

PROGRAM

[Oral Presentation]

12 December (Wed.)

Opening

- 10:00-10:10 Makoto Watanabe (NIMS)
- 10:10-10:45 (Keynote) Multifunctional Ceramic Coatings for Hostile Environments
Nitin P. Padture, Brown University, USA

Novel Coating Processes I

Session Chair: Kentaro Shinoda (AIST) & Masato Suzuki (AIST)

- 10:45-11:10 (Invited) Color and Durability Surface Coating for Mobile Device
by Aerosol Deposition Process
Jae-Hyuk Park, IONES Co., Ltd. Korea
- 11:10-11:35 (Invited) Plasma Corrosion Behaviour of Yttrium Oxide Coating prepared
by Aerosol Deposition Method
Hiroaki Ashizawa, TOTO Ltd., Japan
- 11:35-11:55 RTIC phenomenon for advanced ceramic coating
Jun Akedo, AIST, Japan
- 11:55-12:15 Recent trends in thermal spray processes for novel applications
Seiji Kuroda, NIMS, Japan

12:15-13:20 Lunch Break

13:20-14:50 **Poster Session**

Novel Coating Processes II

Session Chair: Jun Akedo (AIST) & Seiji Kuroda (NIMS)

- 14:50-15:15 (Invited) A Phenomenological Model for Predicting Film Thickness of Aerosol Deposited Films
Scooter D. Johnson, U.S. Naval Research Laboratory, USA
- 15:15-15:40 (Invited) Photon Associated Thermal Treatment for Aerosol-Deposited Piezoelectric Thick Films
Jungho Ryu, Yeungnam University, Korea
- 15:40-16:00 Deposition Mechanism of Hybrid Aerosol Deposition Process
Kentaro Shinoda, AIST, Japan
- 16:00-16:20 A feasibility study of warm spray as additive manufacturing and its non-destructive testing
Masahiro Kusano, NIMS, Japan
- 16:20-16:40 Fine Powder Plasma Spray for Controlled Coating Microstructure
Masato Suzuki, AIST, Japan

Coffee Break (15min)

AI and MI

Session Chair: Masahiro Kusano (NIMS)

- 16:55-17:20 (Invited) Data-driven research for odor component analysis and de novo molecule generation
Ryo Tamura, NIMS, Japan
- 17:20-17:40 Coating Process Informatics and IT-tools Based on Digitalized Human Skills and Knowledges
Shingo Hirose, AIST, Japan
- 17:40-18:00 Development of Materials Integration System for Structural Materials
Makoto Watanabe, NIMS, Japan
- 18:30-20:30 Banquet

13 December (Thu.)

9:00-9:35 (Keynote) Global Crisis/Sustainability Technologies
– In Actuator/Piezoelectric Devices –
Kenji Uchino, The Penn State University, USA

9:35-10:10 (Keynote) Development of environmental barrier coatings for SiC/SiC and
Ox/Ox composites by thermal spray techniques
Robert Vaßen, Forschungszentrum Jülich GmbH, Germany

TBC, EBC, Protective Coating

Session Chair: Hideyuki Murakami (NIMS) & Makoto Watanabe (NIMS)

10:10-10:35 (Invited) Industrial application and evaluation of slurry aluminide coatings
Xabier Montero, DECHEMA-Forschungsinstitut, Germany

10:35-10:55 Interfacial fracture toughness of EBC after heat exposure
Hideki Kakisawa, NIMS, Japan

10:55-11:15 Microstructure and oxidation properties of Pt-Ir based diffusion
coatings on Ni-based single crystal superalloys
Hideyuki Murakami, NIMS, Japan

Coffee Break (10min)

Tribology

Session Chair: Masahiro Tosa (NIMS) & Takako Nakamura (AIST)

11:25-11:50 (Invited) DLC based tribological and sensory coatings for components and
tools
Tim Abraham, Fraunhofer IST, Germany

11:50-12:10 Development of Functionalized Carbon Materials by Chemical
Modification for Surface Properties Control
Takako Nakamura, AIST, Japan

12:10-12:35 (Invited) Preparation of carbon based materials
-Diamond, DLC, and carbon-nitride-
Yukihiro Sakamoto, Chiba Institute of Technology, Japan

- 12:35-12:55 Advanced Zinc Oxide Tribo-coatings and Industrial Application
Masahiro Tosa, NIMS, Japan
- 12:55-13:55 Lunch Break
- 13:55-14:30 (Keynote) Fabrication Of Nanostructured Transition Metal Oxide Thin
Films
Douglas B. Chrisey, Tulane University, USA

Electronic and Functional Coating

Session Chair: Tetsuo Tsuchiya (AIST) & Minoru Osada (Nagoya Univ.)

- 14:30-14:55 (Invited) Aerosol Deposition of Ceramic Dielectric Films
U. (Balu) Balachandran, Argonne National Laboratory, USA
- 14:55-15:20 (Invited) Market Overview and Unsolved Issues on Light-Emitting Display
Technologies
Tadahiko Hirai, CSIRO, Australia
- 15:20-15:45 (Invited) Transparent Conducting Electrodes Based on Ultralow-Loss
Metal Films for Flexible Optoelectronic Applications
Jungheum Yun, Korea Institute of Materials Science, Korea
- 15:45-16:05 Solution-Based Deposition of 2D Nanosheets for Ceramic Nanocoating
Minoru Osada, Nagoya University/NIMS, Japan
- Coffee Break (10min)
- 16:15-16:40 (Invited) Reactive Plasma Deposition with Dc-Arc Discharge for Tailoring
Structural, Electrical and Optical Properties of Oxide Films
Tetsuya Yamamoto, Kochi University of Technology, Japan
- 16:40-17:05 (Invited) Transfer the CuCrO₂ thin films on flexible substrate via BN layer
Te-Wei Chiu, National Taipei University of Technology, Taiwan

17:05-17:30 (Invited) Highly Bismuth-Substituted Rare-Earth Iron Garnet Films
Prepared by Metal-Organic Decomposition Method
Takayuki Ishibashi, Nagaoka University of Technology, Japan

17:30-17:50 Development of Advanced Oxide Thin Film by Using Excimer Laser
Assisted Metal Organic Deposition (ELAMOD)
Tetsuo Tsuchiya, AIST, Japan

Closing

17:50-18:00 Masato Suzuki (AIST)

[Poster Presentation]

- P01** Influence of the Powder Crystallite Size on the Successful Film Formation Using Room Temperature Aerosol Deposition
Jörg Exner, *et al.*, University of Bayreuth, Germany
- P02** Microstructure and Oxidation Properties of Co-W Electroplated Ferritic Stainless Steel for SOFC application
Lu GAN, *et al.*, NIMS, Japan
- P03** Study of curvature and stress generated on different types of flexible substrates by Aerosol Deposition of alumina thin film
Gabrielle Saya BORDELET, *et al.*, AIST, Japan
- P04** Influence of Microstructure on Hot Corrosion Behavior of Lanthanum Hexaaluminate Sprayed Coating
Shuto Tsukada, *et al.*, Shibaura Institute of Technology, Japan
- P05** Combinatorial tribology technique for screening of novel low frictional coatings
Masahiro Goto, *et al.*, NIMS, Japan
- P06** Glass Based Lubricants for High Temperature Alloy Forgings
Akira Kasahara, *et al.*, NIMS, Japan
- P07** Development of Insulating Layer for Steel Heater Devices by Aerosol Deposition Method
Rintaro Aoyagi, *et al.*, AIST, Japan
- P08** Image segmentation and analysis for Ti-6Al-4V microstructure fabricated by selective laser melting
Shiho Miyazaki, *et al.*, Shibaura Institute of Technology, Japan
- P09** Theoretical Analysis of the Influence of Grain Boundaries on Phase Transformation of Binary Ti Alloys
Takuto Yamamoto, *et al.*, Shibaura Institute of Technology, Japan