea Break   |   |                                      |
| 10:30<br>–<br>12:00 |  | 3. Y.C. TSENG<br>4. T. YAMADA<br>5. Y.H. CHU               |   | 26. Y.H. KIM<br>27. K.Y. BAEK<br>28. |
| 12:10<br>–<br>13:00 |  | Lunch Break  |   | Conference Excursion                 |
| 13:10<br>–<br>14:40 |  | 6. H. YAMAGUCHI<br>7. Hyojung KIM<br>8. Y. SHIRATSUCHI     |   |                                      |
| 14:40<br>–<br>14:50 |  | Coffee & Tea Break   |   |                                      |
| 14:50<br>–<br>16:30 |  | 9. P.H. TSAI<br>10. J. KANG<br>11. C.C. KUO<br>12. Y.G. KO |   |                                      |
| 17:00<br>–<br>18:30 | Conference<br>Registration   |  | Poster Session                            |                                      |
| 19:00<br>–<br>20:30 | Reception  |  | Banquet (Japanese<br>convivial gathering) |                                      |

# GOLDEN ACADEMY

## Presentations for APSMR 2017 Annual Meeting

**FRIDAY 07/28**

**Meeting Room No 104**

1. Preparation of Extracellular Matrix-Derived Scaffolds for Tissue Engineering (G.P. CHEN)
2. Photoluminescent Carbon Dots 'Clathrate-like' Nanostructures for Targeted Bioimaging and Photo-Chemotherapy of Cancer (H.F. WU)
3. Graphene Oxide Nanocomposite Membrane Electrolytes for Alkaline Direct Alcohol Fuel Cells (S.J. LUE)
4. Zwitterionic Hydrogels Incorporated with Peptides Enhance the Human Adipose-derived Stem Cells Proliferation and Differentiation (J.S. YU)
5. Gas Barrier Properties in Modified Poly(Lactic Acid) Membranes (K. NAGAI)
6. Human Pluripotent Stem Cell Culture on Hydrogels Grafted with Nanosegments for Feeder-free Culture (A. HIGUCHI)
7. Probing Cellular Responses Using Bio-Engineered Recombinant Proteins (W.M. FONG)
8. Nanoparticle-based Photodynamic Chemotherapy to Boost in Vivo Efficacy of Anti-cancer Agents (Y.S. NAM)
9. Recent Progress in Semi-Transparent Organic Photovoltaics (D.C. LIM)
10. Fluorine Functionalized Graphene Nano Platelets for Highly Stable Inverted Perovskite Solar Cells (G.H. KIM)



# GOLDEN ACADEMY

11. Systematic Band Gap Tuning of Lead Free Bismuth Halide Perovskite Solar Cells  
(J.M. SHIN)
12. Highly Efficient Multi-Functional  $\pi$ -conjugated Polymers for High Performance Perovskite and Organic Solar Cells with Long-Term Stability (K. KRANTHIRAJA)

## Meeting Room No 105

1. Structure and Activity of Unsupported MoS<sub>2</sub> Catalysts for Slurry Phase Hydrocracking of Vacuum Residue (Y.K. LEE)
2. Self-powered Flexible Electronic Systems (K.J. LEE)
3. Surface Treatment of Light Metals Based on Anodic Oxidation Method for Corrosion Protection (S.M. MOON)
4. Highly Efficient NiO-based p-i-n type Perovskite Solar Cells (J.Y. KIM)
5. Electric Double Layer at High Salt Concentration: Effects of Ion Finite Size and Dielectric Decrement (Y. NAKAYAMA)
6. Colloidal Plasmonic Nanorotors Propelled by Light (L. SHAO)
7. Infrared Nanoscopy Studies on the Stacking-Domains of Few-Layer Graphene (Z.H. KIM)
8. On the Macroscopic Description of Optical Stress in Metamaterials (J.T.F. NG)
9. Progress in Thermochromic Materials for Smart Window Applications (Y. LONG)
10. Novel Optoelectronic Properties of Cesium Lead Halid Perovskite Nanostructures (H.D. SUN)

# GOLDEN ACADEMY

11. Atomic Layer Deposition of 3D TiO<sub>2</sub>/MoS<sub>2</sub> Nanostructures for Photoelectrochemical Solar Hydrogen Generation (A. TOK)
12. Automated ab Initio Calculations for Efficient Screening of Functional Oxides (S.W. HAN)

## Meeting Room No 106

1. Modification of Li<sub>4</sub>Ti<sub>5</sub>O<sub>12</sub> Anode Materials for High-Rate Li-ion Batteries (J.Y. LIN)
2. Magnetic Vortex Dynamics in Nanoelements (S.K. KIM)
3. Operando X-ray Spectroscopy Study on Spintronic Materials (Y.C. TSENG)
4. STM Study for Single Molecule Devices (T. YAMADA)
5. Oxide Heteroepitaxy for Flexible Electronics (Y.H. CHU)
6. GaAs/AlGaAs Phononic Crystal Waveguide (H. YAMAGUCHI)
7. Tailoring Material Properties of Organic Semiconductors by Ultra Fast Pulses (Hyojung KIM)
8. Dynamical Magnetoelectric Switching of Perpendicular Exchange Bias (Y. SHIRATSUCHI)
9. Significantly Enhanced Mechanical Properties of ZrAlCo-Based Bulk Metallic Glass By Adding Ta Element (P.H. TSAI)
10. First-principles Study of Non-Isovalent Si<sub>2</sub>AlP And Si<sub>2</sub>ZnS Alloys: Covalent, Ionic and Their Mixed Phases (J. KANG)

# GOLDEN ACADEMY

11. RGB-Switchable Porous Electrospun Nanofiber Chemosensor-filter Prepared from Multifunctional Copolymers for Versatile Sensing of pH and Heavy Metals (C.C. KUO)

12. A New Pathway to Fabricate Protective Defect-Free Layer (Y.G. KO)

**SATURDAY 07/29**

**Meeting Room No 104**

13. Preparation and Properties Characterization of Fe-Based Amorphous Alloy Coating Fabricated by HVOF Thermal Spraying (J.S.C. JANG)

14. Development of Multi-Functional Tantalum-Based Nanocomposite Thin Films for Improved Anti-Wear, Anti-Bacteria Properties, and Biocompatibility (J.H. HSIEH)

15. Magneto-optical Cavity Effect on Perpendicular Magnetic Multilayers for Chemical Sensing Applications (H. YAMANE)

16. Urban Mined Medal Goes Beyond 2020 (K. HALADA)

17. Modification of Physical Properties in TbFeCo Thin Films by Localized Surface Plasmon Resonance of Au Nanoparticles (Y. YASUKAWA)

18. Microstructure and Soft Magnetic Properties of Fe-Based Soft Magnetic Composites Controlled by Diffusion During Multi-Step Sintering Process (Hwijun KIM)

# GOLDEN ACADEMY

19. Structural Effect of Two-dimensional BNNS on Strengthening and Grain Growth Suppression Behaviors in Al-Matrix Nanocomposites (H.J. CHOI)
20. Improvement of Catalyst Performance from Porous Metal Support in SMR Process for Hydrogen Production (M.S. KONG)
21. Effect of 1st Post-Sintering Annealing on the Microstructural and Magnetic Properties of a Ga-doped Nd-Fe-B Sintered Magnet (M.W. LEE)
22. Acousto-optical Interaction in Phoxonic Crystal based on Silicon Fishbone Nanobeam (F.L. HSIAO)
23. Biodegradable, Nanoarchitected Membranes for Layer-by-Layer Cell Coculture (B.S. KIM)

## **Meeting Room No 105**

13. Plasmonic Nanohelices with Chiroptical Activity (Z.F. HUANG)
14. Plasmon-mediated Advanced Functional Nanomaterials and Devices (D.H. KIM)
15. Critical Noise Sources and Bit Curvatures of Heat Assisted Recording up to 10 Tbit/in<sup>2</sup> (D. SUESS)
16. Finite Temperature Analysis of Nd<sub>2</sub>Fe<sub>14</sub>B Permanent Magnet Based on Monte Carlo methods (Y. TOGA)
17. Computational Studies of Chemical Reactions of Practically Important Molecular Systems (H. HIRAO)

# GOLDEN ACADEMY

18. Improving the Synthesis of Graphene for 2nd Generation Applications (Y.P. HSIEH)
19. Synthesis of Dendrimer-Encapsulated Pt Nanoparticles and Their Useful Catalytic Activities (J.H. KIM)
20. Optoelectronic Properties of Multilayer Stacking Cadmium Sulfide-Graphene Composite Material by Successive Ionic Layer Adsorption and Reaction (C.C. TING)
21. Free-standing Bimodal Carbon Nanotube Cathodes and Quasi-Solid-State Electrolytes for Li-O<sub>2</sub> Batteries (Hyunjin KIM)
22. Membrane Electrode Assembly (MEA) Comprising the Pt-C/Pt Supported Hollow Structured ZrO<sub>2</sub> Dual Layers for Self-humidifying PEMFC (W.J. KIM)
23. Enhancing Thermoelectric Properties through Controlling Heterophase and Modulating Crystal Structure (M.W. OH)

## **POSTER SESSION**

- P1. Significantly Enhanced Mechanical Properties of ZrAlCo-based Bulk Metallic Glass by Adding Ta Element (J.S.C. JANG)
- P2. Evolution of Microstructure and Hardness of the TiAlVCrX (X= Fe, Mn, or Cu) High Entropy Alloys (K.Y. C. LIAO)

# GOLDEN ACADEMY

P3. Development of Inverted Organic Photovoltaics with Anion doped ZnO Interlayer (J.H. JEONG)

P4. Improving Stability of Perovskite Solar Cell Employing Fluorocarbon Encapsulation (B.C. KANG)

P5. Simple Bandgap Tuning of Rubidium Bismuth Iodide as a Lead-Free and Stable Perovskite Solar Cells (PSCs) (A. JANG)

P6. Synthesis and Optical Properties of Colloidal Lead-free Perovskite Quantum Dots (S. JUNG)

P7. Characterization of CNF Incorporated with Aligned CNTs for Lithium-Ion Batteries (H.I. CHO)

P8. A Dual Imprinting of Organic Mesocrystal into N-doped Porous Carbon for High Performance Lithium Ion Battery (M. BYEON)

P9. Polyaniline-Coated Gold Nanocrystals with Tunable Plasmon for Active Plasmon Switching (W.Z. LU)

P10. Anisotropic (Au Nanobipyramid)/Pd Nanostructures for Pd-Site-Dependent Plasmonic Photocatalysis (H.K. YIP)

P11. Simulation Research of Spin Dynamics in Voltage-torque MRAM (T. SATO)

# GOLDEN ACADEMY

P12. Effect of Protective Layer of CoPt Thin Film as a Base Layer of Ru (K. TAKEDA)

P13. Oxidation Resistance of AZO Protective Layer (Y. ISAJI)

P14. The Effect of Crystalline Structure on Soft Magnetic Properties of Fe-based Amorphous/Nanocrystalline Hybrid Materials (Y.J. LEE)

P15. Synthesis of  $Al_{0.5}CoCuCrFeNi$  High Entropy Alloys by Mechanical Alloying Process and Spark Plasma Sintering (S. JANG)

P16. Fabrication of NbMoTaW Refractory High Entropy Alloys by Mechanical Alloying and Spark Plasma Sintering (A. ROH)

P17. Effect of Interfacial Features on the Mechanical and Electrical Properties of rGO/Al Composites (D.Y. KIM)

P18. Effect of the Morphology of Nano-carbon Materials on Grain Growth of Copper Matrix Composites at High Temperatures (H. JANG)

P19. A Study of Impurity Reduction Process According to Milling Media in Manufacturing Ni-based Oxide Dispersion Strengthened Alloy Powder through High Energy Mechanical Alloying (D. HAN)

P20. Control Agents on Mechanical Properties at High Temperature in ODS Ni-based Superalloys (G. NOH)

# GOLDEN ACADEMY

P21. Effect of Superheating Temperature on Properties of Gr. 2 Ti Powder during Electrode Induction Gas Atomization (C. LEE)

P22. Influence of FeP11 Additive on the Soft Magnetic Properties of FeSi<sub>3.5</sub> Matrix Soft Magnetic Composites (J. HWANG)

P23. The Relationship between Cooling Rate and Soft Magnetic Properties of Fe-Si-B-Cu-X Alloys during Melting Spinning Process (M. KIM)

P24. Influence of Oxide Layers on the Soft Magnetic Properties of Fe-based Alloy Powders (S. KI)

P25. ZIF-8 Nanofiller Incorporated into Poly(vinyl alcohol) Composite Membrane for Enhanced Power Densities in Direct Methanol Alkaline Fuel Cells (P.Y. HSU)

P26. Air-Stable, Hole-Conductor-Free High Photocurrent Perovskite Solar Cells with CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub>-NiO Nanoparticles Composite (Y.S. WANG)

P27. Novel Fluorescent Chemosensory Filter Membranes Composed of Electrospun Nanofibers with Ultra-selective and Reversible pH and Hg<sup>2+</sup> Sensing Characteristics (B.Y. CHEN)

P28. Pyrene or Rhodamine Derivative-modified Surfaces of Electrospun Nanofibrous Chemosensors for Colorimetric and Fluorescent Determination of Cu<sup>2+</sup>, Hg<sup>2+</sup>, and pH. (C.J. CHO)



# GOLDEN ACADEMY

P29. Novel Highly Selective and Reversible Chemosensors Based on Dual Ratiometric Fluorescent Electrospun Nanofibers with pH<sup>-</sup> and Fe<sup>3+</sup>-modulated Multicolor Fluorescence Emission (D.H. JIANG)

P30. Structural Characteristics of Ni-containing Oxide Layer Formed on the AZ91 Mg Alloy via Plasma Electrolytic Oxidation (O.D. PUTRI)

P31. Use of ZrO<sub>2</sub> and SiO<sub>2</sub> Incorporation on Metal-oxide Layer for Improving Bio and Electrochemical Properties (J.H. MIN)

P32. Heteroepitaxy of Fe<sub>3</sub>O<sub>4</sub>/Muscovite: A New Perspective for Flexible Spintronics (P.C. WU)

P33. Self-humidifying MEA Fabricated with Pt-C/Pt-supported Hollow Structured-TiO<sub>2</sub> Dual Catalyst Layer for PEMFC (Y.D. KO)

P34. Electrogenated Chemiluminescence of Au Nanoclusters (J.M. KIM)

P35. Synthesis of Dendrimer-encapsulated Pt Nanoparticles and Their Size-dependent Catalytic Activity to Dehydrogenation (T. CHO)

P36. Effect of Rapid Austenitization on Microstructure and Mechanical Properties of Low-carbon Steel (A.P. MAHENDRADHANY)

# GOLDEN ACADEMY

P37. A Cross-shear Deformation for Optimizing the Strength and Ductility of AZ31 Magnesium Alloys (Y.H. JOO)

P38. Effect of Electrolyte Composition on the Formation Behavior of Plasma Electrolytic Oxidation Films on Al1050 Alloy (J.S. KIM)

P39. Effect of Applied Anodic Current Density on Anodic Oxidation Behavior of AZ31 Mg Alloy in NaOH Solutions (Y. KIM)

P40. Role of Regularly Ordered Ni atoms in Li Layers for Li-rich Layered Oxides (M.Y. YANG)

P41. Casting Characteristics of Al-Si alloy on Sn addition (T.J. KIM)

P42. Influence of Thermal Energy on 90 Degree Domain-switching Characteristics of PZT Piezoelectric Ceramic. (K. BAMBA)

P43. Polyethyleneimine (PEI)-Modified Graphene Oxide (GO) as a Drug Carrier for Use in Tissue Engineering. (J.S. PARK)

P44. Graphene Oxide Hydrogel Scaffold for Sustained Drug Release System (J.S. OH)

P45. Effect of Ethyl-2, 5-Dihydroxybenzoate-Incorporating PLGA-cated Titanium for Potential Use in Bone Regeneration (M.H. LEE)

# GOLDEN ACADEMY

P46. Novel Quaternized Polyvinyl Alcohol Nanocomposite Containing LaFeO<sub>3</sub> Nanofillers as an Effective Hydroxide-Conducting Electrolyte for Direct Alkaline Methanol Fuel Cells (R.K. SELVARAJ)

P47. Layer-by-layer PBI-PDDA-GO Composite Membrane for Direct Methanol Fuel Cell (S.C.M. HUANG)

P48. Interfacial Interaction and Ionic Transport of Iodide/Iodine Redox Couple in Agarose Electrolyte Containing Colloidal Titanium Dioxide Nanoparticles (C.M. SHIH)

P49. Li<sup>+</sup>- Ion Induced Modification of  $\beta$ -NaYF<sub>4</sub>: Er<sup>3+</sup>/Yb<sup>3+</sup> Phosphors Synthesized via Solid State Reaction for Security Applications (C.H. LU)

P50. Synthesis and Application of Stretchable Electrode Made of Polymeric Nanofiber and Inorganic Nanoparticles (J.K. IM)

P51. In Vivo Study of Reinforced Spinal Cage using Novel Aromatic Polyketone Composite (D.J. CHUNG)

P52. Visible-light Photocatalytic Activity of a Carbon-doped Metatitanic Acid Powder (H. SHIN)

P53. Microstructure and Semi-Hard Magnetic Properties of Fe-Co-B-Nd Alloys (D.H. KWON)

# GOLDEN ACADEMY

P54. Effect of Superheating Temperature on Properties of Ti6Al4V Powder During Electrode Induction Gas Atomization (S. HONG)

## **SUNDAY 07/30**

### **Meeting Room No 104**

24. New Intra-articular Therapeutics to Treat Osteoarthritis (G.I. IM)

25.A Modification of Inorganic Coating for Superior Corrosion Properties (W. AL ZOUBI)

26. Development of Organic Conductors Based on Molecular Symmetry and Halogene Bonding Interaction (M. ISHIKAWA)

### **Meeting Room No 105**

24. Compositional Engineering of Sn-rich Pb-Sn Binary Perovskite Solar Cells (D.W. KANG)

25. Material Design and Structural Integration for High Performance Electronics (T.J. HA)

26. Formation of Active-Matrix Pressure Sensors with Transistor Arrays (J.U. PARK)

# GOLDEN ACADEMY

## Meeting Room No 106

24. Nobel Photoresponsive Materials-Photomechanical Materials & Long Persistent Phosphorescence Materials (T. WATANABE)
25. Mechanism of Contact Between a Droplet and an Atomically Smooth Substrate (L. XU)
26. Study of Contacts based on Molecules and Carbon Nanostructures (Y.H. KIM)
27. Electromechanical Properties of PVDF-TrFE Nanocomposites with PMMA-P3HT Coated SWCNTs (K.Y. BAEK)