JSPM International Conference
on Powder and Powder Metallurgy
～ 60th Anniversary ～
(JSPMIC2017)

DATE : November 6 (Mon)~ November 9 (Thu), 2017
VENUE : Kyoto University, Clock Tower Centennial Hall, Kyoto, Japan

The Organizing Committee of JSPMIC2017
JSPM International Conference on Powder and Powder Metallurgy ~ 60th Anniversary ~ (JSPMIC2017)

Conference Schedule

| November 6 (Mon) | Registration Desk OPEN | 6 Nov. (Mon) 15:00~17:00 (2F Foyer) |
| November 7 (Tue) | Get Together (2F, International Conference Hall II) | 9 Nov. (Thu) 9:00~11:30 (2F Foyer) |

### November 7 (Tue)

<table>
<thead>
<tr>
<th>Time</th>
<th>Room A</th>
<th>Room B</th>
<th>Room C</th>
<th>Room D</th>
<th>Room E</th>
<th>Room F</th>
</tr>
</thead>
<tbody>
<tr>
<td>19:00~20:00</td>
<td>Poster Coretime (2F, International Conference Hall III)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### November 8 (Wed)

<table>
<thead>
<tr>
<th>Time</th>
<th>Room A</th>
<th>Room B</th>
<th>Room C</th>
<th>Room D</th>
<th>Room E</th>
<th>Room F</th>
</tr>
</thead>
<tbody>
<tr>
<td>17:00~17:30</td>
<td>JSPM 60th Anniversary Ceremony (1F, Centennial Hall)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19:00~21:00</td>
<td>Conference Party (SODOH HIGASHIYAMA KYOTO)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### November 9 (Thu)

<table>
<thead>
<tr>
<th>Time</th>
<th>Room A</th>
<th>Room B</th>
<th>Room C</th>
<th>Room D</th>
<th>Room E</th>
<th>Room F</th>
</tr>
</thead>
</table>
Program

Tue. Nov. 7, 2017
Room A
9:30 AM-10:20AM

Opening Ceremony

Welcome Speech
Chairman of the JPMIC2017 Organizing Committee, Akira KAWASAKI

Plenary Lecture

Chairperson: Akira KAWASAKI (Tohoku University, Japan)

[Plenary-01]
Fabrication and Characterization of Cu/C Composite Materials Using An Innovative Solid-liquid Co-existent Phase Process
Jean-Francois SILVA (ICMBC-CNRS (France))
Hiroyuki Y. Suzuki1, *Taketoshi Wada2, Yoshio Zama3 (1. Graduate School of Education, Hiroshima University (Japan), 2. Graduate School of Mechanical Engineering, Hiroshima University(Japan), 3. Graduate School of Mechanical Engineering, Gunma University(Japan))
5:30 PM -  5:50 PM

[7A-A2-02] Development of All-ceramic Artificial Teeth Using a High-speed Centrifugal Compaction Process with a 3D printer
Hiroyuki Y Suzuki2, *Michiyoshi Ishii1 (1. Mechanical engineering, Hiroshima university(Japan), 2. Graduate school of Education(Japan))
5:50 PM -  5:50 PM

*Muhammad Kozin1,2, Naoya Yamada3, Masatoshi Aramaki1, Yukiko Ozaki1, Osamu Furukimi1 (1. Department of Materials Science and Engineering, Kyushu University(Japan), 2. Agency for the Assessment and Application of Technology(Indonesia), 3. Nihon Techno Corporation Limited(Japan))
6:10 PM -  6:30 PM

[7A-A6-02] [INVITED] A numerical analysis of the gas flow in an annealing furnace applied to steel powder production
*Naoya HONDA1, Itsuya SATO1, Yoshitomo SUZUKI1, Kazuhiro OTSUKA1, Akio KOBAYASHI1, Naomichi NAKAMURA1 (1. JFE-Steel Corporation(Japan))
10:55 AM - 11:15 AM

*Satoru Miyakawa1, Sachiko Masuoka1, Kazunari Ezaki1, Yoichihiro Shimpo1, Yoshiro Arami1 (1. Fukuda Metal Foil &Powder Co., Ltd.(Japan))
11:15 AM -  11:35 AM

[7A-A6-04] Proposal of new fabrication method for metal nano-dots
*Yoichi OKAMOTO1,2, kenya NIMURA3, Hiroshi NAKASTUGAWA3 (1. National Institute for Materials Science(Japan), 2. National Defense Academy(Japan), 3. Yokohama National University(Japan))
11:35 AM -  11:55 AM
[7A-D3-03] The influence of alpha plus beta region sintering on the mechanical properties of injection molded Ti-6Al-4V compacts

*Kentaro KUDO¹, Toshiko OSADA², Kazunari SHINAGAWA³, Hideshi MIURA⁴ (1. Department of Mechanical Engineering, Graduate school of Kyushu University(Japan), 2. Department of Mechanical Engineering, Graduate School of Science and Engineering, Tokyo Metropolitan University(Japan), 3. Department of Mechanical Engineering, Kyushu University(Japan), 4. Research Center for Steel, Kyushu University(Japan))
2:10 PM - 2:30 PM


*Norhamidi MUHAMAD¹, Nor Nabilla Kadiman¹, Abu Bakar Sulong¹, Natasha Emira Azaman¹, Muhammad Omar Abdul Rashid¹ (1. UNIVERSITI KEBANGSAAN MALAYSIA(Malaysia))
2:30 PM - 2:50 PM

[7A-D3-05] [INVITED] In Situ Observation of Deformation during Debinding and Sintering Process of MIM Parts

*Toshiko OSADA¹, Satoshi KOBAYASHI¹, Kazunari SHINAGAWA² (1. Tokyo Metropolitan University(Japan), 2. Kyushu University(Japan))
2:50 PM - 3:10 PM

[7A-D3-06] [INVITED] Application of Powder Injection Molding Process for Industrial Fields

Joo Won OH¹, Daseul SHIN¹, Jae Man PARK¹, Chang Woo GAL¹, Seong Jin Park¹ (1. Pohang University of Science and Technology (POSTECH)(Korea))
3:30 PM - 3:55 PM

[7A-D3-07] [INVITED] Application of Metal Injection Molding to Aluminide Intermetallic Compounds

*Kiyotaka KATO¹ (1. Magnetic Powder Metallurgy Research Center, National Institute of Advanced Science and Technology(Japan))
3:55 PM - 4:15 PM

[7A-D3-08] Development of Inconel 713C by Metal Injection Molding

*Eiji Endo¹, Hideki Nakayama¹, Masaru Sakamura² (1. CASTEM CO., LTD(Japan), 2. Hiroshima Prefectural Technology Research Institute(Japan))
4:15 PM - 4:35 PM

[7A-D3-09] Characterization of Metal Injection Molding Feedstock using Mixing Torque Data

*Shinta VIRDHIAN¹, Muhamad Aldino WUAYA², Bambang IRAWAN³, Bambang SUHARNO³, Sugeng SUPRIADI², Najmi M BALFAS² (1. Balai Besar Logam dan Mesin, Ministry of Industry(Indonesia), 2. Dept. of Mechanical Engineering, University of Indonesia(Indonesia), 3. Dept. of Dental Material, University of Indonesia(Indonesia), 4. Dept. of Metallurgy and Material Engineering, University of Indonesia(Indonesia))
4:35 PM - 4:55 PM


*Volker Piotter¹, Klaus Plewa¹, Metin Tueluemen¹ (1. Karlsruhe Institute of Technology(Germany))
4:55 PM - 5:15 PM

Room B

Oral presentation | A | A-7:Mechanical Alloying

Chairperson: Kei AMEYAMA (Ritsumeikan University, Japan), Chairperson: Keiichi N. ISHIHARA (Kyoto University, Japan)
5:30 PM - 6:40 PM Room B (2F, International Conference Hall I)

[7B-A7-01] [INVITED] Current State and Proposed Scenarios of Phase Transformations in Alloys at Mechanical Alloying

*Anatoly Yegorovich Yermakov¹, Yury Nikolaevich Gornostyrev¹, Ilya Kimovich Razumov¹ (1. M.N. Miheev Institute of Metal Physics of Ural Branch of Russian Academy of Sciences(Russia))
5:30 PM - 5:55 PM

[7B-A7-02] [Memorial Lecture of JSPM Award] The potential of mechanical alloying for new materials processing technology
[7B-E8-05] [INVITED] properties and electric-field-induced lattice deformation of Bi(Mg1/2Ti1/2)O3-modified BaTiO3-BiFeO3 ceramics
*Ichiro FUJII1, Tomoya AIZAWA1, Shintaro UENO2, Nobuhiro KUMADA1, Chikako MORIYOSHI2, Yoshihiro KUROIWA3, Satoshi WADA1 (1. University of Yamanashi(Japan), 2. Hiroshima University(Japan))
1:30 PM - 1:50 PM

[7B-E8-06] [INVITED] Bi-based non-centrosymmetric perovskites
*Alexei A. BELIK1 (1. National Institute for Materials Science(Japan))
1:50 PM - 2:10 PM

[7B-E8-07] Enhanced piezoelectric response due to polarization rotation in cobalt-substituted BiFeO3 epitaxial thin films
*Keisuke SHIMIZU1, Hajime HOJO2, Yuichi IKUHARA3, Masaki AZUMA1 (1. Tokyo Institute of Technology(Japan), 2. Kyushu University(Japan), 3. University of Tokyo(Japan))
2:10 PM - 2:30 PM

[7B-E8-08] Pyroelectric behavior of lead-free (Ba, Ca)(Ti, Zr)O3 based materials
*Daisuke Ando1, Teruaki Fuchigami1, Ken-ichi Kakimoto1,2 (1. Department of Life Science and Applied Chemistry, Nagoya Institute of Technology(Japan), 2. Frontier Research Institute for Materials Science, Nagoya Institute of Technology(Japan))
2:30 PM - 2:50 PM

[7B-E8-09] [INVITED] Observation of charged domain walls in improper ferroelectric materials
Kousuke Kurushima1,2, S-W Cheong3, Yui Ishii1, *Shigeo Mori1 (1. Osaka Prefecture University(Japan), 2. Toray Research Center(Japan), 3. Rutgers Center of Emergent Materials, Rutgers University(United States of America))
2:50 PM - 3:10 PM
[7B-E8-10] [INVITED] Development of Functional Materials with Ubiquitous Oxides

*Hiroki Taniguchi
(1. Department of Physics, Nagoya University(Japan))
3:30 PM - 3:50 PM

[7B-E8-11] [INVITED] Features of Ga-doped ZnO tablets and unique properties of ZnO-based thin films

*Tetsuya YAMAMOTO, Akira Senjyu, Nobuyuki Kuroiwa, Taisei Yamamoto, Junichi Nomoto
(1. Kochi University of Technology(Japan), 2. Hakusui Tech Co.,Ltd.(Japan))
3:50 PM - 4:10 PM

[7B-E8-12] Effects of microstructure of dust cores on permeability under bias magnetic field

*Tomofumi KURODA
(1. Materials Development Center, TDK Corporation(Japan))
4:10 PM - 4:30 PM

[7B-E8-13] Fabrication of open-cell type porous carbon film as free-standing electrode for lithium-ion battery by liquid metal dealloying

*WONYOUNG PARK, TAKESHI WADA, HIDEMI KATO
(1. Graduate School of Engineering, Tohoku University(Japan), 2. Institute for Materials Research, Tohoku University(Japan))
4:30 PM - 4:50 PM

[7B-E8-14] [INVITED] Amorphous sulfide active materials with high capacity for all-solid-state rechargeable batteries

*Akitoshi HAYASHI, Masahiro TATSUMISAGO
(1. Osaka Prefecture University(Japan))
4:50 PM - 5:10 PM

Room C

Oral presentation | E | E-2: Metallic glasses (Bulk, Rapidly quenched)

[7C-E2] Metallic glasses (Bulk, Rapidly quenched)
Chairperson: Junji SAIDA (Tohoku University, Japan),
Chairperson: Teruo BITOH (Akita Prefectural University, Japan)
3:30 PM - 4:55 PM Room C (2F, International Conference Hall II)

[7C-E2-01] [INVITED] Size-dependent shear banding behavior in metallic glass particle

S. Y. Kim, J. W. Kim, K. Nakayama, *Eun Soo Park
(1. Seoul National University(Korea), 2. Tohoku University(Japan))
3:30 PM - 3:55 PM

[7C-E2-02] Plastic Deformation Behavior of Zr-Cu-Ni-Al-NM (NM: Noble Metal) Bulk Metallic Glasses

*Tohru YAMASAKI, Toshiyuki DOI, Kazutaka FUJITA, Hideki KATO
(1. Department of Materials and Synchrotron Radiation Engineering, Graduate School of Engineering, University of Hyogo(Japan), 2. Graduate Student, University of Hyogo(Japan), 3. Department of Mechanical Engineering, National Institute of Technology, Ube College(Japan), 4. Institute for Materials Research, Tohoku University(Japan))
3:55 PM - 4:15 PM

[7C-E2-03] Influences of Casting Diameter, Surface Defect and Low Temperature Thermal Cycles on Improvement of Ductility in Bulk Metallic Glass

*Chihiro KISAKI, Kazutaka FUJITA, Yoshikatu YAMAZAKI, Kenji AMIYA, Tohru YAMASAKI, Hideki KATO
(1. Advanced Production System Engineering Course student, National Institute of Technology, Ube College(Japan), 2. Department of Mechanical Engineering, National Institute of Technology, Ube College(Japan), 3. Institute for Materials Research, Trans-Regional Corporation Center for Industrial Materials Research, Tohoku University(Japan), 4. Research Center for Nano-Micro Structure Science and Engineering, Graduate School of Engineering, University of Hyogo(Japan), 5. Institute for Materials Research, Tohoku University(Japan))
4:15 PM - 4:35 PM

[7C-E2-04] Impact of the thermal and mechanical processing on mechanical properties of Ti-Ni-Cu-Zr based crystal/glassy alloys

*Jing JIANG, Hidemi KATO, Dmitri V LOUZGUINE-LUZGIN
(1. Graduate School of Engineering, Tohoku University(Japan), 2. Institute for Materials Research, Tohoku University(Japan), 3. Advanced Institute for Materials Research, Tohoku University(Japan))
4:35 PM - 4:55 PM

Oral presentation | E | E-2: Metallic glasses (Bulk, Rapidly quenched)

[7C-E2] Metallic glasses (Bulk, Rapidly quenched)
Chairperson: Tohru YAMASAKI (University of Hyogo, Japan),
Chairperson: Eun Soo PARK (Seoul National University, Korea)
5:30 PM - 6:30 PM Room C (2F, International Conference Hall II)

[7C-E2-05] [INVITED] Mechanically-induced Structural Rejuvenation by HPT deformation in Zr-Cu-Al
Bulk Metallic Glass
*Koichi TSUCHIYA,^1,2, Jian QIANG,^1,2, Shinji KOHARA,^1, Yohei ONODERA,^3,1, Osami SAKATA
1. National Institute for Materials Science(Japan), 2. University of Tsukuba(Japan), 3. Kyoto University(Japan)
5:30 PM - 5:50 PM

[7C-E2-06] [INVITED] Structural rejuvenation by thermal process and improved mechanical properties in Zr-based metallic glasses
*Junji SAIDA, Wei GUO, Rui YAMADA
(1. Tohoku University(Japan))
5:50 PM - 6:10 PM

[7C-E2-07] Relation between tensile plastic elongation and beta relaxation in severely deformed bulk metallic glass
*Nozomu Adachi, Yoshikazu Todaka
(1. Toyohashi University of Technology(Japan))
6:10 PM - 6:30 PM

Oral presentation | E | E-3:Nano and Ultra-fine Materials

[7C-E3] Nano and Ultra-fine Materials
Chairperson: Kei AMEYAMA (Ritsumeikan University, Japan),
Chairperson: Hidemi KATO (Tohoku University, Japan)
10:30 AM - 12:30 PM Room C (2F, International Conference Hall II)

[7C-E3-01] [INVITED] Severe Plastic Deformation under High Pressure: Powder Consolidation and Synthesis for Enhanced Mechanical Properties
*Zenji HORITA,^1,2 (1. Department of Materials Science and Engineering, Kyushu University, Japan), 2. WPI, Institute for Carbon-Neutral Energy Research (WPI-I2CNER), Kyushu University Japan)
10:30 AM - 10:50 AM

[7C-E3-02] Segregation of Solute Atoms in Mg-Zn Alloys during Severe Plastic Deformation by HPT
*Koichi TSUCHIYA,^1 Alok SINGH,^1,2, Dudekla Althaf BASHA,^1, Fanqiang MENG,^1,2, Hidetoshi SOMEKAWA
(1. National Institute for Materials Science(Japan), 2. Ames laboratory, Iowa State University(United States of America))
10:50 AM - 11:10 AM

[7C-E3-03] Effect of Elemental Combination on Friction Stress and Hall-Petch Relationship in High / Medium Entropy Alloys Processed by Severe Plastic Deformation and Subsequent Annealing
*Shuhei YOSHIDA,^1,2, Tilak BHATTACHARJEE,^1,2, Yu BAI,^1,2, Nobuhiro TSUJI
1. Department of Materials Science and Engineering, Kyoto University(Japan), 2. Elements Strategy Initiative for Structural Materials (ESISM), Kyoto University(Japan)
11:10 AM - 11:30 AM

[7C-E3-04] Change in electrical resistivity of fcc metals caused by accumulative roll bonding
*Yoji MIYAJIMA
(1. Tokyo Institute of Technology(Japan))
11:30 AM - 11:50 AM

[7C-E3-05] Deformation behavior in ultrafine-grained pure Fe with a large uniform elongation
*SATO Hirokazu, Adachi Nozomu, Todaka Yoshikazu
(1. Toyohashi University of Technology(Japan))
11:50 AM - 12:10 PM

[7C-E3-06] Effect of colony size on tensile properties of lamellar and bi-lamellar microstructures in Ti-6Al-4V alloy
*Jangho YI, Yan CHONG, Nobuhiro TSUJI
(1. Department of Materials Science & Engineering, Kyoto University(Japan), 2. Elements Strategy Initiative for Structural Materials (ESISM), Kyoto University(Japan))
12:10 PM - 12:30 PM

Oral presentation | E | E-3:Nano and Ultra-fine Materials

[7C-E3] Nano and Ultra-fine Materials
Chairperson: Zenji HORITA (Kyushu University, Japan),
Chairperson: Koichi Tsuchiya TSUCHIYA (National Institute for Materials Science, Japan)
1:30 PM - 3:10 PM Room C (2F, International Conference Hall II)

[7C-E3-07] [INVITED] Nano-Meso Heterogeneous Microstructure Design for High Performance Metallic Materials
*Kei AMEYAMA
(1. Ritsumeikan University, Japan)
1:30 PM - 1:50 PM

[7C-E3-08] [INVITED] Suppressing Ligament Growth of Porous Metals during Liquid Metal Dealloying Process
*Hidemi KATO, Takeshi WADA, Masashi TSUDA
(1. Institute for Materials Research, Tohoku University(Japan))
1:50 PM - 2:10 PM
[7C-E3-09] Creation of individual few-layer graphene incorporated in an aluminum matrix
*WEIWEI ZHOU, Keiko KIKUCHI, Naoyuki NOMURA, Akira KAWASAKI (1. Tohoku University(Japan))
2:10 PM - 2:30 PM

[7C-E3-10] High-temperature pressurized sintering of yttria-stabilized tetragonal zirconia powder compacts by 28-GHz microwave irradiation
*Kozaburo TAI, Tatsuo KUMAGAI (1. National Defence Academy(Japan))
2:30 PM - 2:50 PM

[7C-E3-11] Ring-like assembly of silica nanospheres in the presence of amphiphilic block copolymers
*Chisato ATSUMI, Shintaro ARAOKA, Ayae SUGAWARA-NARUTAKI, Chikara OHTSUKI (1. Nagoya University(Japan), 2. Osaka University(Japan))
2:50 PM - 3:10 PM

Room D
Oral presentation | E | E-6:Bio-Medical Materials

Chairperson: Chikara OHTSUKI (Nagoya University, Japan),
Chairperson: Takeshi YABUTSUKA (Kyoto University, Japan)
10:30 AM - 12:35 PM Room D, Oral (2F, International Conference Hall III)

[7D-E6-01] Incorporation behavior of alkylammonium into sheet-like calcium silicate hydrate
*Jin NAKAMURA, Ayae SUGAWARA-NARUTAKI, Chikara OHTSUKI (1. Nagoya University(Japan))
10:30 AM - 10:50 AM

[7D-E6-02] Effect of magnesia doping on phase change during sintering process of α-tricalcium phosphate
*Takaharu KATSU, Jin NAKAMURA, Ayae SUGAWARA-NARUTAKI, Chikara OHTSUKI (1. Nagoya University(Japan))
10:50 AM - 11:10 AM

[7D-E6-03] Design of osteoconductive materials derived from organic substances with incorporation of calcium ions and silanol groups
*Chikara OHTSUKI, Jin NAKAMURA, Ayae SUGAWARA-NARUTAKI (1. Nagoya University(Japan))
11:10 AM - 11:30 AM

[7D-E6-04] Fabrication of bioactive ultrahigh molecular weight polyethylene by calcium phosphate nucleation in simulated body fluid
*Takeshi YABUTSUKA, Shigeomi TAKAI, Takeshi YAO (1. Department of Fundamental Energy Science, Graduate School of Energy Science, Kyoto University(Japan), 2. National Institute of Technology, Kagawa College(Japan))
11:30 AM - 11:50 AM

[7D-E6-05] [INVITED] Siloxane-doped calcium carbonate powders for bone regeneration
*Akiko OBATA, Gavin JELL, Toshihiro KASUGA (1. Division of Advanced Ceramics, Nagoya Institute of Technology(Japan), 2. Division of Surgery and Interventional Science, Royal Free NHS Trust Hospital, University College London(UK))
11:50 AM - 12:10 PM

[7D-E6-06] [INVITED] A new approach for bioceramic 3D printing
*Hui-Suk YUN (1. Powder & Ceramics Division, Korean Institute of Materials Science(Korea))
12:10 PM - 12:35 PM

Room E
Oral presentation | C | C-1:Synthesis, Processing, and Properties of Powder

[7E-C1] Synthesis, Processing, and Properties of Powder
Chairperson: Takashi SHIRAI (Nagoya Institute of Technology, Japan), Chairperson: Miki INADA (Kyushu University, Japan)
10:30 AM - 12:15 PM Room E, Oral (2F, Conference Room III)

[7E-C1-01] [INVITED] From Colloidal Solution to Nanocomposite Materials: ZnO, SiO₂ and Transition Metal Cluster
*Fabien GRASSET, Ngan.T.K. NGUYEN, Wanghui CHEN, Adele RENAUD, Norio SAITO, Benjamin DIERRE, Noriko SAITO, Noee DUMAIT, Stéphane CORDIER, Naoki OHASHI, Tetsuo UCHIKOSHI (1. LINK UMI 3629 CNRS-Saint-Gobain-NIMS, NIMS(Japan), 2. Research Center for Functional Materials, NIMS(Japan), 3. ISCR UMR 6226 CNRS-University of Rennes (France), 4. NIMS-Saint-Gobain COE for Advanced Materials, NIMS(Japan))
10:30 AM - 10:55 AM
SHS-PRODUCED CAST REFRACTORY ALLOYS FOR REPROCESSING INTO MICRO GRANULES USED IN 3D ADDITIVE TECHNOLOGIES

*Vladimir Sanin¹, Vladymir Yukhvid¹, Dmitriy Andreev¹, Denis Ikornikov¹, Evgeniy Levashov², Yury Pogozhev² (1. Institute of Structural Macrokinetics and Materials Science (ISMAN) (Russia), 2. National University of Science and Technology MISIS(Russia))

10:55 AM - 11:15 AM

Effect of silicate ions on mechanical properties of SiO₂/graphite composite materials

*Satono Goto¹,², Chica Takai¹,², Hadi Razavi-Khosroshahi¹,², Masayoshi Fuji¹,² (1. Nagoya Institute of Technology(Japan), 2. Advanced Ceramics Research Center(Japan))

11:15 AM - 11:35 AM

Effect of the PAA concentration on the hollow silica nanoparticles prepared by using the PAA/NH₃ emulsion template method

*Yukiya SHAO¹, Chika TAKAI¹, Hadi RAZAVI-KHOSROSHAHI¹, Masayoshi FUJI¹ (1. Nagoya Institute of Technology(Japan))

1:30 PM - 1:50 PM

Effect of the PAA concentration on the hollow silica nanoparticles prepared by using the PAA/NH₃ emulsion template method

*Yukiya SHAO¹, Chika TAKAI¹, Hadi RAZAVI-KHOSROSHAHI¹, Masayoshi FUJI¹ (1. Nagoya Institute of Technology(Japan))

1:30 PM - 1:50 PM

The synthesis of a porous-type of TiO₂ with rutile structure

*Yukiya Yamashita¹,², Kei Ishiguro¹, Daisuke Nakai¹, Masayoshi Fuji² (1. NIPPON AEROSIL(Japan), 2. Nagoya Institute of Technology(Japan))

1:50 PM - 2:10 PM

Synthesis and shell thickness control of TiO₂ hollow particles with enhanced photocatalytic activity

*Wenhao SHAO¹, Chika TAKAI¹, Hadi RAZAVI-KHOSROSHAHI¹, Masayoshi FUJI¹ (1. Nagoya Institute of Technology(Japan))

2:10 PM - 2:30 PM

Processing and Properties of Silica Based Carbon-ceramic Nanocomposite by a Facile and Environmental Friendly Method

*Bo PENG¹, Chika TAKAI¹, Hadi RAZAVI-KHOSROSHAHI¹, Masayoshi FUJI¹ (1. Nagoya Institute of Technology(Japan))

2:30 PM - 2:50 PM

Oral presentation | C | C-1:Synthesis, Processing, and Properties of Powder

Chairperson: Hisao SUZUKI (Shizuoka University, Japan)

1:30 PM - 3:10 PM Room E (2F, Conference Room III)

Photocatalytic properties and plastic degradation of synthetic rutile TiO₂ from natural ore

*Wanichaya Mekprasart MEKPRASART¹, Titarat THONGPRADITH¹, Wisanu PECHARAPA¹, Keiichi N. iSHIHARA² (1. College of Nanotechnology, King Mongkut's Institute of Technology Ladkrabang (KMITL)(Thailand), 2. Graduate School of Energy Science, Kyoto University(Japan))

1:30 PM - 1:50 PM

Oral presentation | C | C-1:Synthesis, Processing, and Properties of Powder

Chairperson: Tetsuo UCHIKOSHI (National Institute for Materials Science, Japan)

3:30 PM - 5:15 PM Room E (2F, Conference Room III)

[INVITED] Optimum combination of co-milling and subsequent heating for functional complex oxides

*Mamoru Senna¹,², Peter Billik³, Dariusz Oleszak⁴, Erika Tothova⁵, Martin Fabian⁶, Vladimir Sepelak⁶, Horst Hahn⁶ (1. Keio University(Japan), 2. Shizuoka University(Japan), 3. Comenius University(Slovakia), 4. Warsaw University of Technology(Poland), 5. Institute of Geotechnics SAS(Slovakia), 6. Karlsruhe Institute of Technology(Germany))

2:50 PM - 3:10 PM

[INVITED] Optimum combination of co-milling and subsequent heating for functional complex oxides

*Mamoru Senna¹,², Peter Billik³, Dariusz Oleszak⁴, Erika Tothova⁵, Martin Fabian⁶, Vladimir Sepelak⁶, Horst Hahn⁶ (1. Keio University(Japan), 2. Shizuoka University(Japan), 3. Comenius University(Slovakia), 4. Warsaw University of Technology(Poland), 5. Institute of Geotechnics SAS(Slovakia), 6. Karlsruhe Institute of Technology(Germany))

2:50 PM - 3:10 PM
Visible-Light-Active Metal Oxide Photocatalysts by High-Pressure Torsion Processing Method

Hiroyuki MUTO, Go KAWAMURA, Atsunori MATSUDA (Toyohashi University of Technology, Japan)
3:30 PM - 3:55 PM

Activated Natural Ore Synthesized by Ultrasonic-assisted Ball-milling Process

Hadi RAZAVI KHOSROSHAHI, Kaveh EDALATI, Yuki NAKASHIMA, Zenji HORITA, Masayoshi FUJI (Nagoya Institute of Technology, Japan)
3:55 PM - 4:15 PM

Low temperature synthesis for nano particle of cage structured 12CaO·7Al2O3

Naonori SAKAMOTO, Shuto SUZUKI, Shiori MANEYAMA, Kenta KAMIMURA, Goran DRAZIC, Andreja BENCAN, Barbara MALIC, Takahiko KAWAGUCHI, Naoki WAKIYA (Shizuoka University, Japan)
4:15 PM - 4:35 PM

Morphological control of ceria-zirconia particles with high specific surface area by microwave-emulsion method

Miki INADA, Junichi HOJO (Center of Advanced Instrumental Analysis, Kyushu University, Japan)
4:35 PM - 4:55 PM

Structural effects of hollow silica nanoparticles on their fluorescent property

Masashi Noritake, Chika Taka, Hadi Khosroshahi Razavi, Masayoshi Fuji (Nagoya Institute of Technology, Japan)
5:30 PM - 5:50 PM

Silica nanoparticle network induced by micro-phase separation through affinity control

Chika TAKAI, Hidenori NAGAMINE, Masayoshi FUJI (JSPS Research Fellow, Japan)
5:50 PM - 6:10 PM

Al-SUS316L composite materials manufactured by the spark plasma sintering process

Hansang KWON, Jehong Park, Akira Kawasaki (Pukyong National University, Korea, Next Generation Materials Co., Ltd, Tohoku University, Japan)
3:20 PM - 3:45 PM

The effect of YSZ and cBN addition on the consolidation of WC-Co by spark plasma sintering

Thabiso LANGA, Peter OLUBAMBI, Miltia LESUFI (Centre for Nanoengineering and Tribocorrosion, University of Johannesburg, South Africa)
3:45 PM - 4:05 PM

Spark plasma sintering of Ni-graphite composite powder synthesized by electrical
explosion of wire in liquid and its properties
*THUYET MINH NGUYEN, JIN-CHUN KIM, JIN-HUYNG KIM, DONG-WAN LEE (1. School of Materials Science and Engineering, University of Ulsan, Korea (Korea))
4:05 PM - 4:25 PM

**[7F-A3-04] Biocompatible Ti-based bulk metallic glassy composites produced by spark plasma sintering**
*Guoqiang XIE, Shengli ZHU, Hiroyasu KANETAKA (1. Graduate School of Dentistry, Tohoku University, Sendai 980-8575 (Japan), 2. Shenzhen Graduate School, Harbin Institute of Technology, Shenzhen 518055 (China), 3. Graduate School of Biomedical Engineering, Tohoku University, Sendai 980-8579 (Japan), 4. School of Materials Science and Engineering, Tianjin University, Tianjin 300072 (China))
4:25 PM - 4:45 PM

**[7F-A3-05] [INVITED] Spark Plasma Sintering of Mesoporous Powders**
*Lianjun WANG, Wan JIANG (1. College of Material Science & Engineering, Donghua University (China))
4:45 PM - 5:10 PM

Oral presentation | A | A-3:Spark Plasma Sintering

**[7F-A3] Spark Plasma Sintering**
Chairperson: Hansang KWON (Pukyong National University, Korea), Chairperson: Kimihiro OZAKI (National Institute of Advanced Industrial Science and Technology (AIST), Japan)
5:30 PM - 6:50 PM Room F (2F, Conference Room IV)

**[7F-A3-06] [INVITED] Fabrication of FeB-Fe/Ni system hard materials by spark plasma sintering and their characteristics**
*Zhefeng XU, Kazuhiro MATSUGI, Shaoming KANG, Yombum CHO, Jinhu YU (1. Graduate School of Engineering, Hiroshima University (Japan), 2. State Key Laboratory of Metastable Materials Science and Technology, Yanshan University (China))
5:30 PM - 5:50 PM

**[7F-A3-07] Evolution of microstructure heterogeneity during two-step PECS of polycrystalline alumina**
*HIEN HUU NGUYEN, MAKOTO NANKO (1. Nagoya University of Technology (Japan))
5:50 PM - 6:10 PM

**[7F-A3-08] Microstructural evolution studies of nanostructured Ti-Ta-Zr alloy during spark plasma sintering**
*Moipone Linda LETHABANE, Lubabalo M KUBONI, Peter Apata OLUBAMBI, Bamidele Lawrence BAYODE, Mxolisi Brendon SHONGWE, Munyadiziwa Mercy RAMAKOKOVHU (1. Institute for NanoEngineering Research, Department of Chemical, Metallurgy and Materials Engineering, Tshwane University of Technology(South Africa), 2. Centre for Nanoengineering and Tribocorrosion, School of Mining, Metallurgy and Chemical Engineering, University of Johannesburg(South Africa))
6:10 PM - 6:30 PM
[7F-E5-03] **Transparent YAG and YAG: Ce$^{3+}$ prepared by spark plasma sintering**

*Ying LI$^1$, Hirokazu KATSUI$^1$, Takashi GOTO$^1$ (1. Institute for Materials Research, Tohoku University(Japan))

11:55 AM - 11:15 AM

[7F-E5-04] **SiAlON coating by laser chemical vapor deposition for bond coat in EBC system**

Takumi NAKANO$^1$, Hirokazu KATSUI$^1$, Takashi GOTO$^1$ (1. Institute for Materials Research, Tohoku University(Japan))

11:15 AM - 11:35 AM

[7F-E5-05] **Electrical and thermal properties of nitrogen-doped SiC sintered body**

*Yukina TAKI$^1$, Mettaya KITIWAN$^1$, Hirokazu KATSUI$^1$, Takashi GOTO$^1$ (1. Institute for Materials Research, Tohoku University(Japan))

11:35 AM - 11:55 AM


*Masao TOKITA$^1$ (1. NJS Company Limited(Japan))

1:30 PM - 1:50 PM

[7F-E5-07] **Spark plasma sintering of WC-diamond composites using SiC-coated diamond**

*Mettaya KITIWAN$^1$, Hirokazu KATSUI$^1$, Takashi GOTO$^1$ (1. Institute for Materials Research, Tohoku University(Japan))

1:50 PM - 2:10 PM

[7F-E5-08] **[INVITED] Particle and Powder Designs for Graded Microstructure in Advanced Ceramics**

*Takuma TAKAHASHI$^1$, Junichi TATAMI$^2$, Motoyuki IIJIMA$^2$ (1. Kanagawa Institute of Industrial Science and Technology(Japan), 2. Yokohama National University(Japan))

2:10 PM - 2:30 PM

[7F-E5-09] **[INVITED] High-Temperature Strength and Room-Temperature Fracture Toughness of MoSiBTIC Alloy**

*Kyosuke YOSHIMI$^1$, Sadahiro TSUREKAWA$^2$, Hiroyuki FUKUYAMA$^3$, Takashi GOTO$^4$ (1. Tohoku University, Department of Materials Science(Japan), 2. Kumamoto University, Division of Materials Science, Faculty of Advanced Science and Technology(Japan), 3. Tohoku University, Institute of Multidisciplinary Research for Advanced Materials(Japan), 4. Tohoku University, Institute for Materials Research(Japan))

2:30 PM - 2:50 PM
[8A-A2] Sintering and Post Processing
Chairperson: Yong-Jin KIM (Korea Institute of Materials Science, Korea), Chairperson: Hiroyuki SUZUKI (Hiroshima University, Japan)
9:20 AM - 11:05 AM Room A (1F, Centennial Hall)

[8A-A2-01] [INVITED] HIP Application and Trends in Korea
*Yong-Jin KIM1, Sangsun YANG1, Tae-Soo LIM1 (1. Korea Institute of Materials Science(Korea))
9:20 AM - 9:45 AM

*Matthew OZOEMENA1, Gregory J. GIBBONS1 (1. WMG, The University of Warwick(UK))
9:45 AM - 10:05 AM

[8A-A2-03] Computer Simulation Studies on Liquid Phase Sintering by Molecular Dynamics and Monte-Carlo Methods
*Shuji MATSUMOTO1, Masayoshi SHIMIZU4, Hiroshi NOMURA3, Hideaki MATUSBARA2,3 (1. Murata Manufacturing Co., Ltd(Japan), 2. Tohoku University(Japan), 3. Japan Fine Ceramics Center(Japan), 4. Midorinosozai Laboratory(Japan))
10:05 AM - 10:25 AM

[8A-A2-04] Field-assisted and Flash Sintering of Oxide Ceramics: Densification and Microstructural Evolution
*Hidehiro YOSHIDA1, Koji MORITA1, Byung-Nam KIM1, Yoshio SAKKA1, Takahisa YAMAMOTO2 (1. National Institute for Materials Science(Japan), 2. Nagoya University(Japan))
10:25 AM - 10:45 AM

[8A-A2-05] Development of ceramic molds suitable for high-speed centrifugal casting
Hiroyuki Y. Suzuki1, *Ryuto Tanaka2 (1. Graduate School of Education, Hiroshima University(Japan), 2. Graduate School of Mechanical Engineering, Hiroshima University (Japan))
10:45 AM - 11:05 AM

[8A-A4] Iron and Steel Materials
Chairperson: Ola LITSTROM (Hoganas Taiwan Ltd, Taiwan)
1:00 PM - 3:05 PM Room A (1F, Centennial Hall)

[8A-A4-01] [INVITED] Master Alloys for introducing alloying elements in low-alloy steels: new concepts and possibilities
*Raquel DE ORO CALDERON1, Christian Gerl-Mayer1, Herbert Danninger1 (1. TU Wien(Austria))
1:00 PM - 1:25 PM

[8A-A4-02] Improvement of Fatigue Strength of Liquid Phase Sintered Steel by Using Pre-alloyed Powder
*Shigeki Egashira1, Tomoyuki Ishimine1, Tomoyuki Ueno1 (1. Sumitomo Electric Industries, LTD.(Japan))
1:25 PM - 1:45 PM

[8A-A4-03] Anti-adhesive wear properties improved matrix-toughened seat, valve material
*Hiroyuki Yamamoto1 (1. FINE SINTER CO., LTD.(Japan))
1:45 PM - 2:05 PM

[8A-A4-04] The behaviour of Low Alloy Steel Powder during uniaxial cold compaction – influence of the geometry
*Ileria Cristofolini1, Alberto Molinari1, Gianluca Pederzini2, Alex Rambelli2 (1. University of Trento (Italy), 2. Sacmi Imola S.C.(Italy))
2:05 PM - 2:25 PM

[8A-A4-05] Property of sintered rolling carburized helical gear applied for Ni-Mo pre-alloy steel powder
*Yuji Taniguchi1, Satoshi Nishida1, Masaki Yoshida1, Teruie Takemasu2, Hiroshi Sasaki3 (1. Kobe Steel, Ltd.(Japan), 2. Tokyo University of Science, Suwa(Japan), 3. Nissei Co., Ltd(Japan))
2:25 PM - 2:45 PM

[8A-A4-06] The formation behavior of nano-sized oxide particles formed in mechanically alloyed powder
*Ga Eon KIM1, Sanghoon NOH1, Suk Hoon KANG1, Young Do KIM2, Tae Kyu KIM1 (1. Korea Atomic Energy Research Institute(Korea), 2. Hanyang University(Korea))
2:45 PM - 3:05 PM
3:25 PM - 4:30 PM Room A (1F, Centennial Hall)

[8A-A4-07] [INVITED] Cost-effective sinter-hardening in the 21st century
*Ola LITSTROM, Ulf ENGSTROM, Simon TAN (1. Hoganas Taiwan Ltd(Taiwan), 2. Hoganas China Co. Ltd(China))
3:25 PM - 3:50 PM

[8A-A4-08] Cancelled
3:50 PM - 4:10 PM

[8A-A4-09] SINTER HARDENING PROPERTIES OF LOW-ALLOY PM STEELS
*Hirofumi HOJO, Satomi URUSHIBATA, Ryo KOBAYASHI, Masaki YOSHIDA, Satoshi NISHIDA (1. Kobe Steel, Ltd.(Japan))
4:10 PM - 4:30 PM

Room B

Oral presentation | A | A-7:Mechanical Alloying

Chairperson: Dariusz OLESZAK (Warsaw University of Technology, Poland), Chairperson: Anatoly Yegorovich YERMAKOV(Ural Branch of Russian Academy of Sciences, Russia)
9:20 AM - 11:40 AM Room B (2F, International Conference Hall I)

[8B-A7-01] High Performance Materials Design by Controlling Bimodal Structure Distribution
*Masaya NAGATA, Naoki HORIKAWA, Masashi NAKATANI, Mie OTA, Kei AMEYAMA (1. Ritsumeikan University(Japan))
9:20 AM - 9:40 AM

[8B-A7-02] Inhibition of twinning deformation by Harmonic Structure Design in a beta Ti alloy
*Daiki NANYA, Daiki UEDA, Sanjay Kumar VAJPAY, Mie KAWABATA OTA, Guy DIRRAS, Kei Ameyama (1. Ritsumeikan University(Japan), 2. Maulana Azad National Institute of Technology(India), 3. Université Paris 13(France))
9:40 AM - 10:00 AM

[8B-A7-03] Thermo-mechanical Processing of Harmonic Structure Designed pure Titanium
*Motoki MIYAKOSHI, Akito SHIMAMURA, Daiki NANYA, Mie Ota KAWABATA, Guy DIRRAS, Kei AMEYAMA (1. Ritsumeikan University(Japan), 2. Paris 13 University(France))
10:00 AM - 10:20 AM

[8B-A7-04] Harmonic Structure Designed of Ti-15V-3Cr-3Sn-3Al Alloy by High Pressure Gas Jet Milling Process
*Shuji KOSUGA, Shota YOKOYAMA, Mie Ota KAWABATA, Guy DIRRAS, Kei AMEYAMA (1. Graduate School of Science and Engineering, Ritsumeikan University(Japan), 2. Department of Mechanical Engineering, College of Life Sciences, Ritsumeikan University(Japan), 3. Université Paris 13, Sorbonne Paris Cité, LSPM-CNRS, France)
10:20 AM - 10:40 AM

[8B-A7-05] Effect of thermomechanical processing on mechanical property and microstructure in Harmonic Structure Low carbon steel
*Ryuhei KAI, Masashi NAKATANI, Mie Ota KAWABATA, Kei AMEYAMA (1. Ritsumeikan University(Japan))
10:40 AM - 11:00 AM

[8B-A7-06] Unique Strain Hardening Behavior in Harmonic Structure Designed SUS304L Austenitic Stainless Steel
*Yuya Fujiki, Masashi Nakatani, Mie Ota, Yuntian Zhu, Kei Ameyama (1. Graduate School of Science and Engineering, Ritsumeikan University(Japan), 2. Faculty of Science and Engineering, Ritsumeikan University(Japan), 3. Department of Materials Science and Engineering, North Carolina State University(United States of America))
11:00 AM - 11:20 AM

[8B-A7-07] High Temperature Mechanical Properties of Harmonic Structure Designed SUS304L Austenitic Stainless Steel
*Morihiro Hariki, Masashi NAKATANI, Koki YAGI, Mie Ota KAWABATA, Cinzia Menapace, Alberto MOLINARI, Kei AMEYAMA (1. Ritsumeikan university(Japan), 2. University of Trento(Italy))
11:20 AM - 11:40 AM

Oral presentation | E | E-1:Alloys, Composites, and Hybrids/Nanoparticles and Porous Materials

[8B-E1] Alloys, Composites, and Hybrids/Nanoparticles and Porous Materials
Chairperson: Makoto KOBASHI (Nagoya University, Japan), Chairperson: Hiroyuki MIYAMOTO (Doshisha University, Japan)
1:00 PM - 3:00 PM Room B (2F, International Conference Hall I)
**Development of a high-performance copper-sintered alloy slider**

*RYOTA KOBAYASHI*, KOJI HASEGAWA, NAOSHI ISHIHARA, YOSHIKAZU KUBOTA (1. FINE SINTER CO., LTD. (Japan), 2. RAILWAY TECHNICAL RESEARCH INSTITUTE (Japan))

1:00 PM - 1:20 PM

**Mechanical and chemical properties of hard materials with Ni3(Si,Ti) intermetallic compound**

*Hiroki TANAKA*, Masaki OTSUBO, Hiroto SHIMOMURA, Takayuki KASAGI, Yasuyuki KANENO (1. Machinery Parts Business Department, Nippon Tungsten Co., Ltd. (Japan), 2. Graduate School of Engineering, Osaka Prefecture University (Japan))

1:20 PM - 1:40 PM

**Thermal and Mechanical Properties of Harmonic-Structured Composite with Copper and Molybdenum**

*Hiroshi FUJWARA*, Koki SONE, Fuminori UEGUCHI, Hiroyuki MIYAMOTO (1. Shizuoka Institute of Science and Technology (Japan), 2. Doshisha University (Japan))

1:40 PM - 2:00 PM

**Load transfer strengthening in few-layer graphene reinforced aluminum matrix composites**

*WEIWEI ZHOU*, Keiko KIKUCHI, Naoyuki NOMURA, Akira KAWASAKI (1. Tohoku University (Japan))

2:00 PM - 2:20 PM

**Microstructure and Mechanical Properties of TiAl/Al2O3 in situ Composite by Combustion Process**

*Tran Duc HUY*, Do Thanh BINH, Hiroyuki MIYAMOTO (1. School of Materials Science and Engineering, Hanoi University of Science and Technology, Vietnam (Viet Nam), 2. Faculty of Metallurgy, College of Mechanics and Metallurgy, Thai Nguyen City, Thai Nguyen, Vietnam (Viet Nam), 3. Department of Mechanical and Systems Engineering, Doshisha University, Japan (Japan))

2:20 PM - 2:40 PM

**[INVITED] Powder Processing Route for Making Interpenetrating Anchor Structure for Metal/Polymer Joint**

*Makoto KOBASHI*, Naoki TAKATA, Asuka SUZUKI (1. Graduate School of Engineering, Nagoya University (Japan))

2:40 PM - 3:00 PM

**[INVITED] Mixed-metal oxide nanopowder used to process dense single and multi-layer flexible thin (10-40 μm) films including Li+ superionic electrolytes**

*Richard Laine*, Eonyu YI, Weimin WANG, John KEIFFER (1. University of Michigan, Department of Materials Science and Engineering (United States of America))

3:20 PM - 3:45 PM

**[INVITED] Integration of nano-sized particles via electrostatic adsorption assembly technique for microstructural control of advanced materials**

*Hiroyuki MUTO* (1. Toyohashi University of Technology (Japan))

3:45 PM - 4:05 PM

**[INVITED] Optical Hybrid Materials Containing Inorganic Nanoparticles**

*Kimihiro MATSUZAWA*, Atsushi SASAKI, Koji MMITAMURA, Seiji WATASE, Kensuke NAKA (1. Kyoto Institute of Technology (Japan), 2. Osaka Electro-Communication University (Japan), 3. Osaka Research Institute of Industrial Science and Technology (Japan))

4:05 PM - 4:25 PM

**Surface Modification of Titania Nanoparticles with organophosphorus Compounds and Their Application to Hybrid Materials exhibiting High Refractive Indices**

*Yoshiyuki SUGAHA*, Shiori TAKAHASHI, Satoshi MAEDA, Shuhei HOTTÅ, Naokazu IDOTA, Akira WATANABE, Kimihiro MATSUZAWA (1. Department of Applied Chemistry, School of Science and Engineering, University of Shizuoka (Japan))

4:25 PM - 4:45 PM
Room C

Oral presentation | D | D-4:Additive Manufacturing with Powder Metallurgy

[8C-D4] Additive Manufacturing with Powder Metallurgy
Chairperson: Akira KAWASAKI (Tohoku University, Japan),
Chairperson: Chen-Nan SUN (Singapore Institute of Manufacturing Technology (SIMTech), Singapore)
1:00 PM - 3:05 PM Room C (2F, International Conference Hall II)

[8C-D4-01] [INVITED] Microstructure, defects, and tensile and fatigue properties of additively manufactured Ti-6Al-4V
*Ma Qian1 (1. Royal Melbourne Institute of Technology (RMIT University), Australia)
1:00 PM - 1:25 PM

[8C-D4-02] [INVITED] Effects of post-processing on tensile and fatigue properties of biomedical Co-28Cr-6Mo and Ti-6Al-4V alloys fabricated by electron beam additive manufacturing
*Akihiko CHIBA1, Yuichiro KOIZUMI1, Kenta YAMANAKA1, Kenta AOYAGI1, Hao WANG1 (1. Institute for Materials Research, Tohoku University, Japan)
1:25 PM - 1:45 PM

[8C-D4-03] The formation of peculiar microstructure in Ti-48Al-2Cr-2Nb alloy additively manufactured by electron beam melting
*Mitsuharu Todai1, Takayoshi Nakano1, Tianqi Liu2, Jongyeong Oh1, Hiroyuki Yasuda1, Ken Cho2, Koji Hagihara3, Minoru Ueda4, Masao Takeyama5 (1. Institute of Nihama National College of Technology, Japan), 2. Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University, Japan)
1:45 PM - 2:05 PM

[8C-D4-04] Effect of Particle Size on Quality Characteristics of Pure Titanium Using Metal Additive Manufacturing
Shigeo Mori1, *Kenji Doi1, Shinpei Maruyama1, Toru Takeuchi1, Kazuki Hanami1, Hisashi Kitagaki1, Shuntaro Terauchi1, Tomiharu Matsushita1 (1. Osaka Yakin Kogyo Co., Ltd, Japan)
2:05 PM - 2:25 PM

[8C-D4-05] Temperature measurement and finite element analyses in the selective laser melting process
*Masahiro Kusano1, Shioho Miyazaki1,2, Satoshi Kishimoto1, Atsushi Yumoto2, Makoto Watanabe1,3 (1. National Institute for Materials Science, Japan), 2. Shibaura Institute of Technology, Japan, 3. The University of Tokyo, Japan)
2:25 PM - 2:45 PM

[8C-D4-06] Influence additional heating on phase structure and resistivity of intermetallic SMA fabricated by PBF process
*Igor Shishkovsky1, Vladimir Sherbakoff1 (1. P.N. Lebedev Physics Institute of Russian Academy of Sciences, Samara branch, Russia)
2:45 PM - 3:05 PM

Oral presentation | D | D-4:Additive Manufacturing with Powder Metallurgy
[8C-D4] Additive Manufacturing with Powder Metallurgy
Chairperson: Ma QIAN (Royal Melbourne Institute of Technology (RMIT University), Australia), Chairpersons:Naoyuki NOMURA (Tohoku University, Japan)
3:20 PM - 4:40 PM Room C (2F, International Conference Hall II)

[8C-D4-07] [INVITED] Reaction Sintering of SiC by Direct Laser Forming Technology
*Hideshi Miura1, Kentaro Kudo2, Satoshi Suehiro3, Teiichi Kimura3 (1. Research Center for Steel of Kyushu University, Japan), 2. Graduate school of Kyushu University, Japan, 3. Japan Fine Ceramics Center (Japan)
3:20 PM - 3:40 PM

[8C-D4-08] Stereolithographic Additive Manufacturing of Ceramic Components with Micro Geometric Structures
University(Japan), 4. Metal Technology Co. Ltd (Japan), 5. Department of Metallurgy and Ceramics Science, Tokyo Institute of Technology(Japan)
3:40 PM - 4:00 PM

© the Japan Society of Powder and Powder Metallurgy
Stereolithographic Additive Manufacturing of Ceramic Objects with Fluctuation to Control Environmental Fluid

Hirotoshi NOZAKI1, Soshu KIRIHARA1 (1. Joining and Welding Research Institute Osaka University(Japan))
3:40 PM - 4:00 PM

Acoustic Cavity Modulations by using Stereolithographic Additive Manufacturing

Shoichiro KISANUKI1, Soshu KIRIHARA1 (1. Joining and Welding Research Institute, Osaka University(Japan))
4:00 PM - 4:20 PM

Development of ternary Fe-B-C and quaternary Fe-B-C-Si amorphous alloys with high glass-forming ability and high magnetization

Teruo BITOH1, Takafumi HIBINO1,2, Hisato KOSHIBA3 (1. Akita Prefectural University(Japan), 2. Present affiliation: Hitachi Industrial Equipment Systems Co., Ltd. (Japan), 3. Alps Electric Co., Ltd. (Japan))
9:40 AM - 10:00 AM

Change in Pd-Cu-Ge metallic glass thin films upon heating to a supercooled liquid region

Tokujiro YAMAMOTO1, Eishi KOIKE1, Kazuya SUDO1 (1. Utsunomiya University(Japan))
10:00 AM - 10:20 AM

Powder metallurgy components and process with Ni-Cr-Nb-P-B metallic glass powders

Kenji Amiya1, Yasunori Saotome2, Noboru Shimada3, Atsushi Okuma3, Hidechika Shiratori3, Hiroyasu Mabuse1 (1. Trans-Regional Corporation Center, Institute Material Research, Tohoku University(Japan), 2. MGA Research Laboratory(Japan), 3. Porite Co., Ltd(Japan))
10:20 AM - 10:40 AM

Large-size high strength biodegradable Mg-based bulk metallic glasses and the composites produced by spark plasma sintering

Guoqiang XIE1,2,3, Fengxiang QIN4, Hiroyasu KANETAKA2,3 (1. Shenzhen Graduate School, Harbin Institute of Technology, Shenzhen 518055(China), 2. Graduate School of Dentistry, Tohoku University, Sendai 980-8575(Japan), 3. Graduate School of Biomedical Engineering, Tohoku University, Sendai 980-8579(Japan), 4. School of Materials Science and Engineering, Nanjing University of Science and Technology, Nanjing 210094(China))
10:40 AM - 11:00 AM

Oxidation of benzyl alcohol over skeletal Au catalysts prepared from Au-Zr amorphous alloys

Ai NOZAKI1, Tasuku YASUOKA2, Yasutaka KUWAHARA2, Tetsutaro OHMICHI2, Kohsuke MORI2, Hiromi YAMASHITA2 (1. University of Hyogo(Japan), 2. Osaka University(Japan))
11:00 AM - 11:20 AM

Discrete element simulations: modeling powder metallurgy processes at the particle length scale

Denis ROUSSEL1, Paul PARANT1,2, David JAUFFRES1, Sébastien PICART2, Julie VILLANOVA3, Rajendra K BORDIA4, Christophe L MARTIN1 (1. Univ. Grenoble Alpes, CNRS(France), 2. CEA, Nuclear Energy Division, Research Department of Mining and Fuel Recycling ProCesses(France), 3. ESRF The European Synchrotron(France), 4. University of Oxford(UK), 5. Pacific Northwest National Laboratory, Richland, WA(USA))
11:20 AM - 11:40 AM
[8D-A1-02] [INVITED] Computer Simulation Studies on Sintering and Grain Growth  
*Hideaki MATSUBARA¹ (1. Graduate School of Environmental Studies, Tohoku University(Japan))  
1:00 PM - 1:25 PM

[8D-A1-03] [INVITED] Experimental and numerical simulation of solvent and supercritical fluid debinding of Inconel 718 components realized by metal injection moulding  
*Aboubakry AGNE¹, Thierry BARRIERE¹, Sébastien RICHARD¹, Olivier DUGAUGUEZ², Alexandre ROYER¹ (1. The University of Bourgogne Franche-Comté(France))  
1:25 PM - 1:45 PM

[8D-A1-04] Coupled analysis of heat transfer and sintering behavior in ceramic plates  
*Kazunari SHINAGAWA¹, Noe KOTO², Hiroshi OHNISHI² (1. Kyushu University(Japan), 2. Nikkato Corp.(Japan))  
1:45 PM - 2:05 PM

[8D-A1-05] Computer simulation study on sintering and delamination of porous ceramics coating  
*Sota TERASAKA¹, Hideaki Matsubara¹ (1. Tohoku University(Japan))  
2:05 PM - 2:25 PM

[8D-A1-06] [Invited] Evaluation of theoretical sintering models from experiments  
*BYUNGNAM KIM¹, Tohru S Suzuki¹, Koji Morita¹, Hidehiro Yoshida¹, Ji-Guang Lee², Hideaki Matsubara² (1. Nippon Tokushu Goukin CO., LTD.(Japan), 2. Dept. Environmental Studies, Tohoku University(Japan))  
2:25 PM - 2:45 PM

[8D-B1] [8D-B1-02] Microstructures and Mechanical Properties of Ultra-Fine Cemented Carbides of WC-Co Including Ti(C,N) and Cr2C3  
*Masayuki Takada¹,², Tomohiro Tsutsumi¹, Yoshihiro Mori¹, Hideaki Matsubara² (1. Nippon Tokushu Goukin CO., LTD.(Japan), 2. Dept. Environmental Studies, Tohoku University(Japan))  
3:50 PM - 4:10 PM

[8D-B1-03] Study on thermal stress damage of Ti(C,N) based cermet by laser irradiation  
*Tetsushi MATSUDA¹, Hideaki MATSUBARA¹,² (1. Japan Fine Ceramics Center(Japan), 2. Tohoku University(Japan))  
4:10 PM - 4:30 PM

[8D-B1-04] Correlation between physical properties and damage of cemented carbide tool in Friction Stir Spot Welding of ultra-high tensile strength steel sheets  
*Yoshiharu Utsumi¹, Hiroki Miyazaki¹, Keiichi Tsuda¹, Ryoji Ohashi², Masatoshi Tokunaga³ (1. Sumitomo Electric Industries, Ltd.(Japan), 2. Kawasaki Heavy Industries, Ltd.(Japan), 3. Nippon Steel &Sumitomo Metal Corporation(Japan))  
4:30 PM - 4:50 PM

Room E

[8E-E4] Optical Materials  
Chairperson: Jianrong QIU (Zhejiang University, China), Chairperson: Yasuaki TOKUDOME (Osaka Prefecture University, Japan)  
9:20 AM - 11:00 AM Room E (2F, Conference Room III)

[8E-E4-01] [INVITED] Preparation and properties of As, Se-free chalcogenide glasses based on Ga/Ge-Sb-S-Te systems  
*Kohei KADONO¹, Tomoyo ASHIDA¹, Misaki KIZU¹, Anifumi OKADA¹, Takashi WAKASUGI³ (1. Kyoto Institute of Technology(Japan))  
9:20 AM - 9:40 AM

[8E-E4-02] [INVITED] Photoinduced polarization-dependent nanostructures in various material and their applications  
*Yasuhiro SHIMOTSUMA¹ (1. Kyoto University(Japan))  
9:40 AM - 10:00 AM

[8E-E4-03] Making directional light sources by using...
Directional outcoupling of photoluminescence via excitation of collective plasmonic modes on periodic plasmonic arrays

Collective plasmonic modes excited on Al nanocylinder array in the UV region and photoluminescence enhancement from Eu(III)-complex thin film

Oral presentation | E | E-4:Optical Materials

[8E-E4-04] Directional outcoupling of photoluminescence via excitation of collective plasmonic modes on periodic plasmonic arrays

[8E-E4-05] Collective plasmonic modes excited on Al nanocylinder array in the UV region and photoluminescence enhancement from Eu(III)-complex thin film
4:05 PM - 4:25 PM

[BE-E4-14] Synthesis of Co-Al layered double hydroxide nanoparticles with catalytic properties for the reduction of dye molecules in the aqueous media
*Daisuke KINO1, Yasuaki TOKUDOME1, Masahide TAKAHASHI1 (1. Department of Materials Science, Graduate School of Engineering, Osaka Prefecture University(Japan))
4:25 PM - 4:45 PM

*Naoki TARUTANI1, Yasuaki TOKUDOME2, Matias JOBBÁGY3, Galo J. A. SOLER-ILLIA4, Masahide TAKAHASHI1 (1. Hosei University(Japan), 2. Osaka Prefecture University(Japan), 3. Universidad de Buenos Aires(Argentine), 4. Universidad Nacional de General San Martin(Argentine))

Room F

Oral presentation | E | E-7:Magnetic, Electric, Dielectric and Thermolectric Materials

Chairperson: Naohito TSUJII (National Institute for Materials Science, Japan), Chairperson: Atsunobu MASUNO (Hirosaki University, Japan)
9:15 AM - 11:40 AM Room F (2F, Conference Room IV)

[BF-E7-01] [INVITED] Comparison on different ways to enhance the coercivity of hot deformed Nd13Fe14B-type magnets
*Wen Cheng CHANG1, Y I Lee1, B S Liao1, Y J Wong1, H W Chang1, C C Shaw2 (1. Physics Department, National Cheng Cheng University(Taiwan), 2. Superrite Electronics Co. Ltd.(Taiwan))
9:15 AM - 9:40 AM

[BF-E7-02] [INVITED] Control of cobalt content in La-Co substituted magnetoplumbite-type strontium ferrite
*Hiroyuki Nakamura1, Shusuke Okazaki1, Takeshi Waki1, Yoshikazu Tabata1, Masaki Kato2, Ken Hirota2 (1. Kyoto University(Japan), 2. Doshisha University(Japan))
9:40 AM - 10:00 AM

[BF-E7-03] Charge ordering patterns in A-site ordered/disordered triple perovskites with unusually high valence Fe3+6
*Haichuan GUO1, Yoshiteru HOSAKA1, Fabio ROMERO3, Takashi SAITO1, Noriya ICHIKAWA1, Yuichi SHIMAKAWA1 (1. Institute for Chemical Research, Kyoto University(Japan))
10:00 AM - 10:20 AM

[BF-E7-04] High pressure synthesis of Sr0.8Bi0.2FeO3
*Peng XIONG1, Yoshiteru HOSAKA1, Fabio Denis ROMERO1, Takashi SAITO1, Yuichi SHIMAKAWA1 (1. Institute for Chemical Research, Kyoto University(Japan))
10:20 AM - 10:40 AM

[BF-E7-05] [INVITED] Metal-insulator crossover in Pb-Ru based oxides with pyrochlore-type structure
*Masaki KATO1, Kazuya IWAMOTO1, Yuki IWAKURA1, Ken HIROTA1, Angel AREVALO-LOPEZ1, Paul ATTFIELD2 (1. Doshisha University(Japan), 2. University of Edinburgh(UK))
10:40 AM - 11:00 AM

[BF-E7-06] High Pressure Synthesis of New Hexagonal Perovskites BaFe11N11O30
*Zhenhong TAN1, Takashi SAITO1, Yuichi SHIMAKAWA1 (1. Institute for Chemical Research, Kyoto University(Japan))
11:00 AM - 11:20 AM

[BF-E7-07] [INVITED] Ferromagnetic interactions in rutile-related Cr(IV) oxides
*Hiroya SAKURAI1 (1. National Institute for Materials Science(Japan))
11:20 AM - 11:40 AM

Oral presentation | E | E-7:Magnetic, Electric, Dielectric and Thermolectric Materials

Chairperson: Yuichi SHIMAKAWA (Kyoto University, Japan), Chairperson: Hiroki NAKANO (University of Hyogo, Japan)
1:00 PM - 3:10 PM Room F (2F, Conference Room IV)

[BF-E7-08] [INVITED] Ferromagnetic interactions in rutile-related Cr(IV) oxides
*Hiroya SAKURAI1 (1. National Institute for Materials Science(Japan))
11:20 AM - 11:40 AM
1:00 PM - 1:20 PM  [8F-E7-9] [INVITED] Approaching efficient thermoelectrics: from materials to modules
"Lidong Chen\(^1\) (1. Shanghai Institute of Ceramics, CAS(China))
1:20 PM - 1:45 PM

[8F-E7-10] Synthesis of morphology controlled n-type Mg\(_2\)Si/CNT thermoelectric nanofibers
"Keiko Kikuchi\(^1\), Naoyuki Nomura\(^1\), Akira Kawasaki\(^1\)
(1. Tohoku University(Japan))
1:45 PM - 2:05 PM

[8F-E7-11] Effects of Cu addition to Si precipitations in \(\beta\)-FeSi\(_2\)/Si composite and its thermoelectric properties
"farah liana binti MOHD REDZUAN\(^1\), Mikio ITO\(^1\) (1. Materials and Manufacturing Science, Graduate School of Engineering, Osaka University(Japan))
2:05 PM - 2:25 PM

[8F-E7-12] [INVITED] Densely packed oxide glasses with optical and mechanical functionalities prepared by a levitation technique
"Atsunobu MASUNO\(^1\) (1. Hirosaki University(Japan))
2:25 PM - 2:45 PM

[8F-E7-13] [INVITED] Solid State Metal (oxy)nitride Functional Materials
"Minghui YANG\(^1\) (1. Ningbo Institute of Industrial Technology (CNITECH) Chinese Academy of Sciences (China))
2:45 PM - 3:10 PM

Oral presentation | E | E-7:Magnetic, Electric, Dielectric and Thermoelectric Materials

Chairperson: Kazuyoshi YOSHIMURA (Kyoto University, Japan), Chairperson: Hiroya SAKURAI (National Institute for Materials Science, Japan)
3:30 PM - 4:35 PM Room F (2F, Conference Room IV)

[8F-E7-14] [INVITED] The destabilization of the ferrimagnetic ground state of a spin-1/2 Heisenberg antiferromagnet owing to frustrations
"Hiroki NAKANO\(^1\) (1. University of Hyogo(Japan))
3:30 PM - 3:50 PM

[8F-E7-15] [INVITED] Exploration of New Dirac/Weyl Semimetals
"Minghu FANG\(^1\) (1. Department of Physics, Zhejiang University(China))
3:50 PM - 4:15 PM

[8F-E7-16] [INVITED] NMR Study on Pd and Ru Nanoparticles
"Kenji ISHIDA\(^3\), S. KITAGAWA\(^1\), M. MANAGO\(^1\), K. YONEKAWA\(^1\), K. KUSADA\(^2\), H. KOBAYASHI\(^3\), H. KITAGAWA\(^2\) (1. Department of Physics, Graduate School of Science, Kyoto University(Japan), 2. Department of Chemistry, Graduate School of Science, Kyoto University(Japan))
4:15 PM - 4:35 PM

Chairperson: Kazuki NAKANISHI (Kyoto University, Japan),
Chairperson: Miki INADA (Kyushu University, Japan)
9:20 AM - 10:40 AM Room B (2F, International Conference Hall I)

[9B-E1-01] [INVITED] Noble metal nanoparticles embedded in hierarchically porous monolithic oxide support for flow-through catalysis
*Kazuki NAKANISHI1, Kazuyoshi KANAMORI2, Toshiyuki KAMEI2, Toyoshi SHIMADA2 (1. Dept. Chemistry, Graduate School of Science, Kyoto University(Japan), 2. Nara National College of Technology(Japan))
9:20 AM - 9:40 AM

[9B-E1-02] [INVITED] Fabrication of spherical mesoporous silica-titania via microwave-emulsion method
*Miki INADA1, Junichi HOJO2 (1. Center of Advanced Instrumental Analysis, Kyushu University(Japan), 2. Faculty of Engineering, Kyushu University(Japan))
9:40 AM - 10:00 AM

[9B-E1-03] Mechanical properties of porous structures produced by SLM of a Ti6Al4V alloy powder
*Alberto MOLINARI1, Johanna KLARIN2,1, Frida JOHANSSON2,1, Matteo BENEDETTI1, Vigilio FONTANARI1, Emanuele MAGALINI3, Valerio LUCHIN2, Gianluca ZAPPINI1 (1. University of Trento(Italy), 2. University of Jonkoping(Sweden), 3. Eurocoating SpA, Trento(Italy))
10:00 AM - 10:20 AM

[9B-E1-04] Formation of nanoporous Fe-based alloy by solid state interfacial dealloying reaction
*Takeshi WADA1, Hidemi KATO1 (1. Institute for Materials Research, Tohoku University(Japan))
10:20 AM - 10:40 AM

[9B-E1-05] Cancelled
10:40 AM - 10:59 AM

[9C-D4] Additive Manufacturing with Powder Metallurgy
Chairperson: Hideshi MIURA (Kyushu University, Japan),
Chairperson: Soshu KIRIHARA (Osaka University, Japan)
9:20 AM - 11:25 AM Room C (2F, International Conference Hall II)

[9C-D4-01] [INVITED] Distortion of thin wall structures in laser powder bed fusion additive manufacturing
9:20 AM - 9:45 AM

[9C-D4-02] [INVITED] Parameter Optimization on the Fabrication of Aluminum Alloy Using Selective Laser Melting Process
Shinnosuke KUSAKAWA1, Masahiro ARAKI2, Kazuhiro NAKAMURA2, Makiko YONEHARA1, Toshi-Taka IKESHOJI1, *Hideki KYOGOKU1 (1. Kindai University(Japan), 2. TRAFAM(Japan))
9:45 AM - 10:05 AM

[9C-D4-03] Microstructures and mechanical properties of A356 aluminum alloy fabricated using selective laser melting
*Takahiro KIMURA1, Takayuki NAKAMOTO1, Kazuki SUGITA2, Masataka MIZUNO2, Hideki ARAKI2 (1. Osaka Research Institute of Industrial Science and Technology(Japan), 2. Osaka University(Japan))
10:05 AM - 10:25 AM

[9C-D4-04] Effects of Zr content on the microstructures and mechanical properties of Cu-Cr-Zr alloy builds fabricated by powder bed fusion process using fiber laser
*Naoyuki NOMURA1, Takayuki KAWASAKI1, Shinichi MORIYA2, Takayuki NAKAMOTO2, Takahiro KIMURA2, Keiko KIKUCHI1, Akira KAWASAKI1 (1. Tohoku University(Japan), 2. Japan Aerospace Exploration Agency(Japan), 3. Osaka Research Institute of Industrial Science and Technology(Japan))
10:25 AM - 10:45 AM
The study on improvement of the tensile strength for building direction of the parts fabricated by using inkjet technique and resin coated powder

*Shinichiro Sato1, Shin Mizutani1, Yuta Koike1, Daichi Yamaguchi1, Takafumi Sasaki1 (1. RICOH COMPANY, LTD.(Japan))
10:45 AM - 11:05 AM

Precision and complex parts fabricated by Selective Laser Melting (SLM) process

*Shinji Sakamoto1, Msayuki Matsui1, Takahiro Komatsu1, Yoshinori Ito, katsuhiko Sakai, Hiroo Shizuka (1. Nissei Electric Co.(Japan))
11:05 AM - 11:25 AM

Assessing hot deformation mechanisms in cemented carbides using crystal orientation and other electron imaging techniques

*Bryan Roebuck1, Ken Mingard1 (1. National Physical Laboratory(UK))
9:20 AM - 9:45 AM

Metal Cutting of Difficult-to-Cut Materials

*Toshiyuki Takahashi1 (1. Tungaloy corporation(Japan))
9:45 AM - 10:05 AM

Influence of microstructure on the thermal conductivity of cemented carbides

*Akira ONO1, Kazuki OKADA1, Hisashi HOMMA1, Yukito NAKANISHI1 (1. Mitsubishi Materials Corporation(Japan))
10:05 AM - 10:25 AM

Investigation of interface reaction of WC/Co using diffusion couple technique

*Hiroyuki NAKAYAMA1, Kimihiro OZAKI1, Yasuhiro MUKAIDE2 (1. National Institute of Advanced Industrial Science and Technology(Japan), 2. NOTOALLOY Co., Ltd(Japan))
10:25 AM - 10:45 AM

Influence of the Al content on microstructure of CVD Aluminum Titanium Nitride coatings

*Sho Tatsuoka1, Takuya Ishigaki1, Kenichi Sato1, Kosuke Yanagisawa1, Kenji Yamaguchi1, Shin Nishida1 (1. Mitsubishi Materials Corporation(Japan))
10:45 AM - 11:05 AM

Toughening and strengthening of Al2O3/Ba-β-Al2O3/m-ZrO2 composites with TZP addition

*Lei LIU1, Kenta SAKURAGAWA1, Yu TAKASU1, Kensaku MAEDA1, Tetsuhiko ONDA1, Zhong-Chun CHEN1 (1. Department of Mechanical and Aerospace Engineering, Graduate School of Engineering, Tottori University(Japan))
11:05 AM - 11:25 AM

Current status of PM Aluminum in Europe and the US

J.Gradv1, *Bernhard MAIS1 (1. Kymera International, ECKA Granules Germany GmbH (Germany))
9:20 AM - 9:45 AM

Solid solution strengthening mechanisms of PM α-Ti materials with zirconium and oxygen atoms via thermal decomposition of ZrO2 additives in sintering

*Mizuki FUKUO1, Shota KARIYA1, Junko UMEDA1, Katsuyoshi KONDOH1 (1. Joining and Welding Research Institute Osaka University(Japan))
10:10 AM - 10:30 AM

©the Japan Society of Powder and Powder Metallurgy
[9E-A5-04] Strengthening mechanism of α-Ti materials by synergy effect of substitutional and interstitial solid solution via powder metallurgy  
*Shota KARIYA¹, Mizuki FUKUO¹, Junko UMEDA¹, Masato YOSHIYA², Katsuyoshi KONDOH¹ (1. JWRI, Osaka University(Japan), 2. Department of Adaptive Machine Systems, Osaka University(Japan))
10:30 AM - 10:50 AM

[9E-A5-05] Wear resistance of the developed TiB reinforced titanium metal matrix composites fabricated via blended elemental powder metallurgy process  
*Katsuom Shiba¹, Yoshihisa Ueda¹, Tadahiko Furuta² (1. FINE SINTER CO., LTD.(Japan), 2. TOYOTA CENTRAL R&D LABS., INC.(Japan))
10:50 AM - 11:10 AM

[9E-A5-06] Development of tungsten containing neodymium oxide, an Alternative Material for ThO₂-W Used for Plasma Cathodes  
*Tatsuya MOURI¹, Kouji FUJII¹, Katsuyuki MORII², Tadao UETSUKI³, Takayuki WATANABE⁴ (1. Nippon Tungsten Co., Ltd.(Japan), 2. HIMEJI RKA Co., Ltd.(Japan), 3. TSUYAMA National College of Technology(Japan), 4. KYUSHU University(Japan))
11:10 AM - 11:30 AM

Room F

Oral presentation | E | E-7:Magnetic, Electric, Dielectric and Thermoelectric Materials

Chairperson: Hiroyuki NAKAMURA (Kyoto University, Japan), Chairperson: Masaki KATO (Doshisha University, Japan)
9:45 AM - 11:25 AM Room F (2F, Conference Room IV)

[9F-E7-05] Development of Yoke of torque sensor with high performance, cost-benefit, and high quality  
*Rie SUZUKI¹, Nobuya AMANO¹, Yoshiyuki SHIMADA¹, Makoto KIKUCHI¹ (1. Sumitomo Electric Sintered Alloy, Ltd.(Japan))
9:45 AM - 10:00 AM

[9F-E7-01] Effect of distortion on magnetic properties of Nd-Fe-B thin film magnets on BaTiO₃  
*Ryuu HASHIMOTO¹, Takuya SATO¹, Yuji UMEDA¹, Kenichi SUZUKI¹, Yasushi ENOKIDO¹, Tomoyasu TANIYAMA² (1. TDK Corporation(Japan), 2. Tokyo Institute of Technology(Japan))
10:05 AM - 10:25 AM

[9F-E7-02] Magnetic Properties in High Frequency Region for Nano-crystal Powder Core of Fe-Si-B-Nb-Cr-Cu System  
*Seiichi SAIJO¹, Nobuhito CHUJO¹, Toshifumi AOYAMA¹, Masakatsu FUKUDA¹ (1. Mitsubishi Steel Mfg. Co., Ltd.(Japan))
10:25 AM - 10:45 AM

[9F-E7-03] Influence of Microstructure on Coercive Force of Pure Iron Powder Cores  
*Takuya Takashita¹, Naomichi Nakamura¹ (1. JFE steel corporation(Japan))
10:45 AM - 11:05 AM

[9F-E7-04] Formation of (001) fiber texture on platelet iron particles using ball milling process  
*Satoshi MOTOZUKA¹, Hisashi SATO² (1. National Institute of Technology, Gifu College(Japan), 2. Nagoya Institute of Technology(Japan))
11:05 AM - 11:25 AM
Poster Session

Core Time: Nov. 7 (Tue)

Odd number; 19:00-19:45
Even number; 19:45-20:30

*Igor Shishkovsky¹ (1. P.N. Lebedev Physics Institute of Russian Academy of Sciences, Samara branch(Russia))

[P-A2] Sintering and Post Processing

[P-A2-01] Effect of Superheated Steam Amount on Rapid Debinding of Alumina Molded Bodies

[P-A3] Spark Plasma Sintering

[P-A3-01] Effect of electrical property of graphite die on sintering behavior of Spark Plasma Sintering process
*Tatsuya MISAWA¹, Yuji KAWAKAMI², Masakazu KAWAHARA³ (1. Saga University (Japan), 2. Kurume National Collage of Technology(Japan), 3. Kawahara SPS Technical Office(Japan))

[P-A3-02] Control of temperature distribution in sintering die on Multi-Axis Current Sintering process
*Yuya MAEDA¹, Tatsuya MISAWA¹, Kenichi SUNAMOTO² (1. Saga University(Japan), 2. Akane Co., Ltd.(Japan))

[P-A3-03] Electrochemical Characteristics of Titanium-Manganese Oxide Composites Synthesized through SPS and PLD Techniques
*Thato Sharon TSHEPHE¹, Peter OLUBAMBI², Kenneth OZOEMENA³, Iakovos SIGALAS⁴ (1. Department of Metallurgical Engineering, University of Johannesburg, Johannesburg 2006(South Africa), 2. Department of Chemical Engineering, University of Johannesburg, Johannesburg 2006(South Africa), 3. School of Chemistry, University of the Witwatersrand, Wits 2050(South Africa), 4. School of Chemical and Metallurgical Engineering, University of the Witwatersrand, Wits 2050(South Africa))

[P-A4] Iron and Steel Materials

[P-A4-01] Characterization of High Strength ODS Ferritic Stainless Steels Fabricated by Mechanical Alloying and Uniaxial Hot Pressing Processes
*Sanghoon NOH¹, Ga Eon KIM¹, Suk Hoon KANG¹, Jinsung JANG¹, Tae Kyu KIM¹ (1. Korea Atomic Energy Research Institute(Korea))

[P-A4-02] Microstructures and Mechanical Properties of Cross Rolled ODS Steel Plates for Advanced Nuclear Applications
*Sanghoon NOH¹, Suk Hoon KANG¹, Tae Kyu KIM¹ (1. Korea Atomic Energy Research Institute(Korea))

[P-A4-03] Fabrication of nano-scale oxide dispersed strengthened iron by solution combustion process and spark plasma sintering
*Minli Qin¹, Deyin Zhang¹, Haiqing Yin¹, Baorui Jia¹, Haoyang Wu¹, Yuxiao Wang¹, Xuanhui Qu¹ (1. Institute for Advanced Materials and Technology, University of Science and Technology Beijing(China))

[P-A4-04] Oxidation behavior of highly concentrated TiC-SKD11 composite fabricated by a liquid pressing infiltration process
*Seungchan CHO¹, Ilguk JO¹, Yeonghwan LEE¹, Sangmin SHIN¹, Donghyun LEE¹, Sang-Bok LEE¹, Sang-Kwan LEE¹ (1. Korea Institute of Materials Science (KIMS))(Korea)
[P-A5] Non-ferrous Materials

[P-A5-01] Direct joining between metal and polymer using protruding anchor layer fabricated by laser-induced combustion synthesis

*Seung Gwang Kim1, Asuka Suzuki2, Naoki Takata2, Makoto Kobashi2 (1. Graduate student, Nagoya University (Japan), 2. Graduate school of Engineering, Nagoya University (Japan))

[P-B1] Hard Materials

[P-B1-01] Development of MgO-based ceramics with excellent corrosion resistance against plasma etching

*Takashi Ikeda1, Yuji Kasashima2, Fumihiko Uesugi2, Kota Tsutsumi1 (1. NIPPON TUNGSTEN CO., LTD. (Japan), 2. Advanced Manufacturing Research Institute, National Institute of Advanced Industrial Science and Technology (AIST) (Japan))

[P-B1-02] Investigation of Acoustic Wave activated under Microwave Irradiation in Polycrystalline Ceramics

*Sadatsugu Takayama1, Motoyasu Sato2 (1. National Institute for Fusion Science (Japan), 2. Chubu University (Japan))

[P-B1-03] Development for CC Anvilroll

*Takahiro Yoshihara1 (1. Nippon Tungsten Co., Ltd. (Japan))


*Takumi Tazawa1, Keiichiro Takahashi1, Satofumi Maruyama1, Takuya Fujima1, Naoto Shiraki1 (1. Tokyo City University (Japan))


*Hiroyuki Hosokawa1, Kiyotaka Kato1, Koji Shimojima1 (1. National Institute of Advanced Industrial Science and Technology (Japan))

[P-C1] Synthesis, Processing, and Properties of Powder

[P-C1-01] Effect of dispersed Ta2O5 nanoparticles on thermoelectric property of Bi2Sb2Te3 alloy

*MyeongWon Lee1, EunBin Kim1, KapHo Lee2, JarMyung Koo1, SoonJik Hong1 (1. Division of Advanced Materials Engineering, Kongju National University, 275, Budae-dong, Cheonan City, Chungcheongnam-do, 330-717, Republic of Korea (Korea), 2. Department of Nano Materials Engineering, Chungnam University, Daejeon 304-764, Republic of Korea (Korea))

[P-D1] Powder Compaction

[P-D1-01] Data analysis and prediction of the green density in high velocity compaction

Zhang Kaiqi1, * Yin Haiqin1,2, Jiang Xue1, Deng Zhenghua3,1, Qu Xuanhui1 (1. University of Science and Technology Beijing (China), 2. Kennametal Inc (United States of America), 3. Chongqing Three Gorges University (China))
[P-D2] Powder Forging, Rolling, Extrusion

[P-D2-01] Microstructure and mechanical properties of extruded hyper eutectic Al-Si alloy
*SU SEONG AHN¹, CHANG HYUN BAEG², KAP HO LEE³, JAR MYUNG KOO¹, SOON JIK HONG¹ (1. Konju National University College of Engineering, Dept. of Advanced Material Science and Engineering, Korea, 2. DONGYANG A.K KOREA CO., LTD(Korea), 3. Chungnam National University Department of Materials Science & Engineering(Korea))

[P-D3] PIM (Powder Injection Molding)

[P-D3-01] FABRICATION OF COPPER/GRAPHENE COMPOSITE THROUGH POWDER INJECTION MOLDING
Natasha Emira Azaman¹, Farhana Mohd Foudzi¹, *Norhamidi Muhamad¹, Abu Bakar Sulung¹, Muhammad Rafi Raza² (1. Universiti Kebangsaan Malaysia(Malaysia), 2. COMSATS Institute of Information Technology(Pakistan))

[P-D4] Additive Manufacturing with Powder Metallurgy

[P-D4-01] Selective laser sintering of Ti-6Al-4V powder with different parameter conditions
*THUYET MINH NGUYEN¹, JIN-CHUN KIM¹, JIN-HUNG KIM¹, DONG-WAN LEE¹ (1. School of Materials Science and Engineering, University of Ulsan, Korea(Korea))

[P-D4-02] Heat transfer and dendrite growth kinetics in titanium alloys during electron beam melting
*Igor Shishkovsky¹ (1. P.N. Lebedev Physics Institute of Russian Academy of Sciences, Samara branch(Russia))

[P-D4-03] Microstructure Studies of Alumina Micro Particles Reinforced Inconel 625 Superalloy Produced by Selective Laser Melting
*Pei WANG¹ (1. Institute of Materials Research and Engineering(Singapore))

[P-E1] Alloys, Composites, and Hybrids/Nanoparticles and Porous Materials

[P-E1-01] Microstructure and Tensile Behavior of Hot Isostatically Pressed TiC-SKD11 Composite
*Seong-Ju Park¹, Seung-Chan Cho², Sang-Kwan Lee², Dae-Ha Kim³, Keum-Cheol Hwang², Hyun-Uk Hong¹ (1. Department of Materials Science and Engineering, Changwon National University, 20 Changwondoehak-ru, Changwon, Gyeongnam 641-773, Republic of Korea(Korea), 2. Composites Research Division, Korea Institute of Materials Science, 797 Changwondaero, Changwon, Gyeongnam 641-831, Republic of Korea(Korea), 3. Daewha Alloytech, 17-60 Sanupdanji-gil, Dangjin, Chungnam 343-882, Republic of Korea(Korea))

[P-E1-02] Study on joining process of sulfide dispersed bronze and steel plate
*Hirokazu Yamasaki¹, Tomohiro SATO², Masanori TAKUMA², Kenichi SAITOH², Yoshimasa TAKAHASHI² (1. Graduate school, Kansai university(Japan), 2. Kansai university Faculty of Mechanical Engineering(Japan))

[P-E1-03] Thermal Expansion Coefficient of Yttrium Silicates Ceramics and Their Composites Dispersed with SiC Particles
*HUY DINH VU¹, Makoto NANKO¹ (1. Mechanical Engineering Department, Nagaoka University of Technology, Nagaoka, Niigata(Japan))

[P-E1-04] Fabrication of Tin Oxide-Carbon Nano Composite for Energy Applications heated by Microwave

* indicates the corresponding author.
[P-E1-05] **Processing and characterization of multi-walled carbon nanotube - ZrB$_2$ ceramic matrix composite**

Wenwen Wu$^1$, Mehdi ESTILI$^1$, Guo-Jun ZHANG$^2$, Yoshio SAKKA$^1$ (1. NIMS(Japan), 2. Donghua University(China))

---

[P-E1-06] **Utilizing rice husk for ceramic foams as matrix and foaming agent**

Chiaki Matsuoka$^1$, Takashi Teranishi$^1$, Hidetaka Hayashi$^1$, *Akira Kishimoto$^1$ (1. Okayama University(Japan))

---

[P-E1-07] **Fundamental Study on Functionality of Synthetic Sulfides**

*Shuhei ISHIKAWA$^1$, Tomohiro SATO$^2$, Masanori TAKUMA$^2$, Kenichi SAITO$^2$, Yoshimasa TAKAHASHI$^2$ (1. Kansai University Graduate School of Science and Engineering(Japan), 2. Kansai University Faculty of Engineering Science(Japan))

---

[P-E1-08] **Fabrication of porous TiB$_2$/Fe composite on iron substrate utilizing combustion synthesis reaction**

*Kazuki NORITAKE$^1$, Asuka SUZUKI$^2$, Naoki TAKATA$^2$, Makoto KOBASHI$^2$ (1. graduate student, Nagoya University(Japan), 2. graduate school of Nagoya University(Japan))

---

[P-E1-09] **Evaluation of sintering process of sinter-resistant copper alloy**

*Yasumasa SAWA$^1$, Tomohiro SATO$^2$, Masanori TAKUMA$^2$, Ken-ichi SAITO$^2$, Yoshimasa TAKAHASHI$^2$ (1. Graduate school, Kansai university(Japan), 2. Kansai university Faculty of Engineering Science(Japan))
**P-E3** Nano and Ultra-fine Materials

**P-E3-01** Fabrication of 3D controllable pattern containing clusters and nanoparticles inside a solid material  
Qiuqun Chen¹, *Jianrong Qiu¹ (1. South China University of Technology(China))

**P-E3-02** Observation of domain wall segment jump among disorders  
*Takuya Taniguchi¹, Kab-Jin Kim¹,², Tomohiro Koyama³, Daichi Chiba³, Teruo Ono¹,⁴ (1. ICR, Kyoto University(Japan), 2. Department of Physics, KAIST(Korea), 3. Department of Applied Physics, The University of Tokyo(Japan), 4. CSRN, Graduate School of Engineering Science, Osaka University(Japan))

**P-E4** Optical Materials

**P-E4-01** Two-dimensional GeSe as an isostructural and isoelectronic analog of phosphorene: sonication-assisted synthesis, chemical stability and optical properties  
*Yuting YE¹, Qiangbing GUO¹, Xiaofeng LIU¹, Junjie WANG³, Jianrong QIU² (1. School of Materials Science &Engineering, Zhejiang University(China), 2. State Key Laboratory of Modern Optical Instrumentation, College of Optical Science and Engineering, Zhejiang University(China), 3. Materials Research Center for Element Strategy, Tokyo Institute of Technology(Japan))

**P-E4-02** Mesoscale Engineering of Photonic Glass for Tunable Luminescence  
*Yong ze Yu¹, Jian rong Qiu¹, Shi feng Zhou¹ (1. South China University of Technology(China))

**P-E4-03** Tunable long persistent luminescence in the second near-infrared window via ligand field control  
*Jianmin Nie¹, Jianrong Qiu¹ (1. South China University of Technology(China))

**P-E4-04** Optical and thermal properties of paints mixed with metal-coated glass flakes  
*Yuya KODATE¹, Atushi ARUGA¹, Yoichi OKAMOTO¹,², Taishi OZAKI¹ (1. National Defense Academy, Dept. of Materials Science and Engineering(Japan), 2. NIMS Mi2i project(Japan))

**P-E4-05** Integrated strategy for high luminescence intensity of upconversion nanocrystals  
*Yue Yang¹, Yingbin Zhu², Jiajia Zhou¹, Fan Wang³, Jianrong Qiu¹ (1. Zhejiang University(China), 2. Singapore University of Technology and Design(Singapore), 3. University of Technology, Sydney(Australia))

**P-E4-06** Enhanced Nonlinear Optical Properties from Plasmon Resonances in Two-Dimensional Molybdenum Oxide Nanosheets  
*Weiqi WANG¹, Xiaofeng LIU¹, Jianrong QIU² (1. School of Materials Science and Engineering, Zhejiang University(China), 2. College of Optical Science and Engineering, Zhejiang University(China))

**P-E4-07** Aluminum-phosphor composite for high-power laser lighting  
*JEHONG PARK¹, Kwangjae PARK², Akira KAWASAKI³, Hansang KWON²,¹ (1. Next Generation Materials Co., Ltd.(Korea), 2. Pukyong National University(Korea), 3. Tohoku University(Japan))

**P-E4-08** Structure and optical properties of Er-doped CaO-Al₂O₃(Ga₂O₃) glasses fabricated by aerodynamic levitation  
*Cheng Xu¹, Xiaofeng LIU¹, Jianrong Qiu¹ (1. Zhejiang University(China))

**P-E4-09** A Highly Symmetrical Graded Refractive Index Glass Fiber Fabricated by Melt-in-Tube Method  
*Ming ZHANG¹ (1. State Key Laboratory of Luminescent Materials and Devices, South China University of Technology(China))
[P-E4-10] **Tunable epsilon-near-zero medium based on colloidal nanocrystals for ultrafast all-optical modulation**  
*Qiangbing GUO1, Xiaofeng LIU1, Jianrong QIU1* (1. Zhejiang University(China))

---

[©the Japan Society of Powder and Powder Metallurgy]
[P-E7-09] Quantum criticality of Yb₂Ge₆ (Γ = Cr, Mn, Co) originated in magnetism of T

*Masahito HIKUI1, Hayato KATSUMA1, Chishiro MICHIOKA1, Hiroaki UEDA1, Akira MATSUO2, Koichi KINDO2, Naoto TSUJI3, Hitoshi YAMAOKA4, Kazuyoshi YOSHIMURA1 (1. Department of Chemistry, Graduate School of Science, Kyoto University(Japan), 2. The Institute for Solid State Physics, The University of Tokyo(Japan), 3. National Institute for Materials Science(Japan), 4. RIKEN SPing-8 Center(Japan))

[P-E7-10] Co NMR study of itinerant magnets RCo₅Si₄ ( R=Y, La)

*Joichi MURAKAWA1, Hibiki KANAGAWA1, Herwig MICHIR2, Chishiro MICHIOKA1, Hiroaki UEDA1, Kazuyoshi YOSHIMURA1 (1. Division of Chemistry, Graduate School of Science, Kyoto University(Japan), 2. T.U. Wien(Austria))

[P-E7-11] Microstructure and Thermoelectric Properties of Bi₄₆Sb₈₆Te₁ prepared by Pulse-Current Sintering under Cyclic Uniaxial Pressure

*Ayako Suzuki1, Hiroyuki Kitagawa1, Shota Ido1, Anh Hoang Pham1, Shigezuki Morito1, Takao Etoh2, Kotaro Kikuchi2 (1. Shimane University(Japan), 2. S. S. Alloy Co., Ltd.(Japan))

[P-E7-12] Electric Field Effect on Exchange Interaction in Co/Pt Thin Film

*Mio ISHIBASHI1, Kihiro Torazawa YAMADA1, Fuyuki ANDO1, Tomohiro KOYAMA2, Haruka KAKIZAKAI1, Hayato MIZUNO1, Kazumoto MIWA1, Shimpei ONO1, Takahiro MORIYAMA1, Daichi CHIBA1, Teruo ONO1 (1. Institute for Chemical Research(Japan), 2. Department of Applied Physics, The University of Tokyo(Japan), 3. Central Research Institute of Electric Power Industry(Japan))

[P-E7-13] Finite Element Simulation on Thermoelectric Performance of Tilted MgSi/Ni Multilayer Composites

*Takashi ITOH1 (1. Nagoya University(Japan))

[P-E7-14] Electric field-induced modulations of anomalous Hall effect in an itinerant ferromagnet SrRuO₃

*Hayato Mizuno1, Kihyo Yamada1, Daisuke Kan1, Takahiro Moriyama1, Yuichi Shimakawa1, Teruo Ono1,2 (1. Kyoto University(Japan), 2. Center for Spintronics Research Network(Japan))

[P-E7-15] Current Density Dependence of Asymmetric Magnetoresistance in Pt/Pt Bilayers Under Various Magnetic Field Strength

*Tian Li1, Sanghoon Kim1, Seung-Jae Lee2, Seo-Won Lee3, Tomohiro Koyama4, Daichi Chiba4, Takahiro Moriyama3, Kyung-Jin Lee2,3, Kab-Jin Kim1,5, Teruo Ono1,6 (1. Inst. for Chemical Res., Kyoto Univ. (Japan), 2. KU-KIST Graduate School of Converging Sci. and Tech., Korea Univ.(Korea), 3. Department of Materials Sci. and Eng., Korea Univ.(Korea), 4. Department of Applied Physics, Faculty of Eng., Univ. of Tokyo(Japan), 5. Department of Physics, Korea Advanced Indus. of Sci. and Tech. (Korea), 6. Center for Spintronics Res. Network (CSRN), Graduate School of Eng. Sci., Osaka Univ.(Japan))

[P-E7-16] Effect of Metal Particle Flattening on Electrical Conductive Property of Glass - Metal Composite Materials

*Hiroyuki Ishihara1, Hiroyuki Kitagawa1, Ryota Mriwaki1, Hiromichi Katsuyama1, Daiki Hamano1, Shinji Harui2, Yoshiharu Waku2,3 (1. Shimane University(Japan), 2. Suzuki Gokin Co., Ltd.(Japan), 3. Tohoku University(Japan))

[P-E7-17] Temperature dependence of magnetoresistance in ferrimagnetic GdFeCo/Pt heterostructure

*Takuya OKUNO1, Kab-jin KIM1,2, Takayuki TONO1, Sanghoon KIM1, Hiroki YOSHIKAWA2, Atsushi TSUKAMOTO1, Takahiro MORIYAMA1, Teruo ONO1 (1. ICR, Kyoto University(Japan), 2. KAIST(Korea), 3. Nihon University(Japan))

[P-E7-18] Phase formation and transport properties of AlMgB₁₄ based material

*Yuri NAKAMURA1, Satofumi MARUYAMA1, Takuya FUJIMA1 (1. Tokyo City University(Japan))
[P-E7-19] Temperature dependence of spin orbit effective fields in Pt/GdFeCo
*Woo Seung HAM1, Sanghoon KIM1, Duck-Ho KIM1, Kab-Jin KIM1,2, Takaya OKUNO1, Hiroki YOSHIIKAWA3, Arata TSUKAMOTO1, Takhiro MORIIYAMA1, Teruo ONO1 (1. Institute for Chemical Research, Kyoto University(Japan), 2. Department of Physics, Korea Advanced Institute of Science and Technology(Korea), 3. College of Science and Technology, Nihon University(Japan))

*Hyounig-Won SON1,2, Quansheng GUO1, Takao MORI1,2 (1. National Institute for Materials Science International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), Namiki 1-1, Tsukuba, Ibaraki(Japan), 2. Graduate School of Pure and Applied Sciences, University of Tsukuba, 1-1-1 Tennodai, Tsukuba, Ibaraki(Japan))

[P-E7-21] Spin Hall effect in ferromagnets measured by spin-torque FMR
*Kensho Tanaka1, Takahiro Moriyama1,2, Michinari Kamiya1, Kento Oda1, Hayato Mizuno1, Teruo Ono1,2 (1. Institute for Chemical Research, Kyoto University(Japan), 2. Center for Spintronics Research Network (CSRN), Graduate School of Engineering Science, Osaka University(Japan))

[P-E8] Electronic Components and Materials

[P-E8-01] High lithium-ion conducting solid electrolytes of the NASICON-type Li1.4Al0.4Ge0.2Ti4(PO4)3
*Nobuki Kyouno1, Daishuke Mori1, Yasuo Takeda1, Osamu Yamamoto1, Nobuyuki Imanishi1 (1. Mie University(Japan))

[P-E8-02] Lithium ion conductivity of the single crystal of Li10GeP2S12
*Rui IWASAKI1, Daigorou Hirai1, Zenji Hiroi1, Satoshi Hori2, Ryoji Kanno2 (1. Institute for Solid State Physics, University of Tokyo(Japan), 2. Tokyo Institute of Technology(Japan))

[P-E8-03] Low Temperature Synthesis, structure, and ionic conductivity of Garnet-Type Electrolyte Li6.25Al0.25La3Zr2O12
*Teruyuki AKANAI1, Daisuke MORI1, Yasauki MATSUDA2, Nobuyuki IMANISHI1 (1. Mie University(Japan), 2. Osaka Institute of Technology(Japan))

[P-E8-04] Lithium-ion conducting ceramic and polymer composite electrolytes for lithium batteries
*YUTA KOIZUMI1, Mengxuan Tang1, Yong-Gun Lee2, Daisuke Mori1, Yasuo Takeda1, Nobuyuki Imanishi1, Osamu Yamamoto1 (1. Mie University(Japan), 2. Samsung Electronics(Korea))

[P-E8-05] Electrode Performance of Neodymium Oxide-containing Tungsten in Argon Atmosphere
Akira MISHIMA1, Kouji FUJII1, Tatsuya MOURI1, Seiichi SHIMIZU1, *yasuki miyazaki1, Takayuki WATANABE2 (1. NIPPON TUNGSTEN CO.,LDT.(Japan), 2. KYUSHU UNIVERSITY(Japan))

[P-E8-06] Improvement in Dielectric Properties of Low Temperature Sintered Alumina Containing a Small Quantity of Cu-Nb-O Additive by Substitution of Titanium Dioxide
*Shinji KANEKO1, Koichi SHIGENO1, Tomoya YAMANE1, Junya SHIMOKAWA1, Hirotaka FUJIMORI2 (1. National Institute of Technology, Ube College (Japan), 2. Graduate School of Yamaguchi University(Japan))

[P-E8-07] The magnetic properties and microstructure of high density FeSiBPCu nanocrystalline alloy powder core
*Makoto YAMAKI1, Koichi OKAMOTO1, Akiri URATA1, Shoichi SATO1 (1. TOKIN Corporation(Japan))

[P-F] Aerospace Applications

[P-F-01] Fabrication of Anti-Reflection Structure for Ceramics using Microwave Sintering
*Sadatsugu Takayama¹, Tomotaka Matsumura², Suguru Takada¹ (1. National Institute for Fusion Science(Japan), 2. Kavli Institute for the Physics and Mathematics of Universe, The University of Tokyo(Japan))

[P-G] Energy Application, Environment

[P-G-01] Preparation and catalytic properties of composites by Pd-Zr-Ce amorphous alloys
*Masakuni Ozawa¹, Naoya Katsuragawa¹, Masatomo Hattori¹, Toshinobu Yogo¹, Shin-ichi Yamamura² (1. Nagoya University(Japan), 2. Tohoku University(Japan))

[P-G-02] Material Diffusion Stability at Interface Between Stabilized ZrO2 and CeO2 Interlayer
*Masakuni Ozawa¹, Ken-suKe Imura¹ (1. Nagoya University(Japan))

[P-G-03] An modeling of sintering behavior of CeO2 by master sintering curve analysis
*Masakuni Ozawa¹ (1. Nagoya University(Japan))

[P-G-04] Preparation, structure and photoluminescence properties of Eu-doped CeO2-ZrO2
*Masataka Kitagawa¹, Masakuni Ozawa¹ (1. Nagoya University(Japan))

[P-G-05] Preparation and photoemission properties of Eu-doped CeO2 nanoparticles
*Masashi Matsumoto¹, Masakuni Ozawa¹ (1. Nagoya University(Japan))

[P-G-06] Preparation and optical properties of rare earths co-doped ZrO2 nanoparticles
*Masashi Matsumoto¹, Yusuke Yoshimura¹, Masaya Amimoto¹, Masakuni Ozawa¹ (1. Nagoya University(Japan))

[P-G-07] Soot combustion and structural properties of CeO2-based nanoparticle catalysts
*Keita Nakamura¹, Masatomo Hattori¹, Koji Yokota¹, Masakuni Ozawa¹ (1. Nagoya University(Japan))

[P-G-08] Synthesis and evaluation of tobermorite from perlite using hydrothermal synthesis
*Makoto Kasai¹,², Yosei Kobayashi¹, Masakazu Togo², Atsushi Nakahira²,³ (1. Mitsui Mining & Smelting Co., Ltd. Perlite Division(Japan), 2. Department of Materials Science Biomaterial Group, Osaka Prefecture University(Japan), 3. Trans-Regional Corporation Center for Industrial Materials Research, IMR, Tohoku University(Japan))

[P-G-09] Effect of platinum addition on hydrogen oxidation over core-shell type CeO2/ZrO2 catalyst
*Masato Misaki¹, Masaki Iwakawa¹, Kouji Yokota², Masakuni Ozawa² ¹ (1. Department of Material Engineering, Nagoya University(Japan), 2. Institute of Materials and Systems for Sustainability, Nagoya University(Japan))

[P-G-10] Microstructure development and carbon monoxide removal catalysis over Zr-based alloy composites
*Masakuni Ozawa¹, Atsuhiko Masuda¹, Naoya Katsuragawa¹, Katsuragawa Hattori¹, Toshinobu Yogo¹, Shin-ichi Yamamura² (1. Nagoya University(Japan), 2. Tohoku University(Japan))

[P-G-11] Preparation and hydrogen storage properties of Pd-Au nanocomposite particles
*Shoji Ando¹, Masakuni Ozawa² (1. Department of Material Engineering, Nagoya University(Japan), 2. Institute of Materials and Systems for Sustainability Nagoya University(Japan))

[P-G-12] Preparation and catalytic behavior of CeO2 nanoparticles on Al2O3 crystal
*Takashi HATTORI¹, Masakuni OZAWA¹, Masatomo HATTORI¹ (1. Nagoya University(Japan))