PROGRAM OVERVIEW

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<tr><td rowspan="3">July 7
(Tue)</td><td>14:00 – 18:00</td><td colspan="4">Registration</td></tr>
<tr><td>18:30 –</td><td colspan="4">Welcome reception</td></tr>
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<tr><td rowspan="5">July 8
(Wed)</td><td>8:00 – 12:10</td><td>Session A
< Room I ></td><td>Session B
< Room II ></td><td></td><td rowspan="10">Exhibition
Session
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Ladies
Program
10:00 –
17:00</td></tr>
<tr><td>12:10 – 13:20</td><td colspan="3">Lunch</td></tr>
<tr><td>13:20 – 17:00</td><td>Session A
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<tr><td>17:15 – 19:00</td><td colspan="3">Poster
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<tr><td rowspan="3">July 9
(Thu)</td><td rowspan="2">8:00 – 12:10</td><td rowspan="2">Session A
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<tr><td>Session C
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<tr><td>12:30 – 18:00</td><td colspan="3">Excursion (including Lunch)</td></tr>
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<tr><td rowspan="2">July 10
(Fri)</td><td rowspan="2">8:00 – 12:30</td><td rowspan="2">Session A
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<tr><td></td><td>12:30 – 14:00</td><td colspan="3">Lunch</td></tr>
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NOTE TO PRESENTERS

For Oral Presentation:

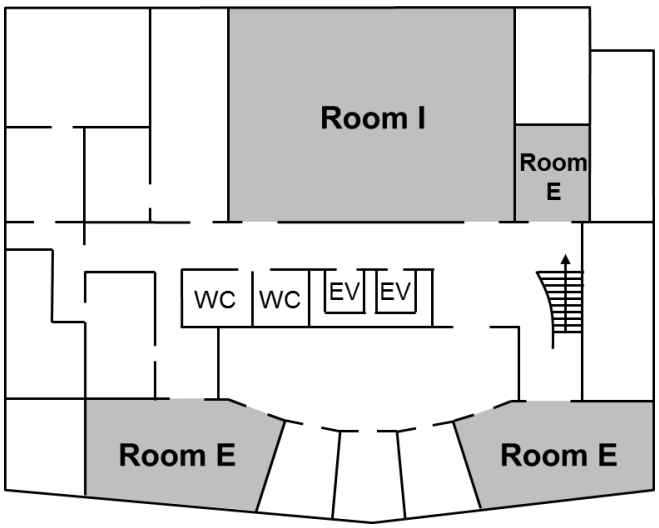
The organizing committee will provide a laptop computer, LCD projector, screen, laser pointer and microphone in each technical session room. The operating system of the laptop computer is Windows 7, and Microsoft Powerpoint 2010 will be installed. Presentation times as shown in the session program for invited and contributed speakers are including discussion (contributed speakers: 10 min presentation and 5 min discussion, invited speakers: 5 min discussion). Please bring your presentation data on a USB memory or CD-ROM to be loaded to the laptop prior to the start of the session. Speakers can also use own computers to make presentations. Speakers are requested to check that their laptops work well with the projector before their presentations. No presentation may be loaded while the session is in progress, so please arrive early in your session room.

For Poster Presentation:

Poster session will run for 105 minutes from 17:15 to 19:00 on 8th July 2015. Authors should plan on arriving 30 min before the poster session to set up. The poster number will help you in locating your space at the poster session. At a minimum, one author of a paper should be present to provide details and answer questions during the poster session. Authors are responsible for removing all materials after closing the poster session until 21:00 of the day. The conference will provide a display board. Printed poster dimensions are regulated as 150 cm in tall and 85 cm in wide. Posters are attached to the display boards with thumbtacks, which will be provided. The boards are rented and may not be written on or defaced in any way. There are no provisions for making posters at the meeting or for receiving, storing, or returning posters to authors.

CONFERENCE FLOOR PLANS

B1F



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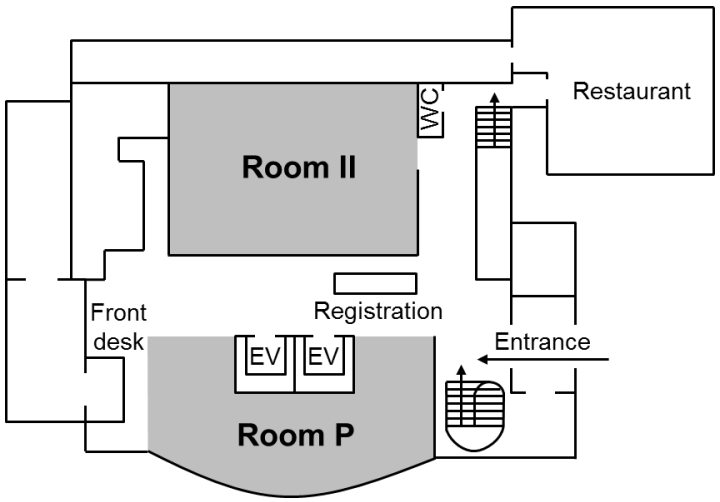

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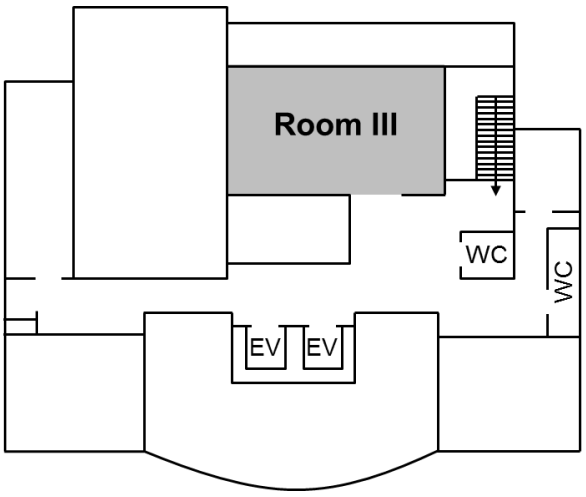

Wednesday, July 8, 2015: Room I

Session A: Interface Characterization and Control for Nanoparticles and Powders (51st Summer Symposium on Powder Technology)

Co-organized by Research Group on Crystallization Process for Functional Fine Particle Synthesis and Research Group on Designs of Particle and Powder for Advanced Materials

08:00–10:00, Chair: ***Hidekazu Tanaka***, Shimane University, Japan

08:00–08:25, AI-01 Invited

Confined space synthesis and design for morphologically controlled particles

Y. Shirakawa

Department of Chemical Engineering and Materials Science, Doshisha University, Japan

08:25–08:50, AI-02 Invited

Synthesis and characterization of photoluminescent Mn-doped ZnS nanoparticles using reversed micelle technique

N. Rungrotmongkon, M. Tangmanophienchai, T. Prayochvibul and T. Charinpanitkul

Center of Excellence in Particle Technology, Department of Chemical Engineering, Faculty of Engineering, Chulalongkorn University, Thailand

08:50–09:05, AO-03 Oral

Synthesis of large scorodite particles using ultrasound irradiation

Y. Kitamura, H. Okawa and K. Sugawara

Graduate School of Engineering and Resource Science, Akita University, Japan

09:05–09:20, AO-04 Oral

Investigation of the motion of a particle with irregular shapes in a uniform flow by direct numerical simulation

W. Zhang*, H. Watanabe*, M. Muto**, K. Hori and T. Kitagawa****

*Department of Mechanical Engineering, Kyushu University, Japan, **Department of Mechanical Engineering and Science, Kyoto University, Japan, ***Numerical Flow Designing CO.,LTD., Japan

09:20–09:35, AO-05 Oral

Synthesis nano size calcium carbonate by CO_2 bubbling method

Y. Nakashima, C. Takai, M. Fuji, R.K. Hadi and T. Shirai

Advanced Ceramics Research Center, Nagoya Institute of Technology, Japan

09:35–10:00, AI-06 Invited

Gas phase nanoscale coating and interphase control: SWNT thin films for flexible electronics applications and particles for inhalation drug delivery

E.I. Kauppinen

Department of Applied Physics, Aalto University School of Science, Finland

BREAK 10:00–10:15

10:15–12:05, Chair: ***Olivera Milošević***, SASA, Serbia

10:15–10:40, AI-07 Invited

Nanocomposite formation of drug/trans-glycosylated additive for creating functional powders

Y. Tozuka

Laboratory of Formulation Design and Pharmaceutical Technology, Osaka University of Pharmaceutical Sciences, Japan

10:40–10:55, AO-08 Oral

Development of shape-controlled inhalable tranilast powder by asparagine acid

K. Kadota, T. Nishimura, A. Kunita, H. Sato and Y. Tozuka

Laboratory of Formulation Design and Pharmaceutical Technology, Osaka University of Pharmaceutical Sciences, Japan

10:55–11:10, AO-09 Oral

Use of bioglass/calcium sulfate composites as bone graft

M.-P. Chang*, W.-H. Tuan* and P.-L. Lai*

*Department of Materials Science and Engineering, National Taiwan University, Taiwan, **Department of Orthopedic Surgery, Chang Gung Memorial Hospital at Linkou, Chang Giung University College of Medicine, Taiwan

11:10–11:25, AO-10 Oral

Mechanical synthesis of cathode granules for lithium-ion secondary batteries and its microstructural and electrochemical evaluations

E. Nakamura*, A. Kondo**, T. Kozawa**, M. Matsuoka** and M. Naito*

*Graduate School of Engineering, Osaka University, Japan, **Joining and Welding Research Institute, Osaka University, Japan

11:25–11:40, AO-11 Oral

Mechanical synthesis and electrochemical properties of $LiNi_{0.5}Mn_{1.5}O_4$ cathode powder for Li-ion batteries

H. Tarui*, T. Kozawa**, M. Matsuoka**, A. Kondo** and M. Naito*

*Graduate School of Engineering, Osaka University, Japan, **Joining and Welding Research Institute, Osaka University, Japan

11:40–12:05, AI-12 Invited

Integration challenges in alternative and renewable energy (ICARE)

M. Singh

Ohio Aerospace Institute, USA

LUNCH 12:10–13:20

13:20–15:10, Chair: ***Kenji Tanno***, CRIEPI, Japan

13:20–13:45, AI-13 Invited

Interface modification for the adsorption of viruses

T. Graule, M. Schabikowski, M. Wegmann and B. Michen

Empa, Swiss Federal Laboratories for Materials Science and Technology, Laboratory for High Performance Ceramics, Switzerland

13:45–14:00, AO-14 Oral

Preparation of fine Y and ZSM-5 zeolites with high-crystallinity by the combination of bead-milling and post-milling recrystallization methods

T. Wakihara, T. Kano and T. Okubo

Department of Chemical System Engineering, The University of Tokyo, Japan

14:00–14:15, AO-15 Oral

Colloidal Au single-atom catalysts embedded on Pd nanocluster

H. Zhang*, C. Jiao**, F. Li* and L. Lu**

*The State Key Laboratory of Refractory and Metallurgy, Wuhan University of Science and Technology, China, **Hubei Key Laboratory for Efficient Utilization and Agglomeration of Metallurgical Mineral Resources, Wuhan University of Science and Technology, China, ***College of Chemical Engineering and Technology, Wuhan University of Science and Technology, China

14:15–14:30, AO-16 Oral

Sorption mechanism of arsenate at the interface of ferrihydrite during co-precipitation process in solution

C. Tokoro* and T. Kato*

*Faculty of Science and Engineering, Waseda University, Japan, **Graduate School of Creative Science and Engineering, Waseda University, Japan

14:30–14:45, AO-17 Oral

Preparation of carbamate-stabilized vaterite particles for strontium collection in radioactive waste water treatment

J. Nakamura*, Y. Sakka* and T. Kasuga*

*Advanced Key Technologies Division, National Institute for Materials Science, Japan, **Department of Frontier Materials, Nagoya Institute of Technology, Japan

14:45–15:10, AI-18 Invited

Better microstructure derived electrophoretic deposition of ceramic nanoparticles

B. Jun

Department of Nano Materials Science and Engineering, Kyungnam University, Korea

BREAK 15:10–15:25

15:25–17:00, Chair: ***Wei-Hsing Tuan***, National Taiwan University, Taiwan

15:25–15:40, AO-19 Oral

Adhesion behavior of nano-size ash particle in turbulent-laminar transition flow

K. Tanno**, R. Kurose**, T. Michioka, H. Makino* and S. Komori****

*Energy Engineering Research Laboratory, Central Research Institute of Electric Power Industry, Japan, **Department of Mechanical Engineering & Science, Kyoto University, Japan, ***Environmental Science Research Laboratory, Central Research Institute of Electric Power Industry, Japan

15:40–15:55, AO-20 Oral

Quantitative measurement of fly ash contents for the control of coal fired burner using laser-induced breakdown spectroscopy

Y. Deguchi**, S. Katsumori*, A. Ikutomo*, K. Tainaka** and K. Tanno*

*Graduate School of Advanced Technology and Science, The University of Tokushima, Japan, **Energy Engineering Research Laboratory, The Central Research Institute of Electric Power Industry, Japan

15:55–16:10, AO-21 Oral

New recovery process of gold from incinerated ash by chlorination

T. Kato, H. Okawa and K. Sugawara

Faculty of Engineering and Resource Science, Akita University, Japan

16:10–16:35, AI-22 Invited

II-VI compounds revisited: the never ending story

P. Fernández

Dept. Física de Materiales, Fac. Physics, University Complutense, Spain

16:35–17:00, AI-23 Invited

Metal oxide semiconductors for energy harvesting applications

S. Mathur

Inorganic and Materials Chemistry, Department of Chemistry, University of Cologne, Germany

Wednesday, July 8, 2015: Room II

Session B: Smart Processing Technology

08:00–10:05, Chair: ***Di Zhang***, Shanghai Jiao Tong University, China

08:00–08:25, BI-01 Invited

Novel hierarchical functional nanomaterials processed via bottom-up chemical approaches

O. Milošević*, L. Mančić** and M.E. Rabanal*****

*Institute of Technical Sciences of the Serbian Academy of Sciences and Arts, Serbia, **University Carlos III, Spain

08:25–08:40, BO-02 Oral

Liquid-crystalline organic-inorganic hybrid dendrimer with a CdS nano-core: photoluminescence behavior of the self-organized assembly

K. Kanie*, M. Matsubara*, J. Yabuki*, A. Muramatsu*, W. Stevenson**, X. Zeng** and G. Ungar****

*Institute of Multidisciplinary Research for Advanced Material, Tohoku University, Japan, **Department of Materials Science and Engineering, University of Sheffield, UK

08:40–08:55, BO-03 Oral

Fabrication of nanoparticle functional network membrane by the micro-phase separation process

B. Peng, C. Takai, T. Shirai and M. Fuji

Advanced Ceramics Research Center, Nagoya Institute of Technology, Japan

08:55–09:20, BI-04 Invited

Enhanced properties of $BaTiO_3$ nanocube-based architectures

K. Kato*, K. Mimura*, Q. Ma*, M. Osada**, H. Haneda**, H. Imai*** and S. Wada*****

*National Institute of Advanced Industrial Science and Technology, Japan, **National Institute for Materials Science, Japan, ***University of Yamanashi, Japan, ****Keio University, Japan

09:20–09:35, BO-05 Oral

Preliminary study on powder layer manufacturing of alumina ceramic using water spray bonding process

M. Hotta, A. Shimamura, N. Kondo and T. Ohji

Advanced Manufacturing Research Institute, National Institute of Advanced Industrial Science and Technology, Japan

09:35–09:50, BO-06 Oral

A smart processing of Si_2N_2O oxynitride ceramic powders with variable morphology controlled by hard template assistance

Q. Liu*, Y. Zhou*,**, H. Yang*,**, Z. Zhou* and G. Liu***

*State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China, **Graduate University of the Chinese Academy of Sciences, China

09:50–10:05, BO-07 Oral

Fabrication and some properties of textured MAX phase ceramics

Y. Sakka, S. Musha, K. Sato and T.S. Suzuki

National Institute for Materials Science, Japan

BREAK 10:05–10:20

10:20–12:10, Chair: ***José M. Torralba***, IMDEA Materials Institute, Spain

10:20–10:45, BI-08 Invited

Well-known functional materials at nanometric scale to novel and singular applications

L. Muñoz*, A. Sierra-Fernández*,**, G. Flores-Carrasco, L. Gómez-Villalba**, O. Milošević**** *and M.E. Rabanal**

*Universidad Carlos III de Madrid&IAAB, Materials Science Department and Chemical Engineering, Spain, **Instituto de Geociencias (CSIC, UCM), Spain, ***CIDS-ICUAP Benemérita Universidad Autónoma de Puebla, México, ****Institute of Technical Sciences of the Serbian Academy of Sciences and Arts, Serbia

10:45–11:00, BO-09 Oral

Synthesis and characterization of silica hollow nanoparticles embedded with CdSe quantum dots

H.R. Khosroshahi*,**, M. Tani* and M. Fuji*,*

*Advanced Ceramic Research Center, Nagoya Institute of Technology, Japan, **Advanced Low Carbon Technology Research and Development Program, Japan Science and Technology Agency, Japan

11:00–11:15, BO-10 Oral

Macroporous composite foams via aqueous gelcasting of particle-stabilized emulsions

W.J. Tseng, P.-T. Lin and K.-T. Hsu

Department of Materials Science and Engineering, National Chung Hsing University, Taiwan

11:15–11:30, BO-11 Oral

Highly porous mullite based thermal insulators prepared by gelation freezing method

M. Fukushima, T. Ohji and Y. Yoshizawa

National Institute of Advanced Industrial Science and Technology, Japan

11:30–11:45, BO-12 Oral

Drying behavior of ceramic powder hydrogels used organic co-polymer

S. Shimai*,**, X. Peng**, S. Wang** and H. Kamiya*

*Graduate School of Bio-Applications and Systems Engineering, Tokyo University of Agriculture and Technology, Japan, **Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

11:45–12:10, BI-13 Invited

Hierarchically structured assembly of 2D nanosheets for tailored electronic materials

M. Osada and T. Sasaki

International Center for Materials Nanoarchitectonics (WPI-MANA), National Institute for Materials Science, Japan

LUNCH 12:10–13:20

13:20–15:10, Chair: ***Junya Kano***, IMRAM, Tohoku University, Japan

13:20–13:45, BI-14 Invited

Mechanism of room temperature impact consolidation (RTIC) for ceramics powder on aerosol deposition process

J. Akedo

National Institute of Advanced Industrial Science and Technology, Japan

13:45–14:00, BI-15 Invited

Low temperature hydrothermal-galvanic couple synthesis of perovskite oxide thin films over conductive nitride-coated substrates

F.-H. Lu

Department of Materials Science and Engineering, National Chung Hsing University, Taiwan

14:00–14:15, BO-16 Oral

Mechanically induced phase transformation of boehmite and the conversion into transition-metal aluminates

T. Kozawa and M. Naito

Joining and Welding Research Institute, Osaka University, Japan

14:15–14:30, BO-17 Oral

Co-doping NiO and Nb_2O_5 into yttria-stabilized zirconia (YSZ) and its phase stability

P.-C. Chen*, W.-H. Tuan*, T.-W. Lian** and M. Naito*

*Department of Materials Science and Engineering, National Taiwan University, Taiwan, **Joining and Welding Research Institute, Osaka University, Japan

14:30–14:45, BO-18 Oral

Chemical flame synthesis of OH group synthetic mica same as natural muscovite $KAl_2(AlSi_3O_{10})(OH)_2$

Y. Takao* and T. Asai*

*National Institute of Advanced Industrial Science and Technology, Japan, **SANSHIN MINING IND.Co.,Ltd, Japan

14:45–15:10, BI-19 Invited

Bioinspired functional materials templated from nature species

D. Zhang, W. Zhang, J. Gu, T. Fan, H. Su and Q. Liu

State Key Lab of Metal Matrix Composites, Shanghai Jiao Tong University, China

BREAK 15:10–15:25

15:25–17:00, Chair: ***Norifumi Isu***, LIXIL Corporation, Japan

15:25–15:40, BO-20 Oral

Preparation of $BaTiO_3$ fiber via electrospinning

K. Iimura, K. Sawada, H. Satone and M. Suzuki

Graduate School of Engineering, University of Hyogo, Japan

15:40–15:55, BO-21 Oral

Carbon nanotubes based hydrogel materials: preparation, characterization, and applications

Z. Tan*, S. Ohara**, H. Abe** and M. Naito*

*Department of Applied Chemistry, School of Petroleum and Chemical Engineering, Dalian University of Technology, China, **Joining and Welding Research Institute, Osaka University, Japan

15:55–16:10, BO-22 Oral

Fabrication and X-ray CT observation on 3D micro structure controlled ceramics/polymer hybrid systems

T. Nakayama*, H.T.M. Triet*, H.-B. Cho*, M. Kanno*, G. Ohnishi*, M.G.R.H. Salazar*, B. Choijil**, S.B. Rozali, T. Suzuki*, H. Suematsu* and K. Niihara***

*EDI, Nagaoka University of Technology, Japan, **Mongolian University of Science and Technology, Mongolia, ***Department of Mechanical Engineering, University of Malaya, Malaysia

16:10–16:35, BI-23 Invited

Microstructural engineering and processing of high performance silicon nitride ceramics

H.-T. Lin

School of Electronic and Mechanical Engineering, Guangdong University of Technology, China

16:35–17:00, BI-24 Invited

Sintering mechanics of amorphous and crystalline particles in micro-scale

F. Wakai*, K. Katsura*, S. Yutaka* and T. Akatsu*

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

Wednesday, July 8, 2015: Room P

Poster Session (Session A–E)

17:15–19:00, AP-24 Poster

Numerical study of particle filling behavior during suction filling using discrete element method

R. Furukawa**, *Y. Shiosaka, *K. Kadota****, *S. Narisawa**, *A. Shimosaka***, *J. Hidaka*** *and Y. Shirakawa*****

*Pharmaceutical Research Laboratories, CMC Division, Mitsubishi Tanabe Pharma Corporation, Japan, **Department of Chemical Engineering and Materials Science, Doshisha University, Japan, ***Osaka University of Pharmaceutical Sciences, Japan

17:15–19:00, AP-25 Poster

Direct numerical simulation of a pulverized coal jet flame

T. Hara, M. Muto, T. Kitano, R. Kurose and S. Komori

Department of Mechanical Engineering and Science, and Advanced Research Institute of Fluid Science and Engineering, Kyoto University, Japan

17:15–19:00, AP-26 Poster

Catalytic gasification reactivity of calcium-loaded coal char with steam and CO_2

A. Ikeda**, *P.N. van Esdonk, *S. Umemoto**, *K. Tanno** *and S. Kajitani****

*Energy Engineering Research Laboratory, Central Research Institute of Electric Power Industry, Japan, **Department of Mechanical Engineering, Eindhoven University of Technology, The Netherlands

17:15–19:00, AP-27 Poster

XAFS study of trace elements in powder by-product from coal combustion plant

T. Yamamoto**, *Y. Tochihara**, *N. Noda**, *H. Akiho** *and S. Noguchi**

*Central Research Institute of Electric Power Industry, Japan, **Electric Power Engineering Systems Co., Ltd., Japan

17:15–19:00, AP-28 Poster

Surface control of carbon black by direct fluorination

T. Mukai, H. Takebayashi and K. Teraoka

Fluorine & Carbon Development Department, Toyo Tanso Co.,Ltd, Japan

17:15–19:00, AP-29 Poster

Scale-up theory of briquetting of UBC by double roll press

T. Shigehisa and T. Nakagawa

Principal Researcher of Technology Development Group, Kobe Steel, LTD., Japan

17:15–19:00, AP-30 Poster

Effect of organic solvent vapors on the crystallization rate of amorphous indomethacin

N. Hirota, Y. Hattori and M. Otsuka

Faculty of Pharmacy, Musashino University, Japan

17:15–19:00, AP-31 Poster

Dissolution control of Atorvastatin hydrate by milling method

M. Kobayashi**, *Y. Hattori, *T. Sasaki**** *and M. Otsuka**,*****

*Faculty of Pharmacy, Musashino University, Japan, **Research Institute of Pharmaceutical Sciences, Musashino University, Japan, ***Research Institute of Electronics, Shizuoka University, Japan

17:15–19:00, AP-32 Poster

Effects of ultrasound irradiation on cooling crystallization of L-aspartic acid

I. Matsuda**, *T. Yamamoto**, *M. Mizuno *and H. Mori****

*Department of Life Sciences and Bioengineering, University of Toyama, Japan, **Department of Mechanical Engineering, Aichi Institute of Technology, Japan

17:15–19:00, AP-33 Poster

Effect of habit modifier addition and atomization conditions on particle morphology

Y. Deki, A. Shimosaka and Y. Shirakawa

Department of Chemical Engineering and Material Science, Doshisha University, Japan

17:15–19:00, AP-34 Poster

Impacts of kind and additional amount of secondary fluid on flow characteristics of capillary suspension

H. Sato, T. Ishigami and M. Imai

Course in Bioresource Utilization Sciences, Graduate School of Bioresource Sciences, Nihon University, Japan

17:15–19:00, AP-35 Poster

Interfacial de-bonding process of dry nano powder of clay mineral with melted polymer nanocomposites

R. El-Sheikhy and M. Al-Shamrani

Bughshan Research Chair in Expansive Clayl, Faculty of Engineering, King Saud University, Saudi Arabia

17:15–19:00, AP-36 Poster

Investigation of change of fracture toughness of LDPE matrix due to mixing with silicate-aluminum powder using ASTM standards

R. El-Sheikhy and M. Al-Shamrani

Bughshan Research Chair in Expansive Clayl, Faculty of Engineering, King Saud University, Saudi Arabia

17:15–19:00, AP-38 Poster

Synthesis of $Zn(Al_xGa_{1-x})_2O_4$ spinel solid solutions through hydrothermal method

K. Sakoda and M. Hirano

Department of Applied Chemistry, Faculty of Engineering, Aichi Institute of Technology, Japan

17:15–19:00, AP-39 Poster

Cathodoluminescence of ZnO nanostructures induced by femtosecond laser pulses

G. Escalante*, A. Ruíz de la Cruz**, J. Solis** and P. Fernández*

*Dept. Física de Materiales, Fac. Físicas, U. Complutense, Spain, **Laser Processing Group, Instituto de Optica, Spain

17:15–19:00, AP-40 Poster

Bubble formation in water with magnetite nano-particles during microwave irradiation

R. Nakata, S. Matsumura and Y. Asakuma

Department of Mechanical and Systems Engineering, University of Hyogo, Japan

17:15–19:00, AP-41 Poster

In-situ observation of bubble formation in aqueous solution of alcohol during microwave irradiation

S. Matsumura, R. Nakata and Y. Asakuma

Department of Mechanical and Systems Engineering, University of Hyogo, Japan

17:15–19:00, AP-42 Poster

Effect of microwave irradiation on surface tension reduction of aqueous solution

Y. Kanazawa*, M. Asada*, Y. Asakuma* and C. Phan*

*Department of Mechanical and Systems Engineering, University of Hyogo, Japan, **Chemical Engineering, Curtin University, Australia

17:15–19:00, AP-43 Poster

Mechanism for surface tension reduction of aqueous solution during microwave irradiation

M. Asada*, Y. Kanazawa*, Y. Asakuma* and C. Phan*

*Department of Mechanical and Systems Engineering, University of Hyogo, Japan, **Chemical Engineering, Curtin University, Australia

17:15–19:00, AP-44 Poster

Control of oscillatory reaction in a liquid-liquid system by microwave irradiation

S. Takahashi, Y. Maeda and Y. Asakuma

Department of Mechanical and Systems Engineering, University of Hyogo, Japan

17:15–19:00, AP-45 Poster

Characteristics and properties of lead free glass frit for silver front contact pastes for SiN_x coated solar cell

Y.J. Li and H.J. Lin

Department of Materials Science and Engineering, National United University, Taiwan

17:15–19:00, AP-46 Poster

A quantitative modeling of Hg(II) co-precipitation at the interface of ferrihydrite for an optimum design of wastewater treatment

T. Kato*, F. Futami* and C. Tokoro*

*Graduate School of Creative Science and Engineering, Waseda University, Japan, **Faculty of Science and Engineering, Waseda University, Japan

17:15–19:00, AP-47 Poster

Accelerating leaching trial on chalcopyrite using a ball mill

Y. Mitani* and C. Tokoro*

*Graduate School of Science and Engineering, Waseda University, Japan, **Faculty of Science and Engineering, Waseda University, Japan

17:15–19:00, AP-48 Poster

Measurement of water contents in ethanol using zeolite-coated quartz crystal resonator

T. Yamamoto*, B.C. Kim** and Y.H. Kim*

*Department of Chemical Engineering, University of Hyogo, Japan, **Department of Chemical Engineering, Dong-A University, Korea

17:15–19:00, AP-49 Poster

Dispersion behavior of surface-modified silica particles assessed by colloidal probe AFM method

T. Mori*,*,**, Y. Okada** and H. Kamiya*

*Research Center, Lintec Co.,Ltd, Japan, **Graduate School of Bio-Applications and Systems Engineering, Tokyo University of Agriculture and Technology, Japan

17:15–19:00, AP-50 Poster

CFD analysis of dispersion efficiency and uniformity of alumina aggregates in suspension using high-speed rotor-stator mixer and R.C.A mixer

K. Kanazawa*,*,**, M. Kawakubo* and H. Kamiya*

*PRIMIX Corporation, Japan, **Graduate School of Bio-Applications and Systems Engineering, Tokyo University of Agriculture and Technology, Japan

17:15–19:00, AP-51 Poster

Shear-thickening behavior in concentrated slurries under couette flow

Y. Nagasawa, Z. Kato and S. Tanaka

Department of Materials Science and Technology, Nagaoka University of Technology, Japan

17:15–19:00, AP-52 Poster

Fabrication of Ni/SiO_2 composite particles through wet processing route in organic solvents and their stability in concentrated slurries

S. Morita, M. Iijima and J. Tatami

Graduate School of Environment and Information Sciences, Yokohama National University, Japan

17:15–19:00, AP-53 Poster

Fabrication of polyethyleneimine/oleic acid complexes and the effects of their molecular weights on the stability of silicon nitride/toluene concentrated slurries

N. Okamura*, *M. Iijima and J. Tatami

Graduate School of Environment and Information Sciences, Yokohama National University, Japan

17:15–19:00, AP-54 Poster

Polyethyleneimine-anionic surfactant complexes as one-step surface modifier for stabilizing SiO_2 nanoparticles in organic solvents through bead milling process

T. Tsutsumi*, *M. Iijima and J. Tatami

Graduate School of Environment and Information Sciences, Yokohama National University, Japan

17:15–19:00, AP-55 Poster

Grain boundary engineering by shape-controlled of $SrTiO_3$ nanocrystals

W.-L. Tzeng*, *T.-L. Sun and S.-J. Shih

Department of Materials Science and Engineering, National Taiwan University of Science and Technology, Taiwan

17:15–19:00, AP-56 Poster

Preparation and properties of $SiCp/Al_2O_3$ composites by reaction sintering

Harish G* and *M. Balasubramanian

Department of Metallurgical and Materials Engineering, Indian Institute of Technology Madras, India

17:15–19:00, BP-25 Poster

Joining alumina by geopolymer mortar

C.-Y. Hsu* and *W.-H. Tuan

Department of Materials Science and Engineering, National Taiwan University, Taiwan

17:15–19:00, BP-26 Poster

Effect of cordierite addition on compressive strength and thermal stability of metakaolin based geopolymer

K. Hemra* and *P. Aungkavattana

Ceramics Technology Research Unit, National Metal and Materials Technology Center, National Science and Technology Development Agency, Thailand

17:15–19:00, BP-27 Poster

Synthesis of porous $La_{0.6}Sr_{0.4}Co_{0.2}Fe_{0.8}O_3$ particles by citric acid-addition ultrasonic spray pyrolysis (CA-USP)

T. Kinoshita**, *H. Maruko*, A. Kondo**, M. Naito** and M. Adachi*

*Department of Chemical Engineering, Osaka Prefecture University, Japan, **Joining and Welding Research Institute, Osaka University, Japan

17:15–19:00, BP-28 Poster

Observation of internal structure of RBSN and SRBSN by IR microscopy

K. Jeong*, J. Tatami*, T. Takahashi** and M. Iijima

*Graduate School of Environment and Information Sciences, Yokohama National University, Japan, **Kanagawa Academy of Science and Technology, Japan

17:15–19:00, BP-30 Poster

Electromechanical properties of textured NKLNT ceramics

M.-S. Kim*, J.-G. Ahn*, M. Saleem**, S.-J. Jeong*, I.-S. Kim* and J. Song

*Battery Research Center, Korea Electrotechnology Research Institute, Korea, **Department of Electrical Functionality Material Engineering, University of Science and Technology, Korea

17:15–19:00, BP-31 Poster

Polymorphic transformation of mesoporous calcium carbonate by interface control

S. Yamanaka*, Y. Sugawara**, T. Oiso, T. Fujimoto*, Y. Ohira* and Y. Kuga***

*College of Environmental Technology, Muroran Institute of Technology, Japan, **Division of Applied Sciences, Muroran Institute of Technology, Japan, ***Division of Engineering, Muroran Institute of Technology, Japan

17:15–19:00, BP-32 Poster

Simulation of oxidation resistant SiC coating by CVD process in the vertical hot-wall reactor

T.A. Chen*, H.-J. Lin*, M.S. Leu** and J.B. Wu*

*Department of Material Science and Engineering, National United University, Taiwan, **Material and Chemical Research Laboratories, Industrial Technology Research Institute, Taiwan

17:15–19:00, BP-33 Poster

Effect of stirrer design on homogenization of molten glass

H.-P. Nien, Z.-X. You and H.-J. Lin

Department of Materials Science and Engineering, National United University, Taiwan

17:15–19:00, BP-34 Poster

Low-temperature growth of zinc oxide films by atmospheric-pressure plasma-assisted mist CVD

K. Takenaka, G. Uchida and Y. Setsuhara

Joining and Welding Research Institute, Osaka University, Japan

17:15–19:00, BP-35 Poster

Formation of thin film transistor using a-IGZO channels deposited by plasma-enhanced reactive sputtering

Y. Setsuhara*, K. Takenaka*, Y. Suyama*, Y. Nakata*, G. Uchida* and A. Ebe*

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

17:15–19:00, DP-01 Poster

Pseudocapacitive performance of Co/Mn oxide core-shell structure prepared by hydrothermal process

P.-C. Lin*, S.-J. Shih** and C.-Y. Chen*

*Department of Materials Science and Engineering, Feng Chia University, Taiwan, **Department of Materials Science and Engineering, National Taiwan University of Science and Technology, Taiwan

17:15–19:00, DP-02 Poster

Effect of lanthanide coating on photocatalytic activity and upconversion mechanism of bismuth oxide powder

K.-H. Tu*, J.-H. Chen**, J.J. Wu and C.-Y. Chen****

*Department of Materials Science and Engineering, Feng Chia University, Taiwan, **Department of Photonics, Feng Chia University, Taiwan, ***Department of Environmental Engineering and Science, Feng Chia University, Taiwan

17:15–19:00, DP-03 Poster

Electrical double-layer capacitance of activated carbon powders coated with different thicknesses

S. Kumagai** and D. Tashima*

*Department of Electrical and Electronic Engineering, Akita University, Japan, **Interdisciplinary Research Organization, University of Miyazaki, Japan

17:15–19:00, DP-04 Poster

Influence of Ca additive on the ionic conductivity of ceria-based electrolyte

J.-R. Huang, C.-W. Hsieh and S.-J. Shih

Department of Material Science and Engineering, National Taiwan University of Science and Technology, Taiwan

17:15–19:00, DP-05 Poster

Effect of acid leaching on the synthesis of zeolitic materials from paper sludge ash

T. Wajima

Department of Urban Environment Systems, Chiba University, Japan

17:15–19:00, DP-06 Poster

Granulation of paper sludge using distilled water and preparation of porous particle for phosphate removal

K. Matsuki and T. Wajima

Department of Urban Environmental System, Graduate School of Engineering, Chiba University, Japan

17:15–19:00, DP-07 Poster

Production of biocoke from biomass resources in Thailand

J. Chaichanawong*, S. Cherdkeattikul*, P. Supachutikul*, S. Burapornpong*, M. Fakkao* and T. Ida*

*Advanced Material Technology Research Laboratory, Research Center for Advanced Energy Technology, Master Program in Engineering Technology, Faculty of Engineering, Thai-Nichi Institute of Technology, Thailand, **Research Institute of Biocoke, Kinki University, Japan

17:15–19:00, DP-08 Poster

Fabrication of transparent and fluorescent β-SiAlON ceramics

T. Tanaka**, J. Tatami*, M. Iijima*, T. Takahashi** and M. Yokouchi*

*Yokohama National University, Japan, **Kanagawa Academy of Science and Technology, Japan, ***Kanagawa Industrial Technology Center, Japan

17:15–19:00, DP-09 Poster

Copper selenide crystallites synthesized using hot-injection process

C.-T. Yang*, J.-H. Tu* and H.-I Hsiang*,*

*Department of Resources Engineering, National Cheng Kung University, Taiwan, **Resource Recycling and Management Research Center, National Cheng Kung University, Taiwan

17:15–19:00, DP-10 Poster

Fabrication of porous hydroxyapatite body by gel-casting method and its catalytic activities

T. Shirai, D. Asai, H. Nishikawa and M. Fuji

Advanced Ceramics Research Center, Nagoya Institute of Technology, Japan

17:15–19:00, EP-01 Poster

Photocatalytic activities of ZnO photocatalyst with different morphologies synthesized by sonochemical method

A. Phuruangrat

Department of Materials Science and Technology, Faculty of Science, Prince of Songkla University, Thailand

17:15–19:00, EP-02 Poster

Electronic structure and optical properties of Ga-doped ZnO with intrinsic defects by first-principles calculations

H.-C. Wu and Y.-C. Peng

Department of Materials Engineering, Ming Chi University of Technology, Taiwan

17:15–19:00, EP-03 Poster

Thermal conductivity of a porous composite composed of glass-fiber/fumed-silica-nanoparticle

M. Akoshima*, H. Abe*, T.-W. Lian**, A. Kondo** and M. Naito*

*National Institute of Advanced Industrial Science and Technology, Japan, **Joining and Welding Research Institute, Osaka University, Japan

17:15–19:00, EP-04 Poster

Specific heat capacity measurement of carbon material from 900 to 1600 K by differential scanning calorimetry

H. Abe and M. Akoshima

National Institute of Advanced Industrial Science and Technology, Japan

17:15–19:00, EP-05 Poster

Specific heat capacity measurement of powder materials

H. Abe

National Institute of Advanced Industrial Science and Technology, Japan

17:15–19:00, EP-06 Poster

Effects of fluoride-doped $Ba_{0.96}Ca_{0.04}Ti_{0.96}Zr_{0.04}O_3$ lead-free ceramics on phase structure, sintering temperature, and electrical properties for physiotherapy transducers

C.-C. Tsai*, C.-C. Shih*****, J.-S. Jiang******, S.-Y. Chu******* and Z.-Y. Chen*******

*Department of Electronics Engineering and Computer Science, TungFang Design Institute, Taiwan, **Department of Interior Design, TungFang Design Institute, Taiwan, ***Department of Arts and Crafts, TungFang Design Institute, Taiwan, ****Department of Electrical Engineering, National Cheng Kung University, Taiwan

17:15–19:00, EP-07 Poster

Influence of swelling of nanogel particle on the photo-acoustic signal amplitude

T. Fukasawa*, S. Noguchi*, H. Aoki*****, S. Nagamine*, H. Shinto******, S. Ito**** and M. Ohshima***

*Department of Chemical Engineering, Kyoto University, Japan, **Department of Chemical Engineering, Hiroshima University, Japan, ***Department of Polymer Chemistry, Kyoto University, Japan, ****Advanced Biomedical Engineering Research Unit, Kyoto University, Japan, *****Department of Chemical Engineering, Fukuoka University, Japan

17:15–19:00, EP-08 Poster

Preparation of ICG-FePt nanoparticles for hyperthermia applications

R.-J. Chung*, K.-L. Ou****** and S.-P. Chen***

*Department of Chemical Engineering and Biotechnology, National Taipei University of Technology, Taiwan, **School of Dentistry, College of Oral Medicine, Taipei Medical University, Taiwan, ***Research Center for Biomedical Implants and Microsurgery Devices, Taipei Medical University, Taiwan, ****Graduate Institute of Biomedical Materials and Tissue Engineering, Taipei Medical University, Taiwan, *****Department of Dentistry, Taipei Medical University-Shuang Ho Hospital, Taiwan

17:15–19:00, EP-09 Poster

Investigation of intrinsic fracture parameters, cracking mechanism and crack behavior of CPNC edge cracks in macroscopic scale

R. El-Sheikhy* and *M. Al-Shamrani

Bughshan Research Chair in Expansive Clayl, Faculty of Engineering, King Saud University, Saudi Arabia

17:15–19:00, EP-10 Poster

Fabrication of *c*-axis oriented $Li_{1+x-y}Nb_{1-x-3y}Ti_{x+4y}O_3$ solid solution by slip casting in a high magnetic field

H. Nakano**, S. Furuya*, T.S. Suzuki** and H. Ohsato**

*Toyohashi University of Technology, Japan, **National Institute for Materials Science, Japan, ***Nagoya Institute of Technology, Japan

17:15–19:00, EP-11 Poster

Preparation and characterization of Eu-doped gehlenite glass particles using spray pyrolysis

S.-H. Lin**, S.-J. Shih*, P. Veteška*, D. Galusek** and W.-H. Tuan**

*Department of Materials Science and Engineering, National Taiwan University of Science and Technology, Taiwan, **Joint Glass Centre of the IIC SAS, TnU AD and FChFT STU, Slovakia, ***Department of Materials Science and Engineering, National Taiwan University, Taiwan

17:15–19:00, EP-12 Poster

Oxidation behavior of SiC specimens with different compositions in oxygen gas and water vapor atmosphere

H. Shibata**, H. Nakano*, T. Ishida*, J. Nakamura*, K. Tsuchiya*, M. Araki* and A. Kohyama*

*Neutron Irradiation and Testing Reactor Center, Japan Atomic Energy Agency, Japan, **OASIS, Muroran Institute of Technology, Japan

17:15–19:00, EP-14 Poster

Effect of surface morphology on the dynamic wetting of water on Si_3N_4 ceramics

S. Fujita, J. Tatami and M. Iijima

Yokohama National University, Japan

17:15–19:00, EP-15 Poster

Influence of Yb_2O_3 additive on electrical insulation of Si_3N_4 ceramics

D. Kawai**, J. Tatami*, M. Iijima* and T. Takahashi*

*Graduate School of Environment and Information Sciences, Yokohama National University, Japan, **Kanagawa Academy of Science and Technology, Japan

17:15–19:00, EP-17 Poster

Fabrication of transparent and fluorescent Eu doped (Y,Ca)-αSiAlON bulk ceramics

S. Watanabe**, J. Tatami*, M. Iijima*, T. Takahashi** and M. Yokouchi**

*Yokohama National University, Japan, **Kanagawa Academy of Science and Technology, Japan, ***Kanagawa Industrial Technology Center, Japan

17:15–19:00, EP-19 Poster

Thermal properties and microstructure of AlN/Cu bilayers

C.-T. Yeh* and *W.-H. Tuan

Department of Materials Science and Engineering, National Taiwan University, Taiwan

17:15–19:00, EP-20 Poster

Preparation of low temperature co-firable lead free thick film resistors

T.-H. Chen**, *C.-S. Hsi**, *S.-J. Wang** and *S.-L. Fu**

*Department of Materials Science and Engineering, National United University, Taiwan, **Department of Electronic Engineering, I-Shou University, Taiwan

17:15–19:00, EP-21 Poster

Low temperature sintered of Bi_2O_3 deficient sillenite $Bi_{12}SiO_{20}$ ceramics

M.-Y. Yang**, *C.-H. Hsu and *C.-S. Hsi****

*Department of Materials Science and Engineering, National United University, Taiwan, **Department of Electrical Engineering, National United University, Taiwan

17:15–19:00, EP-22 Poster

Influence of powder surface properties on tensile strength and oral disintegrating behavior of pharmaceutical tablets

T. Ito** and *H. Kamiya*

*Pharmaceutical Research Laboratories No.1, Lion Corporation, Japan, **Graduate School of Bio-Applications and System Engineering, Tokyo University of Agriculture and Technology, Japan

17:15–19:00, EP-24 Poster

Effects of pore size distribution of hydroxyapatite particles on the protein adsorption behavior

T. Nagasaki**,**, *F. Nagata, *M. Sakurai** and *K. Kato*****

*Applied Chemistry, Chubu University, Japan, **National Institute of Advanced Industrial Science and Technology, Japan

17:15–19:00, EP-25 Poster

Preparation of phylloquinone-loaded poly(lactic acid)/hydroxyapatite core-shell particles and their drug release behavior

F. Nagata*, *T. Miyajima* and *K. Kato

National Institute of Advanced Industrial Science and Technology, Japan

17:15–19:00, EP-27 Poster

Synthesis of bioactive glass and its biodegradation behavior in calcium sulfate sintered body

H.-C. Kuo* and *W.-H. Tuan

Materials Science and Engineering, National Taiwan University, Taiwan

17:15–19:00, EP-28 Poster

Efficient enzyme encapsulation inside sol–gel silica sheet prepared by poly-L-lysine as a catalyst

K. Kato**, R. Hikosaka*,** and F. Nagata

*National Institute of Advanced Industrial Science and Technology, Japan, **Department of Chemistry for Materials, Mie University, Japan

17:15–19:00, EP-29 Poster

Externally temperature-activated 'on-off' pulsatile drug-release microcapsules based on inverse solubility-temperature behavior of hydroxypropyl cellulose

H. Ichikawa**,**, T. Andoh*, S. Tsue, K. Sugisawa*** and Y. Fukumori***

*Faculty of Pharmaceutical Sciences, Kobe Gakuin University, Japan, **Graduate School of Pharmaceutical Sciences, Kobe Gakuin University, Japan, ***Specialty and Performance Chemicals Division, Nippon Soda, Co., Ltd. Japan

17:15–19:00, EP-30 Poster

Adsorption of DNA on mesoporous silica functionalized with various aminosilanes

R. Hikosaka**,**, M. Tomita* and K. Kato*

*Department of Chemistry for Materials, Mie University, Japan, **National Institute of Advanced Industrial Science and Technology, Japan

17:15–19:00, EP-31 Poster

Development of the thermogravimetric analysis method using microwave heating and its application

T. Segawa**, T. Hamaba**, H. Yoshida** and K. Fukui*

*Division of Advanced Nuclear System, Japan Atomic Energy Agency, Japan, **Graduate School of Engineering, Hiroshima University, Japan

17:15–19:00, EP-32 Poster

Effect of milling conditions on the characteristics of YAG phosphor

K. Kanai**, Y. Fukui**, T. Kozawa**, A. Kondo** and M. Naito*

*Kaneka Fundamental Technology Research Alliance Laboratories, Kaneka Corporation, Japan, **Joining and Welding Research Institute, Osaka University, Japan

Thursday, July 9, 2015: Room I

Session A: Interface Characterization and Control for Nanoparticles and Powders (51st Summer Symposium on Powder Technology)

Co-organized by Research Group on Crystallization Process for Functional Fine Particle Synthesis and Research Group on Designs of Particle and Powder for Advanced Materials

08:00–09:45, Chair: ***Yoshio Sakka***, NIMS, Japan

08:00–08:25, AI-56 Invited

Shaping innovative materials for sustainable processes

S. Mullens, B. Michielsen, J. Lefevere, J. Pype, L. Jespers, M. Gysen and E. Seftel

Unit for Sustainable Use of Materials, Flemish Institute for Technological Research (VITO nv), Belgium

08:25–08:40, AO-57 Oral

Effect of particle density on mixing behaviour in a rotating drum

M. Yamamoto*, ***S. Ishihara**** ***and J. Kano*****

*SUMITOMO BAKELITE CO.,LTD., Japan, **Graduate School of Environmental Studies, Tohoku University, Japan, ***Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan

08:40–08:55, AO-58 Oral

Modeling and simulation of irregular-shaped particle breakage using ADEM

S. Ishihara*, ***Q. Zhang**** ***and J. Kano*****

*Graduate School of Environmental Studies, Tohoku University, Japan, **Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan

08:55–09:20, AI-59 Invited

Wetting phenomena of Cu-Ni base alloys on Fe base substrates

E. Bernardo*, ***R. de Oro****, ***M. Campos**** ***and J.M. Torralba*****

*Department of Materials Science and Engineering, Universidad Carlos III Madrid, Spain, **Chalmers University of Technology, Sweden, ***IMDEA Materials Institute, Spain

09:20–09:45, AI-60 Invited

Some fundamental issues of interfacial reactions at the liquid solder alloy/solid Cu interface: effect of the diffusion driving force and the reaction product microstructure

F. Hodaj*

*University of Grenoble Alpes, SIMAP, France, **CNRS, SIMAP, France

BREAK 9:45–10:00

10:00–12:05, Chair: ***Hidehiro Kamiya***, Tokyo University of Agriculture and Technology, Japan

10:00–10:25, AI-61 Invited

Interface tailoring in carbon fiber reinforced SiC ceramic matrix composites

D. Jiang and S. Dong

State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

10:25–10:40, AO-62 Oral

Stochastic analysis on granule collapse during powder compaction

K. Yasuda*, S. Tanaka** and M. Naito*

*Department of Metallurgy and Ceramics Science, Tokyo Institute of Technology, Japan, **Department of Materials Science and Technology, Nagaoka University of Technology, Japan, ***Joining and Welding Research Institute, Osaka University, Japan

10:40–10:55, AO-63 Oral

Morphological change of large pores in alumina ceramics during sintering

S. Tanaka and T. Hondo

Department of Materials and Science Technology, Nagaoka University of Technology, Japan

10:55–11:20, AI-64 Invited

Micro-/nano-mechanical characterization of interface-containing metallic materials

Q. Guo*, J.R. Greer** and D. Zhang*

*The State Key Laboratory of Metal Matrix Composites, Shanghai Jiao Tong University, China, **Department of Applied Physics and Materials Science, California Institute of Technology, USA

11:20–11:35, AO-65 Oral

Microwave heating of carbon fiber reinforced thermoplastic using hexagonal boron nitride powder

D. Shimamoto, Y. Tominaga and Y. Hotta

Advanced Manufacturing Research Institute, National Institute of Advanced Industrial Science and Technology, Japan

11:35–11:50, AO-66 Oral

Effect of moisture on the mechanical properties of glass fiber reinforced polyamide composites

J. Chaichanawong*, C. Thongchuea* and S. Areerat*

*Advanced Material Technology Research Laboratory, Research Center for Advanced Energy Technology, Master Program in Engineering Technology, Faculty of Engineering, Thai-Nichi Institute of Technology, Thailand, **School of Chemical Engineering, Faculty of Engineering, King Mongkut's Institute of Technology Ladkrabang, Thailand

11:50–12:05, AO-67 Oral

Improvement of interfacial adhesion between carbon fiber and thermosetting resin on CFRP by microwave irradiation

Y. Tominaga, D. Shimamoto, K. Sato, Y. Imai and Y. Hotta

National Institute of Advanced Industrial Science and Technology, Japan

Thursday, July 9, 2015: Room III

Session B: Smart Processing Technology

08:00–10:20, Chair: ***Tohru Sekino***, ISIR, Osaka University, Japan

08:00–08:25, BI-36 Invited

Densification of diamond and cBN powders by spark plasma sintering

T. Goto, H. Katsui and J. Zhang

Institute for Materials Research, Tohoku University, Japan

08:25–08:40, BO-37 Oral

One-step mechanical synthesis of $LiCoO_2$ granule and post-heating

E. Nakamura**, **A. Kondo*, T. Kozawa**, M. Matsuoka**, M. Naito**, H. Koga*** and H. Iba******

*Graduate School of Engineering, Osaka University, Japan, **Joining and Welding Research Institute, Osaka University, Japan, ***Battery Research Division, TOYOTA MOTOR CORPORATION, Japan

08:40–08:55, BO-38 Oral

Effects of composition and temperature on densification and mechanical properties of microwave hybrid heating of porcelain

K. Hemra and D. Atong

Ceramics Technology Research Unit, National Metal and Materials Technology Center, National Science and Technology Development Agency, Thailand

08:55–09:10, BO-39 Oral

Fast fabrication of copper nanowire transparent electrodes with a high intensity pulsed light technique

S. Ding,**, J. Jiu*, K. Suganuma* and Y. Tian*****

*The Institute of Scientific and Industrial Research, Osaka University, Japan, **State Key Laboratory of Advanced Welding and Joining, Harbin Institute of Technology, China

09:10–09:25, BO-40 Oral

Preparation of SiC ceramics by laminated object manufacturing and pressureless sintering

J. Zhang, H. Zhong, D. Jiang, Z. Chen, X. Liu and Z. Huang

State Key Laboratory of High Performance Ceramics and Superfine Microstructures, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

09:25–09:40, BO-41 Oral

Fracture analysis of Si-SiC porous ceramics with skeletal structure

I. Himoto, A. Nakashima, S. Yamashita and H. Kita

Department of Molecular Design and Engineering, Nagoya University, Japan

09:40–09:55, BO-42 Oral

Effect of basalt fiber on the compressive strength of class C fly ash-based geopolymer

P. Timakul* and *P. Aungkavattana

National Metal and Materials Technology Center, National Science and Development Agency, Thailand

09:55–10:20, BI-43 Invited

Modeling and characterization to develop tailored-property glass composites

K.G. Ewsuk

Sandia National Laboratories, USA

Thursday, July 9, 2015: Room III

Session C: International Symposium in Honor of Prof. Antoni P. Tomsia

10:25–12:10, Chair: ***Kevin G. Ewsuk***, Sandia National Laboratory, USA

10:25–10:40, CI-01 Invited

Particle assembly under dual temperature gradients for large-scale artificial nacre

A.P. Tomsia*, R.O. Ritchie*,**, B. Delattre** and B. Hao**

*Materials Sciences Division, Lawrence Berkeley National Laboratory, USA, **Department of Materials Science and Engineering, University of California, USA

10:40–11:10, CI-02 Invited

Strength and toughness in natural and bioinspired structural materials

R.O. Ritchie*,** and A.P. Tomsia****

*Department of Materials Science and Engineering, University of California, USA, **Materials Sciences Division, Lawrence Berkeley National Laboratory, USA

11:10–11:40, CI-03 Invited

Fabricating enamel: soft power yields a hard outcome

M.L. Snead

Ostrow School of Dentistry of USC, Center for Craniofacial Molecular Biology, University of Southern California, USA

11:40–12:10, CI-04 Invited

Peptide based tunable bioactivity at the soft-to-hard interfaces: guided tissue engineering approaches

C. Tamerler

Department of Mechanical Engineering, Bioengineering Research Center, Bioengineering Program, University of Kansas, USA

Thursday, July 9, 2015: Room II

Session E: Material Design and Evaluation

08:00–09:50, Chair: ***Dumitru Nedelcu***, Tehnical University of Iasi, Romania

08:00–08:25, EI-32 Invited

Defect control during the production process of SiC-polycrystalline fiber

T. Ishikawa**, *H. Oda *and T. Matsunaga*****

*Tokyo University of Science, Japan, **Ube Industries, Ltd., Japan

08:25–08:40, EO-33 Oral

Surface modified functional nanoparticles as stabilizing agents of multi-component non-aqueous suspensions

M. Iijima**, *K. Oguma, *A. Kurumiya***, *S. Morita**, *J. Tatami** *and H. Kamiya*****

*Graduate School of Environment and Information Sciences, Yokohama National University, Japan, **Graduate School of Bio-Applications and Systems Engineering, Tokyo University of Agriculture and Technology, Japan

08:40–08:55, EO-34 Oral

Fabrication of c-axis oriented Si_3N_4 ceramics using low and static magnetic field orientation process

T. Takahashi**, *N. Sugimoto, *J. Tatami*** *and M. Iijima*****

*Kanagawa Academy of Science and Technology, Japan, **Yokohama National University, Japan

08:55–09:10, EO-35 Oral

Investigation of antibacterial and bioactive properties for graphene oxide-doped mesoporous bioactive glass

S.-J. Shih**, *C.-Y. Chen *and Y.-C. Lin****

*Department of Materials Science and Engineering, National Taiwan University of Science and Technology, Taiwan, **Department of Materials Science and Engineering, Feng Chia University, Taiwan

09:10–09:25, EO-36 Oral

Preparation and electrical properties of lead free thick film resistors

S.-J. Wang**, *C.-S. Hsi** *and S.-L. Fu**

*Department of Materials Science and Engineering, National United University, Taiwan, **Department of Electronic Engineering, I-Shou University, Taiwan

09:25–09:50, EI-37 Invited

Fabrication and properties of grain-oriented lead-free piezoelectric $BaTiO_3$-based ceramics sintered in reducing atmosphere

W. Sakamoto**, *H. Ichikawa**, *Y. Akiyama *and T. Yogo****

*EcoTopia Science Institute, Nagoya University, Japan, **Ricoh Co., Ltd., Japan

BREAK 09:50–10:05

10:05–11:55, Chair: ***Junichi Tatami***, Yokohama National University, Japan

10:05–10:30, EI-38 Invited

High performance SRBSN (sintered reaction bonded silicon nitride)

H.-D. Kim

Korea Institute of Materials Science, Korea

10:30–10:45, EO-39 Oral

Improvement of fracture toughness of ZrB_2-SiC composites with carbon interfaces

W.-M. Guo**, Y. You*, H.-T. Lin* and G.-J. Zhang

*School of Electromechanical Engineering, Guangdong University of Technology, China, **State Key Laboratory of High Performance Ceramics and Superfine Microstructures, Shanghai Institute of Ceramics, Shanghai, China

10:45–11:00, EO-40 Oral

Microstructure of interface formed in Al-B_4C joint

H. Kita**, S. Yamashita*, M. Sato, K. Sekine** and T. Kumazawa*

*Department of Molecular Design and Engineering, Graduate School of Engineering, Nagoya University, Japan, **Mino Ceramic Co., Ltd., Japan

11:00–11:15, EO-41 Oral

Assessment of the interfacial bond between nano particles of silicate aluminum and polyolefin composites on the view of mechanical and fracture properties

***R. El-Sheikhy** and M. Al-Shamrani*

Bughshan Research Chair in Expansive Clayl, Faculty of Engineering, King Saud University, Saudi Arabia

11:15–11:30, EO-42 Oral

Effect of heat treatment on morphology and crystallinity of cold-sprayed nanostructured TiO_2 coating

***T.B. Abd Rahim**, M. Sato, M. Yamada and M. Fukumoto*

Mechanical Engineering, Toyohashi University of Technology, Japan

11:30–11:55, EI-43 Invited

Investigation on the Corrosion Behavior of SiC Ceramic Matrix Composite in Molten Fluoride Salts

S. Dong**, H. Wang*,**, Y. Kan* and H. Zhou*

*State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China, **Graduate University of Chinese Academy of Sciences, China

Friday, July 10, 2015: Room I

Session A: Interface Characterization and Control for Nanoparticles and Powders (51st Summer Symposium on Powder Technology)

Co-organized by Research Group on Crystallization Process for Functional Fine Particle Synthesis and Research Group on Designs of Particle and Powder for Advanced Materials

08:00–10:00, Chair: ***Loredana Santo***, University of Rome "Tor Vergata", Italy

08:00–08:25, AI-68 Invited

Solid state conversion of piezoelectric single crystals

S.-J.L. Kang*, ***J.-H. Park**** ***and H.Y. Lee*****

*Materials Interface Laboratory, Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology, Korea, **Division of Material and Chemical Engineering, Sunmoon University, Korea

08:25–08:40, AO-69 Oral

A novel electrochemical sensor for luteolin based on hydroxyapatite-carbon nanotubes nanocomposite

F. Gao*, ***H. Tanaka****, ***F. Gao***** ***and Q. Wang*****

*Department of Chemistry, Graduate School of Science and Engineering, Shimane University, Japan, **Department of Chemistry and Environment Science, Minnan Normal University, China

08:40–08:55, AO-70 Oral

Silica-coating of nitrogen-doped titanium oxide particles and their electrical conductivity

Y. Kobayashi ***and T. Iwasaki***

Department of Biomolecular Functional Engineering, College of Engineering, Ibaraki University, Japan

08:55–09:10, AO-71 Oral

Microstructural analysis of Cu particulate reinforced Sn-Bi solder

O. Mokhtari ***and H. Nishikawa***

Joining and Welding Research Institute, Osaka University, Japan

09:10–09:35, AI-72 Invited

Direct bonding of copper to ceramics for thermal dissipation applications

W.-H. Tuan

Department of Materials Science and Engineering, National Taiwan University, Taiwan

09:35–10:00, AI-73 Invited

Fabrication of porous alumina ceramics using basic aluminum lactate as an inorganic binder

J. Tatami*, ***G. Tsuchibuchi*** ***and M. Iijima***

Graduate School of Environment and Information Sciences, Yokohama National University, Japan

BREAK 10:00–10:15

10:15–12:20, Chair: ***Yoshiyuki Shirakawa***, Doshisha University, Japan

10:15–10:30, AO-74 Oral

Strong and ductile, biomimetic aluminum composites fabricated by flake powder metallurgy

Z. Li, G. Fan, Z. Tan, Q. Guo and D. Zhang

The State Key Laboratory of Metal Matrix Composites, Shanghai Jiao Tong University, China

10:30–10:45, AO-75 Oral

Mg-based layered hydroxide salts and the packing reactor for chemical heat storage

S. Yamashita, Y. Sugie, A. Nishikawa and H. Kita

Department of molecular design & engineering, Nagoya University, Japan

10:45–11:00, AO-76 Oral

Compressive mechanical strengths of porous alumina compacts in initial sintering stage

H. Tominaga, Y. Hirata, S. Sameshima and T. Shimonosono

Department of Chemistry, Biotechnology, and Chemical Engineering, Kagoshima University, Japan

11:00–11:15, AO-77 Oral

A fundamental investigation for evaluation of a filler distribution in a composite material using ultrasonic properties

M. Yoshida*, Y. Kawarazaki*, J. Oshitani*, K. Gotoh* and K. Fujimori*

*Division of Chemistry and Biotechnology, Graduate School of Natural Science and Technology, Okayama University, Japan, **Division of Industrial Innovation Sciences, Graduate School of Natural Science and Technology, Okayama University, Japan

11:15–11:40, AI-78 Invited

Shape memory polymer composites for marine and aerospace applications

L. Santo and F. Quadrini

Department of Industrial Engineering, University of Rome “Tor Vergata”, Italy

11:40–12:05, AI-79 Invited

3D printing of the "liquid wood"

E. Puiu*, D. Nedelcu*, C. Ursu**, D. Vaideanu and M. Agop*****

*“Gheorghe Asachi” Tehnical University, Department of Machine Manufacturing Tehnologies, Romania, **"Petru Poni" Institute of Macromolecular Chemistry, Romania, ***“Al.I.Cuza” University, Faculty of Physics, Romania

12:05–12:20, AO-80 Oral

Effect of fumed silica properties on the thermal insulation performance of fibrous compact

T.-W. Lian*, A. Kondo**, T. Kozawa**, T. Ohmura, W.-H. Tuan**** and M. Naito****

*Graduate School of Engineering, Osaka University, Japan, **Joining and Welding Research Institute, Osaka University, Japan, ***Hamamatsu Research Laboratory, NICHIAS Corporation, Japan, ****Department of Materials Science and Engineering, National Taiwan University, Taiwan

Friday, July 10, 2015: Room III

Session C: International Symposium in Honor of Prof. Antoni P. Tomsia

08:00–10:00, Chair: ***Ulrike G.K. Wegst***, Dartmouth College, USA

08:00–08:30, CI-05 Invited

Bio-inspired interfacial materials with super-wettability

L. Jiang*,*****

*Institute of Chemistry, Chinese Academy of Sciences, China, **School of Chemistry and Environment, Beihang University, China

08:30–09:00, CI-06 Invited

Wet processing of graphene-based structures

E. Saiz*, E. García-Tuñon*, S. Barg****, E. D'Elia*, N. Ni*, R. Bell**, S. Eslava*****, R.C. Maher****** and C. Mattevi*******

*Center for Advanced Structural Ceramics, Department of Materials, Imperial College, UK, **Materials Science Centre, School of Materials, University of Manchester, UK, **Department of Chemistry, University of Warwick, UK, ***Department of Chemical Engineering, University of Bath, UK, ****The Blackett Laboratory, Imperial College London, UK, *****Department of Materials, Imperial College, UK

09:00–09:30, CI-07 Invited

Soft processing of functionalized graphenes and their hybrids via submerged liquid plasma [SLP] and electrochemical exfoliation [ECE] under ambient conditions

M. Yoshimura, J. Senthilnathan and K.S. Rao

Promotion Centre for Global Materials Research, Department of Material Science and Engineering, National Cheng Kung University, Taiwan

09:30–10:00, CI-08 Invited

Unidirectional freezing of suspensions: a molecular dynamics approach

J.D. Coninck

Physics of Surfaces and Interfaces Laboratory, University of Mons, Belgium

BREAK 10:00–10:15

10:15–12:30, Chair: ***Makio Naito***, JWRI, Osaka University, Japan

10:15–10:45, CI-09 Invited

Solution plasma processing for molecular technologies

N. Saito*,*****,******

*Institute of Innovation for Future Society, Nagoya University, Japan, **Graduate School of Engineering, Nagoya University, Japan, ***CREST-JST, JST, Japan

10:45–11:00, CO-10 Oral

Low temperature sinter joining with copper paste

Y. Gao*, *J. Jiu, S. Nagao, T. Sugahara and K. Suganuma

Institute of Scientific and Industrial Research, Osaka University, Japan

11:00–11:30, CI-11 Invited

Ultra heat-resistant die bonding with Ag for WBG power devices

K. Suganuma*, *S. Nagao, T. Sugahara and J. Jiu

Institute of Scientific and Industrial Research, Osaka University, Japan

11:30–12:00, CI-12 Invited

Mechanical and electrical properties of carbon-based aerogels

U.G.K. Wegst**, *D. Herron**, *S. Bauer**, *P. Likasith**· *and M. Kretschmar**·******

*Thayer School of Engineering, Dartmouth College, USA, **Chulalongkorn University, Thailand, ***Helmut Schmidt University, Germany

12:00–12:30, CI-13 Invited

Assignments for the production of better ceramics

K. Uematsu

Nagaoka University of Technology, Japan

Friday, July 10, 2015: Room II

Session E: Material Design and Evaluation

08:00–09:10, Chair: ***Tatsuki Ohji***, AIST, Japan

08:00–08:25, EI-44 Invited

Representation of thermal expansion coefficient of solid material with particulate inclusion

Y. Hirata

Department of Chemistry, Biotechnology, and Chemical Engineering, Kagoshima University, Japan

08:25–08:40, EO-45 Oral

Thermophysical properties and microstructure of ZrO_2 based composites by rare earth oxide addition

B.-K. Jang**, S. Kim, Y.-S. Oh*** and H.-T. Kim*****

*High Temperature Materials Unit, National Institute for Materials Science, Japan, **Engineering Ceramic Center, Korea Institute of Ceramic Engineering and Technology, Korea

08:40–08:55, EO-46 Oral

Thermal characteristics of Al_2O_3/NiAl composites

***H.-C. Hsu** and W.-H. Tuan*

Department of Materials Science and Engineering, National Taiwan University, Taiwan

08:55–09:10, EO-47 Oral

Densification of AlN ceramics by spark plasma sintering at 1450°C

R. Kobayashi**, Y. Nakajima*, K. Mochizuki*, K. Harata**, T. Goto**, K. Iwai and J. Tatami*****

*Faculty of Engineering, Tokyo City University, Japan, **Institute for Materials Research, Tohoku University, Japan, ***Graduate School of Environment and Information Sciences, Yokohama National University, Japan

Friday, July 10, 2015: Room II

Session D: Energy and Environment

09:15–10:05, Chair: ***Hua-Tay Lin***, Guangdong University of Technology, China

09:15–09:40, DI-12 Invited

Interface control of nanoparticles for advanced thermal properties of fluids

D. Singh

Energy Systems Division, Argonne National Laboratory, USA

09:40–10:05, DI-13 Invited

Low temperature pyrolysis and gasification of biomass and brown coal using catalysts from natural product

T. Takarada, B. Kongsomart and B. Tsedenbal

Division of Environmental Engineering Science, Graduate School of Science and Technology, Gunma University, Japan

BREAK 10:05–10:20

10:20–12:25, Chair: ***Hisao Makino***, CRIEPI, Japan

10:20–10:35, DO-14 Oral

Cu(In, Ga)Se_2 nanocrystallites synthesized from spent copper indium gallium diselenide targets

H.-I Hsiang**,**, C.-Y. Chiang*, W.-H. Hsu*, W.-S. Chen*,** and J.-E. Chang

*Department of Resources Engineering, National Cheng Kung University, Taiwan, **Resource Recycling and Management Research Center, National Cheng Kung University, Taiwan

10:35–10:50, DO-15 Oral

Hollow SiO_2/anatase hybrid particles with large surface area and narrower band-gap

W. Chen, C. Takai, T. Shirai and M. Fuji

Advanced Ceramics Research Center, Nagoya Institute of Technology, Japan

10:50–11:15, DI-16 Invited

Pseudocapacitive properties of Co_3O_4/carbon nanotube nanocomposites

T.-Y. Tseng

Department of Electronics Engineering, National Chiao Tung University, Taiwan

11:15–11:40, DI-17 Invited

Li containing oxide ceramics for Li ion batteries

Y. Ukyo

SACI, Kyoto University, Japan

11:40–11:55, DO-18 Oral

Structural and optoelectronic properties of alloyed $Sn_xMn_{1-x}S$ nanocrystals

P.-C. Huang**, M.O. Shaikh** and S.-C. Wang*

*Department of Materials Science and Engineering, National Cheng Kung University, Taiwan, **Department of Mechanical Engineering, Southern Taiwan University of Science and Technology, Taiwan

11:55–12:10, DO-19 Oral

Colloidal approach for high performance solid oxide fuel cell electrodes

K. Sato**, M. Arai*, K. Horiguchi*, T. Murakami**, K. Kuruma** and H. Abe*

*Division of Environmental Engineering Science, Graduate School of Science and Technology, Gunma University, Japan, **Joining and Welding Research Institute, Osaka University, Japan

12:10–12:25, DO-20 Oral

One-step mechanical processing to prepare LSCF/GDC composite particles for SOFC cathode

X. Xi, A. Kondo, T. Kozawa and M. Naito

Joining and Welding Research Institute, Osaka University, Japan

Wednesday–Friday, July 8–10, 2015: Room E

Exhibition Session

F-01 ***AGC CERAMICS CO. LTD.***

F-02 ***Hanaichi UltraStructure Research Institute***

F-03 ***HOSOKAWA MICRON CORPORATION***

F-04 ***KANEKA CORPORATION***

F-05 ***KURIMOTO, LTD.***

F-06 ***LIXIL CORPORATION***

F-07 ***MicrotracBEL Corp.***

F-08 ***OHKAWARA KAKOHKI CO., LTD.***

F-09 ***PRIMIX CORPORATION***

F-10 ***TOKUJU CORPORATION***

F-11 ***Toyo Aluminium K.K.***

F-12 ***POWREX CORPORATION***

F-13 ***The Society of Powder Technology, JAPAN***

F-14 ***Hosokawa Powder Technology Foundation***

F-15 ***Yamanashi Prefecture***