# *Poster Session*

**Thursday, September 7, 2006, 17:20-18:50**

**Venue: Hotel Nikko Kurashiki**

**Session A: Joining Technology for New Metallic Glasses and Inorganic Materials**

**PA-1 Formation of Fe-base Metal Glass Coating by Smart Plasma Spraying Process**
A. Kobayashi*, S.Yano*, H. Kimura**, A. Inoue**
*Joining and Welding Research Institute, Osaka University, Japan
**Institute for Materials Research, Tohoku University, Japan

**PA-2 Fabrication of Colloidal Photonic Crystals of Submicron-Sized Spheres**
D. Nagao, M. Hirose, Y. Kobayashi, M. Konno
Graduate School of Engineering, Tohoku University, Japan

**PA-3 Characterization of $Al_2O_3$ Particulate Reinforced $Zr_{55}Cu_{30}Al_{10}Ni_5$ Metallic Glass Matrix Composite Fabricated by Spark Plasma Sintering Process**
G. Xie, D. V. Louzguine-Luzgin, H. Kimura, and A. Inoue
Institute for Materials Research, Tohoku University, Japan

**PA-4 Fabrication and Characterization of Porous $Zr_{55}Cu_{30}Al_{10}Ni_5$ Bulk Metallic Glass By Spark Plasma Sintering Process**
G. Xie, W. Zhang, Q. Zhang, D. V. Louzguine-Luzgin, H. Kimura, and A. Inoue
Institute for Materials Research, Tohoku University, Japan

**PA-5 Mechanical Properties of Friction Stir Welded Ti Joint**
H. Fujii, H. Kato, K. Nakata and K. Nogi
Joining and Welding Research Institute, Osaka University, Japan

**PA-6 Silica-Coating of Barium Titanate Particles**
H. Matsumoto, D. Nagao, Y. Kobayashi and M. Konno
Graduate School of Engineering, Tohoku University, Japan

**PA-7 Effect of Rotation Speed of Probe on Stir Zone Properties for Adjustable Friction Stir Welding**
H. Fujii, H. Kato, T. Tsumura, K. Nakata and K. Nogi
Joining and Welding Research Institute, Osaka University, Japan

**PA-8 Dissolution of Hydrogen into Tungsten Phosphate Glasses through Palladium Coating**
H. Tawarayama*, H. Kawazoe*, S. Sugata**, F. Utsuno**, H. Inoue** and H. Hosono***
*Kawazoe Frontier Technologies Corporation, Japan
**Institute of Industrial Science, The University of Tokyo, Japan
***Materials and Structures Laboratory, Tokyo Institute of Technology, Japan

**PA-9 Fumed Alumina/SiC Porous Composite for Efficient Thermal Insulation at High Temperature**
H. Abe, I. Abe, M. Naito
Joining and Welding Research Institute, Osaka University, Japan

**PA-10** **Wear Property of Metallic Glass Sprayed Coatings by HVOF on Lightweight Metal Substrate**

H.-G. Kim*, K. Nakata*, T. Tsumura*, M. Sugiyama**, T. Igarashi**, M. Fukumoto***, H. Kimura**** and A. Inoue****
*Joining and Welding Research Institute, Osaka University, Japan
**TOPY Industries, Limited, Japan
***Toyohashi University of Technology, Japan
****Institute for Materials Research Tohoku University, Japan

**PA-11** **Structures of Metallic Glass Films by Sputtering Method with $Zr_{55}Al_{10}Ni_5Cu_{30}$ Targets**

K. Kawabata*, T. Serikawa*, K. Kondoh*, H. Kimura** and A. Inoue**
*Joining and Welding Research Institute, Osaka University, Japan
**Institute for Materials Research, Tohoku University, Japan

**PA-12** **Photoelectron Spectroscopic Study of Energy Level Alignment at C12A7:e- / Alq3 Interfaces**

K.-B. Kim*, M. Kikuchi*, M. Miyakawa**, H. Yanagi*, T. Kamiya*,**, M. Hirano**, H. Hosono*, **,***
*Materials and Structures Laboratory, Tokyo Institute of Technology, Japan
**ERATO-SORST, Japan Science and Technology Agency, Japan
***Frontier Collaborative Reserach Center, Tokyo Institute of Technology, Japan

**PA-13** **Effect of the Carbon Content on The Mechanical Properties and Microstructures of FSW Carbon Steel Joints**

L. Cui*, H. Fujii*, N. Tsuji**, K. Nogi*, R. Ikeda*** and M. Matsushita***
*Joining and Welding Research Institute, Osaka University, Japan
**Department of Adaptive Machine Systems, Osaka University, Japan
***Steel Research Laboratory, JFE Steel Corporation, Japan

**PA-14** **Effect of D.C. Voltage Application on Interface Between Liquid State Metals and Glass**

M. Takahashi and K. Ikeuchi
Joining and Welding Research Institute, Osaka University, Japan

**PA-15** **Development of Nanoceramics: Application to Diffusion Bonding**

M. Yoshida, Y. Shinoda, T. Akatsu and F. Wakai
Materials and Structures Laboratory, Tokyo Institute of Technology, Japan

**PA-16** **Influences of Friction Stir Welding Parameters on Microstructure and Mechanical Properties of AA2024-$T_3$ Aluminum Alloy**

S. A. Khodir, T. Shibayanagi and M. Naka
Joining and Welding Research Institute, Osaka University, Japan

**PA-17** **Effects of Processing Temperature on Bonding Behavior of Hydroxyapatite Ceramics and Titanium by Hydrothermal Hot-pressing Method**

T. Onoki*, T. Hashida**, Y. Tanabe*,***, E. Yasuda*
*Materials and Structures Laboratory, Tokyo Institute of Technology, Japan
**Fracture and Reliability Research Institute, Tohoku University, Japan
***Chemical Engineering, Graduate School, Nagoya University, Japan

**PA-18** **Orientation Distribution in Friction Stir Processed A6061 Aluminum Alloy**

T. Matsumoto and T. Shibayanagi
Joining and Welding Research Institute, Osaka University, Japan

**PA-19 Weldability and Mechanical Property of $Ni_{53}Nb_{20}Ti_{10}Zr_8Co_6Cu_3$ Metallic Glass Foil by Laser Welding**

T. Tsumura* ,K. Kobayashi**, N. Yoneyama***,T. Murakami****,
H. Kimura*****, A. Inoue*****, and K. Nakata*
*Joining and Welding Research Institute, Osaka University, Japan
** Graduate Student, Graduate School of Engineering, Osaka University, Japan
*** Research Laboratory, Ishikawajima-Harima Heavy Industries, Co., Ltd, Japan
****Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan
***** Institute for Materials Research, Tohoku University, Japan

**PA-20 Hydrothermal Synthesis of Hydroxyapatite and Hydroxyapatite/$TiO_2$ Nanocrystals**

T. Watanabe, P. Sujaridworakun, D. Pongkao, and M. Yoshimura
Materials and Structures Laboratory, Tokyo Institute of Technology, Japan

**PA-21 $CaTiO_3$ Film Formation on Ti and Ti-Alloy by Electrochemical Process for Hydroxyapatite Deposition**

T. Watanabe*, N. Sugiyama*, N. Matsushita*, X. Wang**, A.Inoue**, M. Tsukamoto***, N. Abe***, Y. Komizo***, T. Onoki*, Y. Tanabe*, and M. Yoshimura*
*Materials and Structures Laboratory, Tokyo Institute of Technology, Japan
**Institute of Materials Research, Tohoku University, Japan
***Joining and Welding Research Institute, Osaka University, Japan

**PA-22 Magnetic Domain Structures of Ferromagnetic Fe Dots at Fe/$BaTiO_3$ Interfaces**

T. Taniyama*, D. Fu*,**, M. Itoh*, T. Takashima***, and B. Prijamboedi***
*Materials and Structures Laboratory, Tokyo Institute of Technology, Japan
**Exploratory Research for Advanced Technology, Japan Science and Technology Agency, Japan
***National Institute of Advanced Industrial Science and Technology, Japan

**PA-23 Glass Transition Phenomena and Heat Capacity of $Zr_{0.55}Al_{0.10}Ni_{0.05}Cu_{0.30}$**

T. Atake*, Y. Moriya*, H. Kawaji*, M. Fukuhara**, H. Kimura**, and A. Inoue**
*Materials and Structures Laboratory, Tokyo Institute of Technology, Japan
**Institute for Materials Research, Tohoku University, Japan

**PA-24 Joining Process of Micro Flash Butt Welding**

T. Kuroda, K. Ikeuchi and M. Shimada
Joining and Welding Research Institute, Osaka University, Japan

**PA-25 Development of Fiber Laser Aided Spot Heating System and Its Application to Control of Microstructure in Pure Aluminum**

T. Shibayanagi, M. Tsukamoto, N. Matsuda, Y. Soga and N. Abe
Joining and Welding Research Institute, Osaka University, Japan

**PA-26 Preparation of MTES Hybrid Bioactive Coating on Metal Surfaces by Sol-Gel Method**

Y. Hoshikawa*, E. Yasuda*, T. Onoki*, M. Akao** and Y. Tanabe*,***
*Materials and Structures Laboratory, Tokyo Institute of Technology, Japan
**Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Japan
***Chemical Engineering, Graduate School, Nagoya University, Japan

**PA-27** **Design of Biodegradable Materials for Preparation of Protein-Containing Prolonged- release Microcapsules**

Y. Fukumori*, S. Masui*, H. Ichikawa*, K. Sato**, H. Abe**, M. Naito**, M. Yoshimura***

*Faculty of Pharmaceutical Sciences and Cooperative Research Center of Life Science, Kobe Gakuin University, Japan

**Joining and Welding Research Institute, Osaka University, Japan

***Materials and Structures Laboratory, Tokyo Institute of Technology, Japan

**PA-28** **Direct Coating of Magnetite Nanoparticles with Silica by a Seeded Polymerization Technique and Immobilization of Proteins on the Silica-Coated Particles**

Y. Kobayashi*, M. Yoshida*, D. Nagao*, Y. Ando**, T. Miyazaki** and M. Konno*

*Department of Chemical Engineering, Graduate School of Engineering, Tohoku University, Japan

**Department of Applied Physics, Graduate School of Engineering, Tohoku University, Japan

**Session B: Nano-particles and Powders**

**PB-1** **Joining of Ceramic Components in The Green State**

C. Paulick, G. Steinborn and R. Waesche

Federal Institute for Materials Research and Testing (BAM), Germany

**PB-2** **Morphology of Silver Nanoparticles Prepared by Chemical Reduction Method**

K. J. Park*, D. S. Seo** and J. K. Lee*

*Department of Advanced Materials Engineering, Chosun University, Korea

**School of Materials Science and Engineering, Seoul National University, Korea

**PB-3** **Interaction Between Dispersant and Ethyl Cellulose Binder at Solid－Liquid Interface**

S. Lee, J.-A. Choi, and U. Paik

Division of Advanced Materials Science Engineering, Hanyang University, Korea

**PB-4** **Anisotropic Sintering Shrinkage and Grain Growth for Spherical Alumina Powder Compacts Aligned in High Magnetic Field**

A. Shui*, L. Zeng*, Y. Liu*, A. Makiya**, K. Uematsu**

*Materials College, South China University of Technology, China

**Department of Chemistry, Nagaoka University of Technology, Japan

**PB-5** **Preparation of Titania Nanopowder with Industrial Titaniferous Solution**

Y. Liu, A. Shui, L. Zeng, P. Liu, H. Wang, X. Cheng and W. Sheng

College of Materials Science and Engineering, South China University of Technology, China

**PB-6** **Electrodeposition of Alumina Precursor on Silicon Carbide Surface**

M. Murao*, T. Maeda*, N. Matsunaga**, S. Sameshima* and Y. Hirata*

*Department of Advanced Nanostructured Materials Science and Technology, Kagoshima University, Japan

**Department of Applied Chemistry and Chemical Engineering, Kagoshima University, Japan

**PB-7** **Effect of Mo Surface Conditions on the Fabrication of Mo-$SiO_2$ Functionally Graded Materials via Slipcasting**

A. Umemoto*, K. Hayashi*, N. Saito**, K. Nakashima**,
K. Kaneko** and K. Ogi**
*TOTO Ltd., Advanced Ceramic Division, Japan
**Department of Materials Science and Engineering, Graduate School of Engineering, Kyushu University, Japan

**PB-8** **Preparation of Controlled Release Microparticles by A Dry Powder Processing**

Y. Fukumori*, R. Yoshikawa*, T. Uemura*, H. Ichikawa*, K. Sato**, H. Abe**, M. Naito**
*Faculty of Pharmaceutical Sciences and Cooperative Research Center for Life Science, Kobe Gakuin University, Japan
**Joining and Welding Research Institute, Osaka University, Japan

**PB-9** **Nanoscale Control of $La_{0.8}Sr_{0.2}MnO_3$ Cathode for Intermediate Temperature Solid Oxide Fuel Cell**

K. Sato*, J. Chaichanawong**, A. Kondo*, H. Abe* and M. Naito*
*Joining and Welding Research Institute, Osaka University, Japan
**Department of Chemical Engineering, Chulalongkorn University, Thailand

**PB-10** **Fabrication Thick Ni-YSZ Composite Porous Layer for Electrode Supporting SOFC**

M. Uemura, K. Sato, H. Abe and M. Naito
Joining and Welding Research Institute, Osaka University, Japan

**PB-11** **Hydrothemal Synthesis of Nanostructured Thermoelectric $Bi_2Te_3$ Powder**

H. Kaga, Y. Kinemuchi, and K. Watari
National Institute of Advanced Industrial Science and Technology, Japan

**PB-12** **Effect of Ball Milling for Fabrication of $BaTiO_3$ Powders during Hydrothermal Reaction**

K. Tsunekawa, Y. Hotta, K. Sato, and K. Watari
National Institute of Advanced Industrial Science and Technology, Japan

**PB-13** **Synthesis and Sintering of $BaTiO_3$ Powders Prepared from Hydrothermal Process with Ball Milling**

Y. Hotta, K. Tsunekawa, K. Sato, T. Nagaoka and K. Watari
National Institute of Advanced Industrial Science and Technology, Japan

**PB-14** **Characterization of Submicron Particles Using Compression Test**

H. Ogiso, M. Yoshida, and J. Akedo
National Institute of Advanced Industrial Science and Technology, Japan

**PB-15** **Influence of Nanoporous Structure on Silane Coupling Surface Modification Behavior and Adhesion Properties of Spherical Silica Particles**

T. Kani*,**, M. Tamonoki*, T. Suzuki**, M. Tsukada*, H. Kamiya*
*Institute of Symbiotic Science and Technology, Tokyo University of Agriculture and Technology, Japan
**Nihon L'Oreal K. K., Japan

**PB-16** **Effect of Magnetic Field on Orientation of Diamagnetic Ceramic Particles Dispersed in Slurry**

S. Tanaka, A. Makiya and K. Uematsu
Department of Material Science and Technology, Nagaoka University of Technology, Japan

**PB-18** **Microstructure and Mechanical Properties of Textured Alumina Prepared Using a Strong Magnetic Field**

T. S. Suzuki, T. Uchikoshi, K. Morita, K. Hiraga and Y. Sakka
Nano Ceramics Center, National Institute for Materials Science, Japan

**PB-20** **Micro-Patterning of Tin Oxide by Micro-Molding in Capillaries Method and Application as Gas Sensors**

J. Imasu, H. Fudouzi and Y. Sakka
National Institute for Materials Science, Japan

**PB-21** **Gelcasting Formulation of Alumina Slurry Offering Multiple Advantages**

R. L. Menchavez, H. Takegami, M. Fuji, and M. Takahashi
Ceramics Research Laboratory, Nagoya Institute of Technology, Japan

**PB-22** **Effect of Surfactants on The Formation of Hollow $CaCO_3$ Particle by Bubble Template Method**

Y. S. Han, L. Lin, H. Takegami, M. Fuji and M. Takahashi
Ceramics Research Laboratory, Nagoya Institute of Technology, Japan

**PB-23** **A Facile Method to Synthesize ZnO Particles by Involving Ammonia Bubbles**

L. Lin, Y.S. Han, H. Takegami, M. Fuji and M. Takahashi
Ceramics Research Laboratory, Nagoya Institute of Technology, Japan

**PB-24** **Analysis of Sintering Behavior of $SiO_2$ Glass Green Bodies by Master Sintering Curve Theory for Viscous Flow**

D. Hiratsuka, J. Tatami, T. Wakihara, K. Komeya and T. Meguro
Graduate School of Environment and Information Sciences, Yokohama National University, Japan

**PB-25** **Synthesis of α- and β-SiAlON Composite Ceramics Using β-SiAlON Powder**

K. Asakoshi*, J. Tatami*, T. Wakihara*, K. Komeya*, T. Meguro* and M. Yokouchi**
*Graduate School of Environment and Information Sciences, Yokohama National University, Japan
**Kanagawa Industrial Technology Center, Japan

**PB-26** **Sintering Shrinkage Behavior of $HfO_2$-Added $Si_3N_4$ Ceramics**
D. Horikawa, J. Tatami, T. Wakihara, K. Komeya and T. Meguro
Graduate School of Environment and Information Sciences, Yokohama National University, Japan

**PB-27** **In-Situ Measurement of Sintering Behavior of Porous Silicon Carbide Ceramics**
N. Matsuzawa, R. Kobayashi, J. Tatami, T. Wakihara, K. Komeya and T. Meguro
Graduate School of Environment and Information Sciences, Yokohama National University, Japan

**PB-28** **Novel Rapid Drying Technique for Slip Cast Body**
T. Shirai, M. Yasuoka, Y. Kinemuchi, Y. Hotta,
and K. Watari
National Institute of Advanced Industrial Science and Technology, Japan

**PB-29** **Investigations on the Interactions between Alumina Surfaces in Polyacrylic Acid Solutions Containing Magnesium Ions by Atomic Force Microscopy**
J. Sun*, L. Bergstrom**, L. Gao*
*The State Key Lab on High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China
**Department of Physical, Inorganic and Structural Chemistry, Arrhenius Laboratory, Sweden

**PB-30** **Sintering Behavior and Microstructure of $CeO_2$ added ZnO Ceramics**
S. Tasaki, J. Tatami, T. Wakihara, K. Komeya and T. Meguro
Graduate School of Environment and Information Sciences, Yokohama National University, Japan

**PB-31** **Synthesis of α-$Si_3N_4$ Powder by Carbothermal Reduction Nitridation of Carbon-Coated $SiO_2$ Particle**
Y. Yoshida, T. Wakihara, J. Tatami, K. Komeya and T. Meguro
Graduate School of Environment and Information Sciences, Yokohama National University, Japan

**PB-32** **Birefringence Imaging Reveals Orientation and Packing of Particles in Pre-Sintered Bodies**
G. C. Wei
OSRAM SYLVANIA Inc., USA

**Session C: Interface Characterization and Control**

**PC-1** **Microstructure and Mechanical Properties of Capacitor Discharge Joined Nitride Based Materials with Ti and Al Foils as An Interlayer**
O.Tunckan*, S.Turan** and D.Turan*
*School of Civil Aviation, Anadolu University, Turkey
**Department of Materials Science and Engineering, Anadolu University, Turkey

**PC-2** **Modification of Metal Surface with a Diamond－like Carbon Coating**
B. G. Marta, R. Janina, W. Małgorzata
Foundry Research Institute, Poland

**PC-3** **Effect of Poly(Acrylic Acid) on The Adhesion Strength and Electrochemical Performance of a Graphite Anode for Lithium Ion Battery**

J.-H. Lee*, U. Paik*, V. A. Hackley** and Y.-M. Choi***
*Division of Advanced Materials Science Engineering, Hanyang University, Korea
**Ceramics Division, Materials Science and Engineering Laboratory, National Institute of Standards and Technology, USA
***Materials LAB, Samsung Advanced Institute of Technology, Korea

**PC-4** **Microwave Processing of Intermediate Temperature Solid Oxide Fuel Cells: Firing of Electrode Materials onto Electrolyte**

M. Matsuda, A.Tada and M. Miyake
Graduate School of Environmental Science, Okayama university, Japan

**PC-5** **Surface Roughness Modification by Polymethylsilsesquioxane and Silicon Oxycarbide Coating Film**

M. Fukushima, S. Nakano and H. Kita
National Institute of Advanced Industrial Science and Technology, Japan

**PC-6** **Probing the Surface Forces with Scanning Probe Microscopy (SPM)**

S. Kimiyasu*, H. Yuji*, W. Koji* and Y. Huseyin**
*Advanced Manufacturing Research Institute, National Institute of Advanced Industrial Science and Technology, Japan
**Materials Science and Engineering Department Gebze Institute of Technology, Turkey

**PC-7** **Preparation of $Li_{1+n}V_3O_8$/β-$Li_{1/3}V_2O_5$/C Nanocomposites for Li Battery Applications**

M. Dubarry, J. Gaubicher, P. Moreau and D. Guyomard
Institut des Matériaux Jean Rouxel, France

**PC-8** **Preparation of New Nanostructured Manganese Dioxides for Energy Storage**

E. Machefaux, J.F. Martin, J.L. Duvail, G. Ouvrard and D. Guyomard
Institut des Matériaux Jean Rouxel, France

**Session D: Energy and Environment**

**PD-1** **Study of Alum-Ceramic Energy Storage Material**

X. Ren, A. Shui, L. Zeng and Y. Liu
College of Materials Science and Engineering, South China University of Technology, China

**PD-2** **Development of Filtration Technology for PM2.5 in Diesel Exhaust**

M. Yoshikawa*, T. Uemura*, D. Kan*, T. Fukui*, T. Charinpanitkul**, W. Tanthapanichakoon**, M. Naito***
*Hosokawa Powder Technology Research Institute, Japan
**Chulalongkorn University, Thailand
***Joining and Welding Research Institute, Osaka University, Japan

**Session E: Smart Processing Technology**

**PE-1** **Effects of Oxygen Partial Pressure Control on The Microstructure and Electrical Properties of Holmium Doped Barium Titanate**
S. K. Jo, J. S. Kim, H. S. Kwoun and Y. H. Han
Department of Materials Engineering, Sungkyunkwan University, Korea

**PE-2** **Mechanism of Bonding Between Plasma Sprayed Ti-Al Coating and $Al_2O_3$ Coating**
S. Adachi* and K. Nakata**
*Technology Research Institute of Osaka Prefecture, Japan
**Joining and Welding Research Institute, Osaka University, Japan

**PE-3** **Mechanochemical Synthesis of Barium Titanate with No Media Balls**
A. Kondo*, H. Shimoda**, K. Sato*, H. Abe* and M. Naito*
*Joining and Welding Research Institute, Osaka University, Japan
**Institute of Nanotechnology and Material Science, Kurimoto, Ltd., Japan

**PE-4** **The Effect of Beam Size in Heat Conduction Welding of Thin Films with Direct Diode Laser**
N. Abe*, N. Nakamura*, Y. Funada**, and M. Tsukamoto*
*Joining and Welding Research Institute, Osaka University, Japan
**Industrial Research Institute of Ishikawa, Japan

**PE-5** **Hydroxyapatite Coating on Plastic Plate with an Aerosol Beam**
M. Tsukamoto*, T. Yamashita** , T. Shibayanagi*,
H. Nakano** and N. Abe*
*Joining and Welding Research Institute, Osaka University, Japan
**Kinki University, Japan

**PE-6** **Large Area Alumina Films Formed by Aerosol Deposition**
A. Iwata and J. Akedo
National Institute of Advanced Industrial Science and Technology, Japan

**PE-7** **Formation of Metal–dielectric Nanocomposite Films by Aerosol Deposition Method**
J.-H. Park and J. Akedo
National Institute of Advanced Industrial Science and Technology, Japan

**PE-8** **Room-temperature Deposited Tunable Ceramic Films by Aerosol Deposition Method**
S.-W. Oh, J.-H. Park and J. Akedo
National Institute of Advanced Industrial Science and Technology, Japan

**PE-9** **Influence of Gas Flow Rate on Microstructure and Mechanical Properties of Hydroxyapatite Coatings Fabricated by Gas Tunnel Type Plasma Spraying**
M. F. Morks and A. Kobayashi
Joining and Welding Research Institute, Osaka University, Japan

**PE-10** **Measuremetns of Cathode Surface Temperature of Plasma Torch**
S. Tashiro, H. Nishikawa and M. Tanaka
Joining and Welding Research Institute, Osaka University, Japan

**PE-11** **Topology Analysis and Depressing Approach of ε-$Cu_3Sn$ Phase at Solder/Cu Interface**

F. Gao, H. Nishikawa, T. Takemoto
Joining and Welding Research Institute, Osaka University, Japan

**PE-12** **Development on Freeform Fabrication Method of Alloys by 3D Micro Welding**

T. Horii, S. Kirihara and Y. Miyamoto
Joining and Welding Research Institute, Osaka University, Japan

**PE-13** **Morphology Control of Aluminium Nitride Particles in Combustion Synthesis Process**

M. Radwan, T. Sakurai and Y. Miyamoto
Joining and Welding Research Institute, Osaka University, Japan

**PE-14** **Freeform Fabrication of Photonic Crystals with 3-Dimensional Diamond Structure by Micro-Stereolithography**

W. Chen, S. Kirihara, and Y. Miyamoto
Joining and Welding Research Institute, Osaka University, Japan

**PE-15** **Properties of Inductivety-Coupled RF Plasmas Sustained with Internal Antenna for Deposition of Carbon-Related Films**

K. Takenaka*, Y. Setsuhara*, K. Nishisaka** and A. Ebe**
*Joining and Welding Research Institute, Osaka University, Japan
**EMD Co., Japan

**Session F: Materials Design**

**PF-1** **Characterization of Intergranular Phases in Multi Cation Doped Sialon Based Materials**

H. Yurdakul and S. Turan
Department of Materials Science and Engineering, Anadolu University,Turkey

**PF-2** **Mechanical Properties of TiAlN/CrN Multilayer, TiAlN and CrN by R.F Magnetron Sputtering**

D. H. Song*, W. Y. Jang** and J. K. Lee*
*Department of Advanced Materials Engineering, Chosun University, Korea
**Department of Advanced Metallurgy and Materials Engineering, Chosun University, Korea

**PF-3** **Quantive Analysis of Oxidation-Reduction Behavior of Mn-Doped $BaTiO_3$**

D. W. Hahn and Y. H. Han
Department of Materials Engineering, Sungkyunkwan University, Korea

**PF-4** **Plasma Thermal Deposition of Alminum on Mg-Li Work Hardened Alloy**

M. Tsujikawa*, S. Adachi**, S. Oki***, K. Nakata**** and M. Kamita*****
*Osaka Prefecture University,Japan
**Technical Research Institute of Osaka Prefecture, Japan
***Joining and Welding Research Institute, Osaka University, Japan
****Kinki University, Japan
*****Yamani Co. Ltd., Japan

**PF-5** **Fatigue Strength of Welded Steel Rib-Plate with Laser Shock Peening**

Y. Sakino*, Y.-C. Kim* and Y. Sano**
*Joining and Welding Research Institute, Osaka University, Japan
**Power and Industrial Systems Research and Development Center, Toshiba Co., Japan

**PF-6** **Behavior of Superficial Oxide at Diffusion-Bonded Interface of Tin and its Influence on Bond Strength**

S. Koyama*, M. Takahashi**, and K. Ikeuchi**
*Graduate student of Osaka University(now at Research Institute for Applied Science), Japan
**Joining and Welding Research Institute, Osaka University, Japan

**PF-7** **Fablication of Homogeneous AlN-SiC Solid Solutions by Heat-Treatment of Dense AlN-SiC Composites**

R. Kobayashi*, J. Tatami*, T. Wakihara*, K. Komeya*, T. Meguro*, R. Tu** and T. Goto**
*Graduate School of Environment and Information Sciences, Yokohama National University, Japan
**Institute for Metal Research, Tohoku University, Japan

**PF-8** **The Effects of Functional Groups of Acrylic Resin on The Damping Property of Ceramic Composites**

T. Shimazu*,**, N. Isu*, M. Miura*, and E. H. Ishida**
*General Research Institute of Technology, INAX Co., Japan
**Graduate School of Environmental Studies, Tohoku University, Japan

**PF-9** **Fabrication and Characterization of Ceramics NANO-Composites from Eutectic Melts in $Al_2O_3$-$R_2O_3$-$HfO_2$ ($ZrO_2$) and $Al_2O_3$-$R_2O_3$-CaO Systems**

M. Yoshimurua, N. Sakamoto, S. Araki, T. Watanabe, A. Sugiyama and N. Matsushita
Tokyo Institute of Technology, Japan