8 December (Thu.)

**Opening**
9:00-9:10
Jun Akedo, Director of Advanced Coating Technology Research Center (ACTRC), AIST, Japan
Tetsuo Tsuchiya, Deputy Director of ACTRC, AIST, Japan

**Novel spray coatings I**
Session Chair: Jun Akedo (AIST)
9:10-9:35
(Invited) A Study of Suspension Plasma Spray of Thermal Barrier Coatings
Javad Mostaghimi, University of Toronto, Canada

9:35-10:00
(Invited) Influences on Coating Quality in Cold Spraying
Frank Gaertner, Helmut Schmidt University, Germany

10:00-10:25
(Invited) Influence of the Substrate Temperature and Thickness on the Quality of Cold Gas Sprayed Coating
Maria Villa Vidaller, Helmut Schmidt University, Germany

**Coffee Break (20min)**

**Novel spray coatings II**
Session Chair: Maria Villa Vidaller (HSU)
10:45-11:05
(Invited) Scratch-Resistant Transparent Sapphire Coating by Aerosol Deposition for Cover Glass Application of Smart Phone
Jae-Hyuk Park, IONES Co., Ltd., Korea

11:05-11:25
(Invited) Superconducting MgB₂ films prepared by the Aerosol Deposition Method
Stefan Denneler, Siemens AG, Germany

11:25-11:45
(Invited) Assessment of Magnetic Orientation of Barium Hexaferrite Films Formed by Aerosol Deposition
Scooter Johnson, Naval Research Laboratory, USA
<table>
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<tr>
<th>Time</th>
<th>Session/Topic</th>
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<tr>
<td>11:45-12:05</td>
<td>Hybrid aerosol deposition (HAD): a new spray regime between thermal spray and aerosol deposition Kentaro Shinoda, AIST, Japan</td>
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<td>12:05-14:00</td>
<td><strong>Lunch Break</strong></td>
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<td>12:30-14:00</td>
<td><strong>Poster Session</strong> (core time)</td>
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<td><strong>Application of computational materials engineering</strong></td>
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<td><strong>Session Chair: Masahiro Tosa (NIMS)</strong></td>
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<td>14:00-14:30</td>
<td><strong>(Invited) Multiscale materials modeling of coatings</strong></td>
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<td>Tomi Suohon, VTT Technical Research Centre of Finland, Finland</td>
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<td>14:30-14:55</td>
<td>Intelligent Manufacturing/Maintenance System Using Coating Technique Under Harsh Environment Shingo Hirose, AIST, Japan</td>
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<td>14:55-15:15</td>
<td>Mechanical Properties of Thermal Spray Cermet coatings</td>
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<td>Makoto Watanabe, NIMS, Japan</td>
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<td><strong>Coffee Break (15min)</strong></td>
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<td>15:30-15:55</td>
<td><strong>Tribology</strong></td>
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<td><strong>Session Chair: Makoto Watanabe (NIMS)</strong></td>
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<td>Masao Noma, SHINKO SEIKI CO., LTD., Japan</td>
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<td>15:55-16:20</td>
<td><strong>(Invited) Ceramic Coating and Duplex Treatment Technology</strong></td>
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<td>Atsuo Kawana, Japan Coating Center Co., Ltd., Japan</td>
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<td>16:20-16:40</td>
<td>Nanostripe Surface Structures: Fabrication of Micro- and Nano-sized Surface Texturing for Improving Tribological Properties Koji Miyake, AIST, Japan</td>
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<td>16:40-17:00</td>
<td><strong>ZnO Sputter Coating - Application to Ball Bering System and Development of Gas Turbine Generator</strong> Masahiro Tosa, NIMS, Japan</td>
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9 December (Fri.)

Functional film coatings I
Session Chair: Minoru Osada (NIMS)

8:30-9:05 (Keynote) Advanced Coatings for Win-Win Strategy
Tomosaburo Yano, Japan Fine Ceramics Association, Japan

9:05-9:40 (Keynote) Aerosol Deposition of PLZT-based Dielectric Films for Power Electronics in Electric Drive Vehicles
Balu Balachandran, Argonne National Laboratory, USA

9:40-10:05 (Invited) Tailoring of orientation distribution of highly transparent conductive n-type ZnO polycrystalline films for a variety of applications
Tetsuya Yamamoto, Kochi University of Technology, Japan

10:05-10:25 Nature of BaTiO₃ Nanocubes for Dielectric Anomaly in The 3D Architectures
Kazumi Kato, AIST, Japan

Coffee break (10min)

Functional film coatings II
Session Chair: Tetsuo Tsuchiya (AIST)

10:35-11:00 (Invited) Development of Magneto-optic Three-dimensional Display with Sputtered Magneto-photonic Crystal
Hiroyuki Takagi, Toyohashi University of Technology, Japan

11:00-11:25 (Invited) Chelate flame method, a new technology for rapid oxide film coatings
Hidetoshi Saitoh, Nagaoka University of Technology, Japan

11:25-11:50 (Invited) Photonic Processing of Metal Oxide-Graphene 3D Architectures
Shiva Adireddy, Tulane University, USA

11:50-12:10 Scalable Solution Assembly of 2D Nanosheets for Functional Ceramic Nanocoating
Minoru Osada, NIMS, Japan
12:10-12:30 Flexible Oxide Films Fabricated by Photo-Assisted Chemical Solution Deposition
Tomohiko Nakajima, AIST, Japan

12:30-13:30 Lunch Break

Coatings for infrastructure  
Session Chair: Seiji Kuroda (NIMS)

13:30-13:55 Coatings for Corrosion Protection
Tadashi Shinohara, NIMS, Japan

13:55-14:20 (Invited) Laser Cleaning System using a kW-Class Fiber Laser for Infrastructures including Decommissioning
Kazuhiro Fujita, The Graduate School for the Creation of New Photonics Industries, Japan

14:20-14:40 Long-term Marine Exposure Test of HVOF-sprayed 316L Stainless Steel and Hastelloy C-276 coatings
Seiji Kuroda, NIMS, Japan

Coatings for harsh environment I  
Session Chair: Hideyuki Murakami (NIMS)

14:40-15:15 (Keynote) Development of Environmental Barrier Coatings for All-Oxide CMC Gas Turbine Combustor Liners
Peter Mechnich, German Aeroresearch Center (DLR), Germany

15:15-15:35 Influence of Isothermal Heat Treatment on Properties of Y$_2$SiO$_5$-Y$_2$O$_3$ Environmental Barrier Coatings
Byung-Koog Jang, NIMS, Japan

15:35-15:55 Evaluation technique for interface fracture toughness of environmental barrier coating on ceramics matrix composites
Hideki Kakisawa, NIMS, Japan

Coffee break (15min)

Coatings for harsh environment II  
Session Chair: Hideyuki Murakami (NIMS)

16:10-16:45 (Keynote) Design and Development of a Self-Healing Thermal Barrier Coating for Prolonged Lifetime
Willem G. Sloof, TU Delft, Netherlands
16:45-17:10  *(Invited)* Development and application of the advanced TBC for high efficiency gas turbine
Taiji Torigoe, Mitsubishi Heavy Industry, Japan

17:10-17:30  Microstructural optimizations of suspension plasma sprayed yttria partially stabilized zirconia thermal barrier coatings for gas-turbine applications
Xiaolong Chen, NIMS, Japan

17:30-17:50  Determination of the fundamental mechanical properties of conventional and Pt- and Pt/Ir-modified NiAl diffusion coatings after thermocyclic exposure
Ceyhun Oskay, Dechema Research Institute, Germany

17:50-18:10  A critical driving force for the spallation of thermal barrier coatings: chemistry dependent phase transformation of the bond coat
Liberty Wu, NIMS, Japan

**Closing**

18:10-18:15  Hideyuki Murakami, NIMS, Japan
[Poster Presentation]

P01  Fine Ceramic Coatings by Novel Suspension Plasma Spray  
     Mohammed Shahien et al., AIST, Japan

P02  Microstructure and Properties of AlN Thermal Spray Coatings  
     Mohammed Shahien et al., Toyohashi University of Technology, Japan

P03  Evaluation of Ti-based alloys with TiAl overlay coatings  
     K. Miura et al., Shibaura Institute of Technology, Japan

P04  Fabrication of Gd(III)-DTPA-nanodiamond Particles by Chemical Modification for  
     Magnetic Resonance Imaging (MRI) Contrast Agents  
     Takako Nakamura et al., AIST, Japan

P05  Preparation of MOD -YBCO films with highly-uniform superconducting properties on  
     CeO$_2$ buffered LaAlO$_3$ substrates  
     Mitsugu Sohma et al., AIST, Japan

P06  Enhanced polarization properties for bismuth potassium titanate prepared by  
     utilizing AD method  
     Muneyasu Suzuki et al., AIST, Japan

P07  Development of flexible resistor thin film by using photo-reaction of hybrid solution (PRHS)  
     Yuko Uzawa et al., AIST, Japan

P08  M-I Transition Control of VO$_2$ Thin Film by Metal Doping and Excimer Laser assisted  
     Metal Organic deposition (ELAMOD)  
     Iwao Yamaguchi et al., AIST, Japan

P09  Evaluation of aluminized Ir and Ir alloys  
     M. Yamashita et al., Shibaura Institute of Technology, Japan

P10  Uniform and dense Al$_2$O$_3$ coating fabricated from fine particles  
     Takanori Saeki et al., AIST, Japan
P11  Surface Temperature Evolution Upon Crystallization of Tin Oxide Films in ELAMOD Process
Tsukasa Katsuki et al., Shibaura Institute of Technology, Japan

P12  Formation of Alumina Film on Plastic Substrates by Aerosol Deposition Method at Room Temperature
Masakazu Mori et al., Ryukoku University, Japan

P13  Influences of Plasma-Suspension Interaction on Axial Feeding SPS Process
Takuya Suzuki et al., Tsukuba University, Japan