GOLDEN ACADEMY

Message from the organizers

Dear Colleagues and Friends,

2017 Symposium for the Promotion of Applied Research Collaboration in Asia (SPARCA 2017) will be held in Okinawa, Japan, during Feb 25 - 28 2017.

SPARCA stands for the Symposium for the Promotion of Applied Research Collaboration in Asia (SPARCA 2017), which is aimed at providing an international 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 SPARCA 2017. Your active participation is the key to the success of this conference.

Yours Sincerely,

SPARCA 2017 Committee

Asia Pacific Society for Materials Science (APSMR)

www.apsmr.org

GOLDEN ACADEMY

Conference organizing committee

CONFERENCE CHAIRS

Prof. Biswajit SAHA (Seoul National University)

Prof. Wei-Ren LIU (Chung Yuan Christian University)

Prof. EunAe CHO (KAIST)

Prof. Do Hyun KIM (KAIST)

Prof. Li-Wei TU (National Sun Yat-Sen University)

Prof. Jwo Huei JOU (National Tsing Hua University)

Prof. Xiaoding QI (National Cheng Kung University)

Prof. Chien-Cheng KUO (National Sun Yat-sen University)

Prof. Man Shing WONG (Hong Kong Baptist University)

Prof. Shen-Ming CHEN (National Taipei University of Technology)

Prof. Yun Hee JANG (Daegu Gyeongbuk Institute of Science and Technology)

Prof. Wang-Chi Vincent YEH (National Dong Hwa University)

RESEARCH·ASIA PACIFIC SOCIETY FOR MATERIALS
APSMR

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)

RESEARCH·ASIA PACIFIC SOCIETY FOR MATERIALS
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 Bio-materials
7. Theory, Characterization and Computational Modeling of Materials

<table>
<tr><th></th><th>SAT, 2/25</th><th>SUN, 2/26</th><th>MON, 2/27</th><th>TUE, 2/28</th></tr>
<tr><td>9:00 – 10:20</td><td rowspan="3">Pre-session technical and discussion forums on international collaboration</td><td colspan="3">Oral Presentation</td></tr>
<tr><td>10:20 – 10:30</td><td colspan="3">Coffee & Tea Break</td></tr>
<tr><td>10:30 – 12:00</td><td colspan="3">Oral Presentation</td></tr>
<tr><td>12:10 – 13:00</td><td rowspan="4"></td><td colspan="2">Lunch Break</td><td rowspan="8">Optional Excursion</td></tr>
<tr><td>13:10 – 14:40</td><td colspan="2">Oral Presentation</td></tr>
<tr><td>14:40 – 14:50</td><td colspan="2">Coffee & Tea Break</td></tr>
<tr><td>14:50 – 16:20</td><td colspan="2">Oral Presentation</td></tr>
<tr><td>16:20 – 17:50</td><td rowspan="2">Registration & Reception</td><td>Oral Presentation</td><td>Poster Session</td></tr>
<tr><td>17:50 – 19:00</td><td rowspan="2"></td><td>Conference Banquet</td></tr>
<tr><td>19:00 – 20:30</td><td></td><td></td></tr>
</table>

GOLDEN ACADEMY

Presentation List (Room B5)

<table>
<tr><th></th><th>SAT, 2/25</th><th>SUN, 2/26</th><th>MON, 2/27</th><th>TUE, 2/28</th></tr>
<tr><td>9:00
–
10:20</td><td rowspan="3">Pre-session technical and discussion forums on international collaboration</td><td>1. M. MIZUHATA
2. L.Q. WANG</td><td>15. Y.S. CHO
16. H.W. LI</td><td>26. X.D. QI
27. C.B. WU</td></tr>
<tr><td>10:20
–
10:30</td><td colspan="3">Coffee & Tea Break</td></tr>
<tr><td>10:30
–
12:00</td><td>3. L.W. TU
4. Q. CHEN
5. H.C. WANG</td><td>17. Y. MORITOMO
18. M.S. WONG
19. Z.D. WANG</td><td>28. I. MATSUDA
29. S.J. TANG
30. S.C. HSU</td></tr>
<tr><td>12:10
–
13:00</td><td rowspan="4"></td><td colspan="2">Lunch Break</td><td rowspan="6">Conference Excursion</td></tr>
<tr><td>13:10
–
14:40</td><td>6. W.R. LIU
7. Y. OKIMOTO
8. Y.H. JANG</td><td>20. W.S. KIM
21. N. SONOYAMA
22. B. SAHA</td></tr>
<tr><td>14:40
–
14:50</td><td colspan="2">Coffee & Tea Break</td></tr>
<tr><td>14:50
–
16:20</td><td>9. Y. LANSAC
10. B.C. HAN
11. Y.S. JUNG</td><td>23. D.H. KIM
24. J.U. PARK
25. S.H. KIM</td></tr>
<tr><td>16:20
–
17:50</td><td rowspan="3">Conference Registration</td><td>12. K.S. EOM
13. M.J. KIM
14. S.K. OH</td><td>Poster Session</td></tr>
<tr><td>17:50
–
19:00</td><td rowspan="2"></td><td rowspan="2">Conference Banquet
(Approx. 1.5 hrs)</td></tr>
<tr><td>19:00
–
20:30</td><td></td><td></td></tr>
</table>

GOLDEN ACADEMY

Presentation List (Room B7)

<table>
<tr><th></th><th>SAT, 2/25</th><th>SUN, 2/26</th><th>MON, 2/27</th><th>TUE, 2/28</th></tr>
<tr><td>9:00
–
10:20</td><td rowspan="3">Pre-session technical and discussion forums on international collaboration</td><td></td><td>15. J.C.A. HUANG
16. J.S. KIM</td><td></td></tr>
<tr><td>10:20
–
10:30</td><td colspan="3">Coffee & Tea Break</td></tr>
<tr><td>10:30
–
12:00</td><td></td><td>17. K. KINBARA
18. M. MAESATO
19. T. TSURUTA</td><td></td></tr>
<tr><td>12:10
–
13:00</td><td rowspan="5"></td><td colspan="2">Lunch Break</td><td rowspan="8">Conference Excursion</td></tr>
<tr><td>13:10
–
14:40</td><td></td><td>20. Y.G. KO
21. C.C. KUO
22. J.H. LEE</td></tr>
<tr><td>14:40
–
14:50</td><td colspan="2">Coffee & Tea Break</td></tr>
<tr><td>14:50
–
16:20</td><td></td><td>23. K.F. YUNG
24. T. FUKUDA
25. RESERVED</td></tr>
<tr><td>16:20
–
17:50</td><td rowspan="2">Conference Registration</td><td></td><td>Poster Session</td></tr>
<tr><td>17:50
–
19:00</td><td rowspan="2"></td><td>Conference Banquet
(Approx. 1.5 hrs)</td></tr>
<tr><td>19:00
–
20:30</td><td></td><td></td><td></td></tr>
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GOLDEN ACADEMY

Presentations for SPARCA 2017

SUNDAY 2/26

LIST ROOM B5

1. Preparation Method of Metal Oxide Thin Film Using Soft -Solution Process (M. MIZUHATA)
2. Engineering Materials with Microfluidic Droplets (L.Q. WANG)
3. TBA (L.W. TU)
4. Seeking New Materials via Ultrathin Multilayered Epitaxial Oxide Heterostructors (Q. CHEN)
5. ZnO/Cu_2O Photoelectrochemical and Self-powered Biosensor (H.C WANG)
6. Graphene-based Anode Materials for Li-Ion Batteries (W.R. LIU)
7. Ultrafast Optical Control of Cobalt Oxide with a Polar Structure Studied by Femtosecond Nonlinear Spectroscopy (Y. OKIMOTO)
8. TBA (Y.H. JANG)
9. Understanding DNA Bundle Formation (Y. LANSAC)
10. First Principles Computational Design of High Functional Materials for Energy Devices (B.C. HAN)
11. Machine Learning Approaches to the Configuration Energies and Chemisorption Models in Solids (Y.S. JUNG)
12. Improved Stability of Lithium Ion Battery via In-Situ Formation of High-Quality SEI (K.S. EOM)

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13. Cobalt and Molybdenum Carbide Complex for Alkaline Oxygen Evolution Reation (M.J. KIM)
14. Design of Mg Alloys for Fast Hydrogen Generation in Seawater and Their Application in Polymer Electrolyte Membrane Fuel Cells (S.K. OH)

MONDAY 2/27

LIST ROOM B5

15. Strain Engineering in Fleixble Inorganic Thin Films (Y.S. CHO)
16. Probes for Cancer-associated Antigens Detection and Live Cell mRNA Imagaing (H.W. LI)
17. Carrier Formation Dynamics in Organic Solar Cells (Y. MORITOMO)
18. Theranostic Cyanines for Near-Infrared Imaging of Amyloid-β Species and Inhibition of Amyloid-β Aggregation (M.S. WONG)
19. Simulating and Manipulating Topological Semimetals (Z.D. WANG)
20. Application of Taylor Vortex Flow to Crystallization Technology (W.S. KIM)
21. TBA (N. SONOYAMA)
22. Printing Paper – A Biodegradable Strain Sensor (B. SAHA)
23. Chemical Recycling of PET by Pretreatment and Catalytic Depolymerization (D.H. KIM)
24. Transparent and Stretchable Electronic Nanomaterials for Wearable Electronics (J.U. PARK)

25. Iron Coated Metal Meshes as Cathode for Electro Fenton Wastewater Treatment at Neutral pH Condtions (S.H. KIM)

LIST ROOM B7

15. Tuning the Electronic and Magnetic Structure of Topological Insulators by Doping, Atomic Hydrogen Etching and Proximity Effect (J.C.A. HUANG)
16. Advanced Structural Nanoprobes for Molecular Semiconductors (J.S. KIM)
17. Properties and Bio-Related Applications of Amphiphilic Molecules Comprising Monodisperse Short PEGs (K. KINBARA)
18. Funcitonal Materials in Reduced Dimensions (M. MAESATO)
19. Removal and Separation of Metal Ions From the Chromium Plating Wastewater Using Immobilized Persimmon Tannin Gel and Immobilized Arthrobacter Nicotiae Cells (T. TSURUTA)
20. Recent Development of Continuous Shear Deformation Achieving Excellent Mechanical Properties (Y.G. KO)
21. Explore the Novel Materials with Surface Sensitive Measurements (C.C. KUO)
22. Lifetime Elongation of Blue Organic Light-Emitting Diode (J.H. LEE)
23. Synthesis of Coinage Group Metal Nanomaterials for Direct Liquid Fuel Cell (K.F. YUNG)
24. Controlled Molecular Ordering of Organic Photovoltaic Cell by Electrospray Deposition Method (T. FUKUDA)
25. RESERVED

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TUESDAY 2/28

LIST ROOM B5

26. Fabrication of All-Oxide Spin-Valve with Multiferroic $BiFeO_3$ as Pinning Layer (X.D. QI)
27. The Magneo-optical Kerr Effect Measurement with Mini-Second Pulsed Magnetic Field (C.B. WU)
28. 2D Atomic Sheets: Novelty and Dynamics (I. MATSUDA)
29. Single-layer Dual Germanene Phases on Ag(111) (S.J. TANG)
30. High Performance of Patterned Sapphire Substrate Light-Emitting Diodes with Embedded Air Void by Textured Si_3N_4 Intermediate Layer (S.C. HSU)

POSTER SESSION

P1. Synthesis, Formation Mechanism and Electrochemical Properties of Spinel ZnV_2O_4 as Anode Material for Lithium Ion Storage (W.R. LIU)

P2. Facile Synthesis of Nano $BiVO_4$ as a New Anode Material for Secondary Sodium-Ion Batteries (R. MURUGANANTHAM)

P3. Mechanical Exfoliation of Graphite into Graphene Using Taylor-Couette Flow (D. SEO)

P4. A Screw Microreactor for High Temeprature Quantum Dot Synthesis and Catalytic 4-Nitrophenol Reduction (H. KIM)

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P5.Structural and Electronic Properties of Bi Honeycomb on Si(111)-α - $\sqrt{3} \times \sqrt{3}$-Au (H.L. CHOU)

P6.A New Family of Perovskite Catalysts for Oxygen-Evolution Reaction in Alkaline Media: $BaNiO_3$ and $BaNi_{0.83}O_{2.5}$ (J. HWANG)

P7.First Principles Computational Study on the Adsorption Mechanism of Organic Methyl Iodide Gas on Triethylenediamine Impregnated Activated Carbon (H. CHUN)

P8.First Principles Study on the Reaction Mechanisms of Hydrolysis Reaction of PCl_3 and $POCl_3$ (H.W. JUNG)

P9.First-principles Based Computational Study on Nucleation and Growth Mechanisms of U on Mo(110) Surface Solvated in an Eutectic LiCl-KCl Molten Salt. (C. KWON)

P10.Solid-Electrolyte Interphase in the Spinel Cathode Exposed to Carbonate Electrolyte in Li-Ion Battery Application: An ab-initio Study (D. CHOI)

P11.First-Principles Design of Graphene-Based Active Catalysts for Oxygen Reduction and Evolution Reactions in the Aprotic Li–O_2 Battery (J. KANG)

P12.Dissolving Time Control of Droplet-born Air Blowing (DAB) Based Microneedle (J. SHIN)

P13.Effective Exfoliation of High Quality Graphene Flakes from Ternary Graphite Intercalation Compound (J. KIM)

P14.Transfer-Free Growth of Graphene from Mobile Hot-Wire-Assisted CVD (J. BAEK)