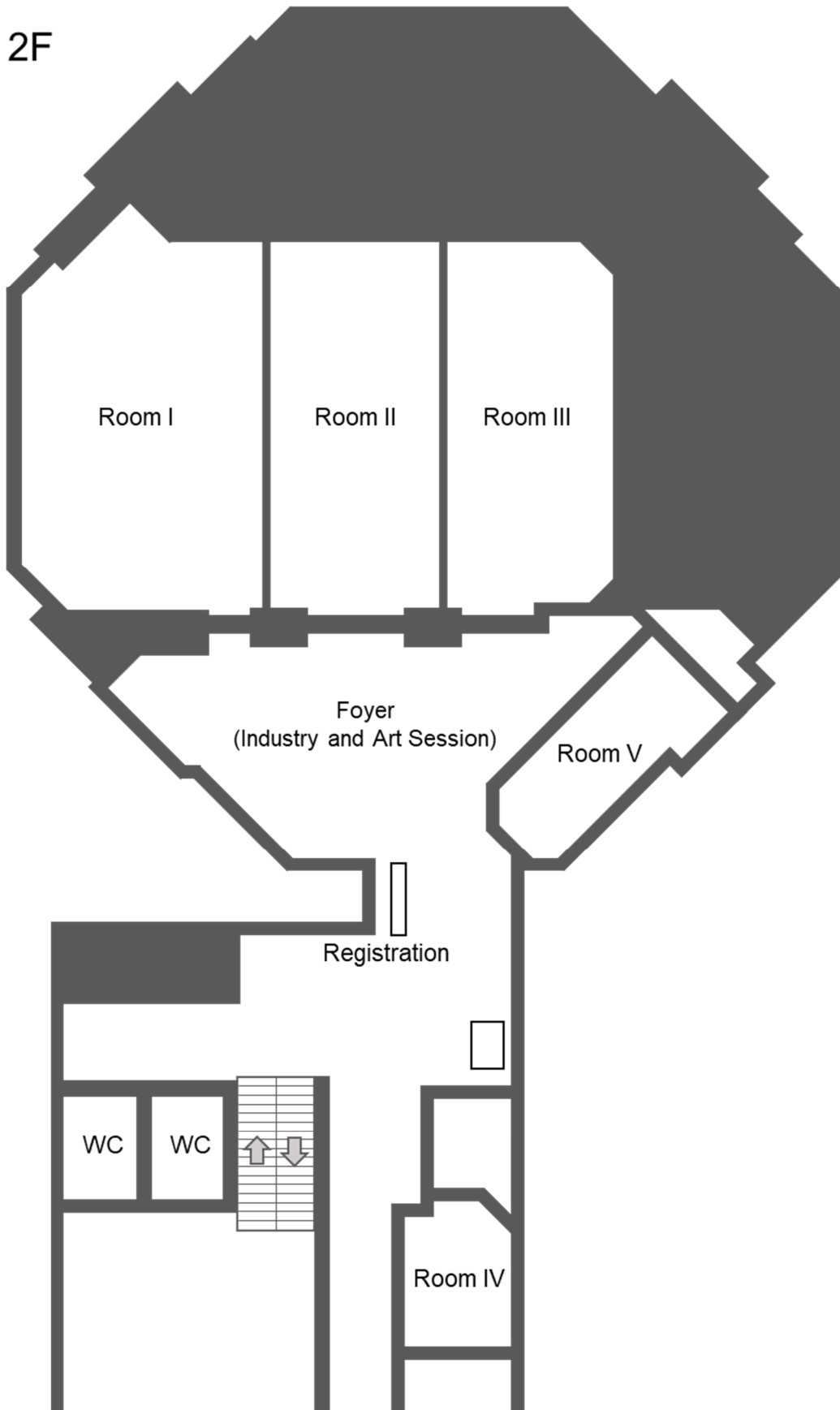


## PROGRAM OVERVIEW

<i>Date</i>	<i>Time</i>	<i>Program</i>					
Nov. 15 (Tue)	14:00 – 18:00	Registration					
	18:30 –	Welcome reception and dinner < Room I II III >					
Nov. 16 (Wed)	09:00 – 12:00	Session A < Room I >	Session B < Room II >	Session E < Room III >	Session F < Room IV >	<b>Nihonga Workshop &lt; Foyer &gt; 10:00 – 12:00</b>  <b>Industry and Art Session &lt; Foyer &gt;</b>	
	12:00 – 13:20	Photo and Lunch					
	13:20 – 17:10	Session A < Room I >	Session B < Room II >	Session C < Room III >	Session F < Room IV >		
	17:10 – 18:50	<b>Poster session &lt; Room V &gt; (Core time) Odd presentation numbers: 17:10 - 18:00 Even presentation numbers: 18:00 - 18:50</b>					
	19:00 –	Dinner					
Nov. 17 (Thu)	09:00 – 12:00	Session A < Room I >	Session D < Room II >	Session C < Room III >			
	12:00 – 13:00	Lunch					
	13:00 – 17:30	Excursion					
	18:30 – 20:30	Banquet < Room I II III >					
Nov. 18 (Fri)	09:00 – 12:10	Session E < Room I >	Session D < Room II >	Session C < Room III >			
	11:30 – 14:00	Lunch					

\*Accompanying Person's Program will be announced at the conference venue.

## CONFERENCE FLOOR PLANS



## **NOTE TO PRESENTERS**

### **Oral presentation**

- ✓ Including Q&A, invited talks and oral presentations will be 30 and 20 minutes, respectively.
- ✓ You can use your own PC for your presentation. The connection cables to the projector are D-sub 15-pin terminal and HDMI.
- ✓ In case you have problems, please bring USB flash media for your presentation.
- ✓ Please bring your own connection cables, particularly if you use an ultra-thin laptop or Macintosh.

### **Poster presentation**

- ✓ Maximum poster size is 900mm×1800mm. Please prepare your poster within a range. A0 in size (841mm x 1181mm) is recommended.
- ✓ Poster session will be held in room V.
- ✓ The presentation number will be put on the board. Please put your poster up at the designated place by 12:00 on Nov. 16, 2022. Posters can be posted from 17:00 on Nov. 15.
- ✓ The poster should be put up using double-sided tape, which will be provided by ICCCI2022.
- ✓ To avoid crowding the room, core time for posters with odd presentation numbers (e.g., P-A-01) will be from 17:10 to 18:00, and that with even numbers will be from 18:00 to 18:50.
- ✓ Posters must be removed by 12:00 on Nov. 17.

### **KONA Young Researcher Award**

With the support of the Hosokawa Powder Technology Foundation, the KONA Young Researcher Award will be presented to students and young researchers under the age of 35 for their outstanding poster presentation characterized by excellence in research, clarity in presentation, and personal knowledge in a discussion. The KONA Young Researcher Award winners will receive a certificate of commendation and a supplementary prize. The award ceremony will be held at the banquet on Nov. 17, 2022.

## Nov. 16, 2022

### Room I

#### Session A: Understanding and Controlling Various Inhomogeneity in Powders for Advanced Materials (57th Summer Symposium on Powder Technology)

09:00 – 11:20 Chair : Motoyuki Iijima (Yokohama National University, Japan)

09:00 – 09:30 1-I-A-01 INVITED

Surface modification using nanoparticle layer and its application

Kenji Iimura\*, Hiroshi Satone, Kouji Maeda

*University of Hyogo, Japan*

09:30 – 10:00 1-I-A-02 INVITED

Coated bio-based polymers by ceramic particles

Dumitru Nedelcu\*, Simona – Nicoleta Mazurchevici, Alina Mărguță, Bogdan Istrate, Constantin Cărașu

*"Gheorghe Asachi" Technical University of Iasi, Romania*

10:00 – 10:20 1-I-A-03

Direct polymer formation on powder surface by ball milling process

Yuki Nakashima\*, Manabu Fukushima

*National Institute of Advanced Industrial Science and Technology (AIST)*

10:20 – 10:40 1-I-A-04

Effect of kneading on the particle dispersion in the slurry with polyelectrolyte

Kenta Kitamura\*<sup>1,2</sup>, Takamasa Mori<sup>1,2</sup>

*1 Department of Chemical Science and Technology, Faculty of Bioscience and Applied Chemistry, Hosei University, Japan*

*2 Hosei University Research Institute for Slurry Engineering, Japan*

10:40 – 11:00

Coffee break

11:00 – 11:20 1-I-A-05

Design of controlled release dosage forms by powder bed and press-melting method

Hiromitsu Yamamoto \*, Koki Saito, Shota Niwa, Eri Nakayama, Toshiya Yasunaga, Noriko Ogawa

*Department of Pharmaceutical Engineering, School of Pharmacy, Aichi Gakuin University, Japan*

11:20 – 12:00 Chair : Makio Naito (Osaka University, Japan)

11:20 – 11:30

KONA Award ceremony

11:30 – 12:00 1-I-A-06 INVITED KONA Award lecture

Nanoparticle chromatography - From understanding of particle surfaces to property classification

Wolfgang Peukert\*, Lukas Gromotka

*Institute of Particle Technology, Friedrich-Alexander University Erlangen-Nürnberg, Germany*

12:00 – 13:20

Photo and Lunch

13:20 – 15:20 Chair : Naonori Sakamoto (Shizuoka University, Japan)

13:20 – 13:50 1-I-A-07 INVITED

Shaping and surface modification as keys towards innovative sorbent structures

Steven Mullens\*<sup>1</sup>, Nick Gys<sup>1,2</sup>, Kenny Wyns<sup>1</sup>, Bart Michiels<sup>1</sup>, Vera Meynen<sup>2</sup>

*1 Unit Sustainable Materials, VITO nv, Belgium*

*2 Laboratory for Adsorption and Catalysis, University Antwerp, Belgium*

13:50 – 14:20 1-I-A-08 INVITED

Preparation and characterization of phosphors based on the luminescence of 3d transition metal ions

Yuta Matsushima\*

*Yamagata University, Japan*

14:20 – 14:40 1-I-A-09

Synthesis and scale-up of MOF-801 powders as the precursor of Zr-based Materials

Yun Zou\*<sup>1</sup>, Hee-Jung Lee<sup>2</sup>, Sea-Hoon Lee<sup>1</sup>

*1 Extreme Materials Institute, Korea Institute of Materials Science (KIMS), Republic of Korea*

*2 Composite Research Division, Korea Institute of Materials Science (KIMS), Republic of Korea*

14:40 – 15:00 1-I-A-10

Synthesis of  $\text{NH}_4\text{CoPO}_4 \cdot \text{H}_2\text{O}$  platelets by wet milling with a bead mill and their conversion into  $\text{LiCoPO}_4$  cathodes for Li-ion batteries

Akira Kondo\*<sup>1</sup>, Toshihiro Ishii<sup>1</sup>, Takahiro Kozawa<sup>2</sup>, Makio Naito<sup>2</sup>

*1 Ashizawa Finetech Ltd., Japan*

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

15:00 – 15:20 1-I-A-11

Fabrication of mixed oxide ionic-electronic conductor-based porous/dense/porous-structured membrane by electrophoretic deposition process for oxygen separation application

Kento Ishii\*<sup>1</sup>, Chika Matsunaga<sup>2</sup>, Kiyoshi Kobayashi<sup>1</sup>, Adam J. Stevenson<sup>3</sup>, Caroline Tardival<sup>3</sup>, Tetsuo Uchikoshi<sup>1</sup>

*1 National Institute for Materials Science, Japan*

*2 National Institute of Advanced Industrial Science and Technology, Japan*

*3 Saint-Gobain Research Provence, France*

15:20 – 15:40

Coffee break

15:40 – 16:40 Chair : Yoshiyuki Shirakawa (Doshisha University, Japan)

15:40 – 16:00 1-I-A-12

Photocurable slurry design for shaping alumina ceramics with hollow space structures through free surface stereolithography

Motoyuki Iijima\*<sup>1</sup>, Taichi Abe<sup>2</sup>, Junichi Tatami<sup>1</sup>, Hitomi Kato<sup>3</sup>, Yusuke Fuji<sup>3</sup>

*1 Faculty of Environment and Information Sciences, Yokohama National University, Japan*

*2 Graduate School of Engineering Science, Yokohama National University, Japan*

*3 NGK INSULATORS, LTD.*

16:00 – 16:20 1-I-A-13

Rapid manufacturing process of porous  $\text{SiO}_2$  components: green machining of photocured w/o Pickering emulsions

Yoshihiko Yamanoi\*<sup>1</sup>, Junichi Tatami<sup>2</sup>, Motoyuki Iijima<sup>2</sup>

*1 Graduate School of Engineering Science, Yokohama National University, Japan*

*2 Faculty of Environment and Information Sciences, Yokohama National University, Japan*

16:20 – 16:40 1-I-A-14

Verification of lattice fringe observation ratio of nanoparticles by high resolution TEM for evaluation of crystallinity

Naonori Sakamoto\*<sup>1,2,3,4</sup>, Yuki Nakano<sup>3</sup>, Takahiko Kawaguchi<sup>2,3</sup>, and Naoki Wakiya<sup>1,2,3,4</sup>

*1 Research Institute of Electronics, Shizuoka University, Japan*

*2 Graduate School of Integrated Science and Technology, Shizuoka University, Japan*

*3 Faculty of Engineering, Shizuoka University, Japan*

*4 Graduate School of Science and Technology, Shizuoka University, Japan*

## Room II

### Session B: Powder Processing for Advanced Materials

09:00 – 10:40 Chair : Takahiro Kozawa (Osaka University, Japan)

09:00 – 09:30 1-II-B-01 INVITED

Possible continuous(successive) fabrication of nano-structured ceramic materials via soft solution processing without firing of powders

Masahiro Yoshimura\*<sup>1,2</sup>

*1 Dept of Mater.,Sci. and Eng., National Cheng Kung University, Taiwan*

*2 Tokyo Institute of Technology, Japan*

09:30 – 10:00 1-II-B-02 INVITED

Wet chemical synthesis of II-VI powders for sintering transparent ceramics

Yiquan Wu\*

*Kazuo Inamori School of Engineering, New York State College of Ceramics, Alfred University*

10:00 – 10:20 1-II-B-03

Synthesis and color tuning of titania-based inorganic pigments without addition of other transition metal elements

Jindi Cao, Takuya Hasegawa, and Shu Yin\*

*IMRAM, Tohoku University*

10:20 – 10:40 1-II-B-04

Zn-Al layered double hydroxide film functionalized by luminescent octahedral molybdenum cluster: ultraviolet-visible photoconductivity response

Thi Kim Ngan Nguyen\*<sup>1</sup>, Fabien Grasset<sup>2,3,4</sup>, Stéphane Cordier<sup>4</sup>, Noée Dumait<sup>4</sup>, Tetsuo Uchikoshi<sup>2,3</sup>

*1 International Center for Young Scientists, ICYS-SENGEN, Global Networking Division, National Institute for Materials Science (NIMS), Japan*

*2 Research Center for Functional Materials, National Institute for Materials Science (NIMS), Japan*

*3 CNRS–Saint-Gobain–NIMS, UMI 3629, Laboratory for Innovative Key Materials and Structures (LINK), National Institute for Materials Science (NIMS), Japan*

*4 Univ. Rennes-CNRS-Institut des Sciences Chimiques de Rennes, France*

10:40 – 11:00

Coffee break

11:00 – 12:00 Chair : Yiquan Wu (Alfred University, U.S.A.)

11:00 – 11:20 1-II-B-05

Effect of conductive additives on all-solid-state batteries using active material with dry coating of solid electrolyte

Eiji Hayakawa\*, Hideya Nakamura, Shuji Ohsaki and Satoru Watano

*Department of Chemical engineering, Osaka Metropolitan University, Japan*

11:20 – 11:40 1-II-B-06

Template-free preparation of macroporous Mn<sub>3</sub>O<sub>4</sub> and its application as anodes for Li-Ion batteries

Takahiro Kozawa\*, Fumiya Kitabayashi, Kayo Fukuyama, Makio Naito

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

11:40 – 12:00 1-II-B-07

Investigation of photothermal response and fluorescence imaging of water-soluble silicon quantum dots for theranostic applications

Irem Nur Gamze Ozbilgin\*<sup>1,2</sup>, Hiroyuki Yamada<sup>3,4</sup>, Junpei Watanabe<sup>3,5</sup>, Tomohiko Yamazaki<sup>1</sup>, Naoto Shirahata<sup>3,4,5</sup>, Tetsuo Uchikoshi<sup>1,2</sup>

*1 Research Center for Functional Materials, National Institute for Materials Science (NIMS), Japan*

*2 CNRS–Saint-Gobain–NIMS, IRL 3629, Laboratory for Innovative Key Materials and Structures (LINK), National Institute for Materials Science, Japan*

*3 International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), Japan*

*4 Graduate School of Chemical Sciences and Engineering, Hokkaido University, Japan*

*5 Department of Physics, Chuo University, Japan*

12:00 – 13:20

Photo and Lunch

13:20 – 15:20 Chair : Mitsuaki Matsuoka (Kansai University, Japan)

13:20 – 13:50 1-II-B-08 INVITED

Controlling the electrical conductivity of porous silicon carbide ceramics

Young-Wook Kim\*<sup>1</sup>, In-Hyuck Song<sup>2</sup>

*1 University of Seoul, Republic of Korea*

*2 Korea Institute of Materials Science, Republic of Korea*

13:50 – 14:20 1-II-B-09 INVITED

Mechanical reliability of silicon nitride ceramics

Tatsuki Ohji\*<sup>1,2</sup>, and Junichi Tatami<sup>1</sup>

*1 Yokohama National University, Japan*

*2 National Institute of Advanced Industrial Science and Technology (AIST), Japan*

14:20 – 14:40 1-II-B-10

Preparation of multifunctional Fe<sub>3</sub>O<sub>4</sub>@Ag@TiO<sub>2-x</sub>N<sub>x</sub> core-shell composite particles for dye adsorption and visible-light photocatalysis

Ya-Hsueh Lin, Wenjea J. Tseng\*

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

14:40 – 15:00 1-II-B-11

Encapsulation of juvenile hormone analogues for controlled release system using supercritical carbon dioxide

Tanjina Sharmin\*<sup>1,2</sup>, Kento Ono<sup>1,2</sup>, Taku Michael Aida<sup>1,2</sup>, Tomomitsu Satho<sup>3</sup>, Kenji Mishima<sup>1,2</sup>

*1 Faculty of Engineering, Fukuoka University, Japan*

*2 Research Institute of Composite Materials, Fukuoka University, Japan*

*3 Faculty of Pharmaceutical Sciences, Fukuoka University, Japan*

15:00 – 15:20 1-II-B-12

Spray-drying-assisted microstructure control of metal-organic frameworks for application to adsorbents and drug delivery carriers

Shunsuke Tanaka\*<sup>1,2</sup>, Shuhei Fujita<sup>1</sup>, Toshiki Nakajima<sup>1</sup>, Ryo Miyashita<sup>1</sup>, Kazunori Kadota<sup>3</sup>, Jun Yee Tse<sup>3</sup>, Hiromasa Uchiyama<sup>3</sup>, Yuichi Tozuka<sup>3</sup>

*1 Department of Chemical, Energy and Environmental Engineering, Kansai University, Japan*

*2 Organization for Research and Development of Innovative Science and Technology, Kansai University, Japan*

*3 Department of Formulation Design and Pharmaceutical Technology, Osaka Medical and Pharmaceutical University, Japan*



15:20 – 15:40  
Coffee break

15:40 – 16:50 Chair : Young-Wook Kim (University of Seoul, Republic of Korea)

15:40 – 16:10 1-II-B-13 INVITED

Nanostructured materials with advanced functional properties

A. Ferreiro<sup>1</sup>, G. Flores-Carrasco<sup>2</sup>, A. Urbieto<sup>3</sup>, P. Fernández<sup>3</sup>, L. Gomez-Villalba<sup>4</sup>, O. Milosevic<sup>5</sup>, M.E. Rabanal\*<sup>1</sup>

*1 Carlos III University and IAAB, High School of Engineering, Spain.*

*2 Tecnológico Nacional de México / ITS de Tepeaca, México,*

*3 Complutense University, Facultad Ciencias Físicas, Ciudad Universitaria, Spain*

*4 Institute of Geociencias-CSIC-UCM, Spain*

*5 Institute of Technical Sciences of Serbian Academy ad Arts, Serbia*

16:10 – 16:30 1-II-B-14

Effect of grinding process of coal fly ash on curing reaction of geopolymer from industrial by-products

Mitsuaki Matsuoka\*<sup>1</sup>, Takehiro Tanaka<sup>1</sup>, Norihiro Murayama<sup>1</sup>, Makio Naito<sup>2</sup>

*1 Department of Chemical, Energy and Environmental Engineering, Kansai University, Japan*

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

16:30 – 16:50 1-II-B-15

Hydroxyapatite-SiC filters prepared by electrophoretic deposition

Christopher L. Hassam\*<sup>1,2</sup>, Masako Uematsu<sup>1,2,3</sup>, David Berthebaud<sup>1</sup> Tetsuo Uchikoshi<sup>1,2,3</sup>

*1 LINK (CNRS-Saint Gobain-NIMS IRL 3629), NIMS, Japan*

*2 Research Center for Functional Materials, NIMS, Japan*

*3 Graduate School of Chemical Sciences and Engineering, Hokkaido Univers*

## Room III

### Session E: Material Design and Evaluation

09:00 – 10:40 Chair : Chika Takai (Gifu University, Japan)

09:00 – 09:30 1-III-E-01 INVITED

Novel TiO<sub>2</sub>/Ag/TiO<sub>2</sub> cotton-based nanocomposites for wastewater treatment

Milica Milošević\*<sup>1</sup>, Marija Radoičić<sup>1</sup>, Jelena Spasojević<sup>1</sup>, Zoran Šaponjić<sup>2</sup>

*1 Department of Radiation Chemistry and Physics, Institute of Nuclear Sciences, National Institute of the Republic of Serbia, University of Belgrade, Serbia*

*2 Institute of General and Physical Chemistry, Serbia*

09:30 – 10:00 1-III-E-02 INVITED

Smart material of Li<sub>2</sub>O-(Nb/Ta)<sub>2</sub>O<sub>5</sub>-TiO<sub>2</sub> solid solution having a unique periodical structure and their applications

Hiromi Nakano\*

*Cooperative Research Facility Center, Toyohashi University of Technology, Japan*

10:00 – 10:20 1-III-E-03

Fabrication of high strength Al<sub>2</sub>O<sub>3</sub> with different orientation in each layer by EPD in strong magnetic field

Tohru S. Suzuki\*<sup>1</sup>, Atsushi Nagase<sup>2,1</sup>, Hajime Kiyono<sup>2</sup>, Tetsuo Uchikoshi<sup>1</sup>

*1 Research Center for Functional Materials, National Institute for Materials Science, Japan*

*2 Applied Chemistry, Faculty of Engineering, Shibaura Institute of Technology, Japan*

10:20 – 10:40 1-III-E-04

Enhanced NH<sub>3</sub> sensing performance of Mo<sub>6</sub> cluster sulfurized MoS<sub>2</sub> nanocomposite film

Meiqi Zhang<sup>\*1,2,3</sup>, Fabien Grasset<sup>2,3,4</sup>, Noée Dumait<sup>4</sup>, Stéphane Cordier<sup>4</sup>, Toshihiro Shimada<sup>1</sup>, Yuji Masubuchi<sup>1</sup>, Tetsuo Uchikoshi<sup>1,2,3</sup>

*1 Graduate School of Chemical Sciences and Engineering, Hokkaido University, Japan.*

*2 Research Center for Functional Materials, National Institute for Materials Science (NIMS), Japan*

*3 Laboratory for Innovative Key Materials and Structures (LINK), IRL3629 CNRS-Saint Gobain-NIMS, National Institute for Materials Science, Japan*

*4 Institut des Sciences Chimiques de Rennes (ISCR), UMR 6626 CNRS – University of Rennes 1, France*

10:40 – 11:00

Coffee break

11:00 – 12:00 Chair : Tohru S. Suzuki (National Institute for Materials Science, Japan)

11:00 – 11:20 1-III-E-05

Sex determination of Japanese rhinoceros beetles based on their dropping shape using Mahalanobis-Taguchi system (MTS)

Chika Takai-Yamashita<sup>\*1</sup>, Seiji Yamashita<sup>2</sup>

*1 Faculty of Engineering, Gifu University, Japan*

*2 Graduate School of Engineering, Nagoya University, Japan*

11:20 – 11:40 1-III-E-06

Aggregation of phytoglycogen in water-ethanol mixtures characterized by small-angle X-ray scattering and dynamic light scattering measurements

Tero O. Kämäräinen\* <sup>1)</sup>, Kazunori Kadota <sup>1)</sup>, Jun Yee Tse <sup>1)</sup>, Hiromasa Uchiyama <sup>1)</sup>, Toshio Oguchi <sup>2)</sup>, Hiroshi Arima-Osonoi <sup>3)</sup>, Yuichi Tozuka <sup>1)</sup>

*1 Osaka Medical and Pharmaceutical University, Japan,*

*2 University of Yamanashi, Japan,*

*3 Comprehensive Research Organization for Science and Society, Japan*

11:40 – 12:00 1-III-E-07

Preparation and evaluation of three-component solid dispersion particles with using hydrophilic cyclodextrin derivative

Noriko Ogawa\*, Ayumi Nishikata, Toshiya Yasunaga, Hiromitsu Yamamoto

*Aichi Gakuin University, Japan*

12:00 – 13:20

Photo and Lunch

## Session C: International Symposium in Honor of Prof. Makio Naito

13:20 – 15:20 Chair : Sanjay Mathur (University of Cologne, Germany)

13:20 – 13:50 1-III-C-01 INVITED  
Powder processing for excellent advanced materials  
Makio Naito\*  
*Joining and Welding Research Institute, Osaka University, Japan*

13:50 – 14:20 1-III-C-02 INVITED  
The nexus of characterization and processing to produce high-quality ceramics  
Kevin G. Ewsuk\*  
*Retired - Sandia National Laboratories, USA*

14:20 – 14:50 1-III-C-03 INVITED  
Use of tetragonal zirconia polycrystals as biomedical implants  
Wei-Hsing Tuan\*<sup>1</sup>, Yung-Shin Cheng<sup>1</sup>, Che-Lun Tung<sup>1</sup>, Li-Yun Yeh<sup>1</sup>, Yu-Ping Lin<sup>1</sup>, Pei-Yi Hsu<sup>1</sup>, Po-Liang Lai<sup>2</sup>  
*1 Department of Materials Science and Engineering, National Taiwan University, Taiwan.*  
*2 Department of Orthopedic Surgery, Bone and Joint Research Center, Chang Gung Memorial Hospital at Linkou, College of Medicine, Chang Gung University, Taiwan.*

14:50 – 15:20 1-III-C-04 INVITED  
Silicon carbide ceramics with high thermal, electrical conductivity and other exceptional properties  
Pavol Sajgalik\*  
*Slovak Academy of Sciences, Slovakia*

15:20 – 15:40  
Coffee break

15:40 – 17:10 Chair : Kevin Ewsuk (Retired - Sandia National Laboratories)

15:40 – 16:10 1-III-C-05 INVITED  
Additive manufacturing: turning mind into matter  
Mrityunjay Singh\*  
*President, Global Alliance for Technology and Society, USA; President, World Academy of Ceramics, Italy; Past President, The American Ceramic Society;*

16:10 – 16:40 1-III-C-06 INVITED  
Effect of Al contained in polymer derived SiC crystals on creating stable crystal grain boundaries  
Toshihiro Ishikawa\*  
*Tokyo University of Science, Yamaguchi (Sanyo-Onoda City University), Japan*

16:40 – 17:10 1-III-C-07 INVITED  
Nanostructured ceramics for photon harvesting and drug delivery applications  
Sanjay Mathur\*  
*Chair, Inorganic and Materials Chemistry, University of Cologne, Germany*

## Room IV

### Session F: International Symposium on Modeling for Granular and Multi-phase Flows

09:00 – 10:40 Chair: Mikio Sakai (The University of Tokyo, Japan)

09:00 – 09:30 1-IV-F-01 INVITED

Hydrodynamics of liquid-liquid slug flow in mini-channels and its application for fine particle production

Satoko Fujioka\*

*Keio University, Japan*

09:30 – 10:00 1-IV-F-02 INVITED

Direct numerical simulation of granular and multiphase flows through filter microstructures obtained by image analysis

Toru Ishigami \*

*Hiroshima University, Japan*

10:00 – 10:20 1-IV-F-03

Filter performance analysis using convolutional deep learning neural networks

Mohammadreza Shirzadi\*, Toru Ishigami

*Graduate School of Advanced Science and Engineering, Hiroshima University, Japan*

10:20 – 10:40 1-IV-F-04

On the validity of reduced particle stiffness scaling for cohesive powder flows in DEM simulations

Shungo Nakae\*, Ryosuke Yamagami, Ei Leen Chan, Takuya Tsuji, Toshitsugu Tanaka, Kimiaki Washino

*Osaka University, Japan*

10:40 – 11:00

Coffee break

11:00 – 12:00 Chair: Satoko Fujioka (Keio University, Japan)

11:00 – 11:30 1-IV-F-05 INVITED

GPU accelerated multiphase flow, particle and solid interaction solver in one-fluid formulation

Liang Yang\*<sup>1</sup>, Andrew Buchan<sup>2</sup>, Jianhui Yang<sup>3</sup>

*1 Division of energy and sustainability, Cranfield University, UK*

*2 School of Engineering and Materials Science, Queen Mary University of London, UK*

*3 TOTAL E&P UK Limited, UK*

11:30 – 12:00 1-IV-F-06 INVITED

Resolved CFD–DEM Simulations of three-phase flows using controlled interface models

Kimiaki Washino\*, Giang T. Nguyen, Taichi Tsujimoto, Naoto Fujii, Ei L. Chan, Takuya Tsuji, Toshitsugu Tanaka

*Osaka University, Japan*

12:00 – 13:20

Photo and Lunch

13:20 – 15:20 Chair: Liang Yang (Cranfield University, UK)

13:20 – 13:50 1-IV-F-07 INVITED

Modelling of reacting flows and industry applications in steel industry decarbonization

Yansong Shen\*

*University of New South Wales, Australia*

13:50 – 14:10 1-IV-F-08

DEM-CFD modeling of limestones flowing-down in a combustion field in a rotary kiln

Susumu Tsuchiya\*<sup>1</sup>, Masaya Muto<sup>2</sup>, Yuta Umeno<sup>3</sup>, Takayuki Nishiie<sup>3</sup>, Ryoichi Kurose<sup>4</sup>

*1 Yabashi Industries CO., LTD., Japan*

*2 Department of Environmental Technology, Meijo University, Japan*

*3 Numerical Flow Designing CO., LTD., Japan*

*4 Department of Mechanical Engineering and Science, Kyoto University, Japan*

14:10 – 14:30 1-IV-F-09

Development of in-line measuring method of rheological properties for non-Newtonian food fluids

Nobuaki Ikeda\*<sup>1,3</sup>, Ayuri Kimoto<sup>1</sup>, Satoko Fujioka<sup>2</sup>, Koichi Terasaka<sup>2</sup>

*1 Graduate School of Keio University, Japan*

*2 Keio University, Japan*

*3 Kewpie Corporation, Japan*

14:30 – 15:00 1-IV-F-10 INVITED

ISPH-DEM coupling simulation for estimating internal erosion in soil

Mitsuteru Asai\*, Kumpei Tsuji

*Kyusyu University, Japan*

15:00 – 15:20 1-IV-F-11

A phase-change approach to landslide simulations: coupling finite strain elastoplastic TLSPH with non-Newtonian IISPH

Daniel Morikawa\*<sup>1</sup>, Mitsuteru Asai<sup>2</sup>, Haruki Osaki<sup>3</sup>

*1 JAMSTEC, Japan*

*2 Kyushu University, Japan*

15:20 – 15:40

Coffee break

15:40 – 17:10 Chair: Yansong Shen (UNSW, Australia))

15:40 – 16:10 1-IV-F-12 INVITED

On computational granular dynamics based digital twin: core technologies in the DEM

Mikio Sakai\*

*The University of Tokyo, Japan*

16:10 – 16:30 1-IV-F-13

Digitalization of powder processes through granular and multiphase flow simulation

Chitra Palaniswamy\*, Kenji Yamaguchi, Shoma Kato, Kaoru Watanabe

*Kozo Keikaku Engineering Inc.*

16:30 – 16:50 1-IV-F-14

Reduced-order models for the identification and calibration of DEM parameters

Shuo Li\*<sup>1</sup>, Guangtao Duan<sup>1</sup>, Mikio Sakai<sup>2</sup>

*1 Department of Nuclear Engineering & Management, School of Engineering, The University of Tokyo, Japan,*

*2 Resilience Engineering Research Center, School of Engineering, The University of Tokyo, Japan*

16:50 – 17:10      1-IV-F-15

Transient 3D CFD study of the dynamic raceway and fuel injection in blast furnaces

Yuting Zhuo\* and Yansong Shen

*University of New South Wales, Australia*

**Nov. 17, 2022**

## Room I

### Session A: Understanding and Controlling Various Inhomogeneity in Powders for Advanced Materials (57th Summer Symposium on Powder Technology)

09:00 – 10:00 Chair: Shingo Ishihara (Tohoku University, Japan)

09:00 – 09:20 2-I-A-01

Interface study of the lithium-ion conducting electrolyte-electrode compatibility using Focused Ion Beam, Scanning Electron Microscopy-Electron Dispersive X-ray Spectroscopy, and Laser Raman Microscopy

Efi Dwi Indari\*<sup>1</sup>, Shota Azuma<sup>1</sup>, Kento Ishii<sup>1</sup>, David Lechevalier<sup>2</sup>, Tetsuo Uchikoshi<sup>1</sup>, Vladimir Ouspenski<sup>3</sup>, Caroline Tardivat<sup>3</sup>

*1 Fine Particles Engineering group, National Institute for Materials Science, Japan*

*2 NIMS-Saint-Gobain-CNRS International Collaboration Center Link/UMI3629, Japan*

*3 Saint-Gobain Research Paris, France*

09:20 – 09:40 2-I-A-02

The effect of particle shape on diffusion behavior of fine particles in turbulent jet

Kenji Tanno\*, Kazuki Tainaka

*Central Research Institute of Electric Power Industry, Japan*

09:40 – 10:00 2-I-A-03

The change of particles dispersion state in slurries during thickening and its effect on the density of green bodies

Takamasa Mori\*, Daiki Takahashi, Daiki Fuji, Kenta Kitamura

*Department of Chemical Science and Technology, Faculty of Bioscience and Applied Chemistry, Hosei University, Japan*

10:00 – 10:20

Coffee break

10:20 – 12:00 Chair: Hideya Nakamura (Osaka Metropolitan University, Japan)

10:20 – 10:40 2-I-A-04

3D observation of internal structure of porous ceramics by confocal laser fluorescent microscopy

Masako Uematsu\*<sup>1,2</sup>, Kento Ishii<sup>1</sup>, Tetsuo Uchikoshi<sup>1,2</sup>

*1 National Institute for Materials Science, Japan*

*2 Hokkaido University, Japan*

10:40 – 11:00 2-I-A-05

Effect of packing structure on the relationship between saturation and elastic modulus by persistent homology

Shingo Ishihara\*<sup>1</sup>, George Franks<sup>2</sup>, Junya Kano<sup>1</sup>

*1 Tohoku University, Japan*

*2 University of Melbourne, Australia*



11:00 – 11:20 2-I-A-06

Origins of formation of non-uniform particle-filled structure in green compact prepared from concentrated slurry

Satoshi Tanaka\*

*Nagaoka University of Technology*

11:20 – 11:40 2-I-A-07

Heterogeneous evolution of pore distribution during sintering of a submicron alumina powder observed by using synchrotron X-ray CT

Gaku Okuma\*<sup>1</sup>, Toshio Osada<sup>1</sup>, Haruki Minagawa<sup>2</sup>, Yutaro Arai<sup>3</sup>, Ryo Inoue<sup>2</sup>, Hideki Kakisawa<sup>1</sup>, Satoshi Tanaka<sup>4</sup>, Fumihiro Wakai<sup>1</sup>

*1 Research Center for Structural Materials, National Institute for Materials Science (NIMS), Japan*

*2 Department of Mechanical Engineering, Tokyo University of Science, Japan*

*3 Department of Materials Science and Technology, Tokyo University of Science, Japan*

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

11:40 – 12:00 2-I-A-08

Density inhomogeneity appearing during sintering of alumina green body visualized by operando OCT observation

Junichi Tatami\*<sup>1</sup>, Mitsuki Tajima<sup>1</sup>, Motoyuki Iijima<sup>1</sup>, Takuma Takahashi<sup>2</sup>

*1 Yokohama National University, Japan*

*2 Kanagawa Institute of Industrial Science and Technology, Japan*

12:00 – 13:00

Lunch

13:00 – 17:30

Excursion

## Room II

### Session D: Energy and Environment

09:00 – 10:00 Chair: Tetsuo Uchikoshi (National Institute for Materials Science, Japan)

09:00 – 09:30 2-II-D-01 INVITED

Advanced physical separation technology to achieve both of carbon neutrality and resource recycling  
Chiharu Tokoro\*<sup>1,2</sup>

1 Waseda University

2 The University of Tokyo

09:30 – 10:00 2-II-D-02 INVITED

Recent research and development of biocoke in Thailand

Jintawat Chaichanawong\*

Advanced Material Processing Research Lab, Faculty of Engineering, Thai-Nichi Institute of Technology, Thailand

10:00 – 10:20

Coffee break

10:20 – 12:00 Chair: Yutaro Takaya (The University of Tokyo, Japan)

10:20 – 10:40 2-II-D-03

Degradation of polyphenylene sulfide non-woven bag-filter media by HCl or NO<sub>2</sub> gases at high temperature

Kunihiro Fukui\*, Genki Ichiba, Masaaki Yamada, Tomonori Fukasawa, Toru Ishigami

Chemical Engineering Program, Graduate School of Advanced Science and Engineering, Hiroshima University, Japan

10:40 – 11:00 2-II-D-04

Light-dependent ionic-electronic conduction of octahedral molybdenum cluster film prepared by electrophoretic deposition

Tetsuo Uchikoshi\*<sup>1,2</sup>, Thi Kim Ngan Nguyen<sup>2,3</sup>, Kenshi Harada<sup>2,4</sup>, Fabien Grasset<sup>2,5</sup>, Stéphane Cordier<sup>5</sup>, Noée Dumait<sup>5</sup>, Motohide Matsuda<sup>4</sup>

1 Research Center for Functional Materials, National Institute for Materials Science (NIMS), Japan

2 CNRS–Saint-Gobain–NIMS, IRL 3629 LINK, National Institute for Materials Science, Japan

3 International Center for Young Scientists (ICYS), National Institute for Materials Science, Japan

4 Graduate School of Science and Technology, Kumamoto University, Japan.

5 Univ. Rennes-CNRS-Institut des Sciences Chimiques de Rennes (ISCS), UMR6226, France

11:00 – 11:20 2-II-D-05

Reduction characteristics of trace elements concentration on mineral liberation from pulverized coal

Ayaka Takeda\*, Hiroyuki Akiho, Yoshiko Hiei, Naoki Noda, Hisao Makino

Central Research Institute of Electric Power Industry, Japan

11:20 – 11:40 2-II-D-06

Galvanic corrosion inhibition from the aspect of bonding orbital theory in Cu/Ru barrier CMP

Ganggyu Lee\*<sup>1</sup>, Sungmin Kim<sup>1</sup>, Hojin Jeong<sup>2</sup>, Donghwan Kim<sup>1</sup>, Myungju Woo<sup>1</sup>, Yeram Lee<sup>1</sup>, Kangchun Lee<sup>3</sup>,  
Yewhan Kim<sup>4</sup>, Taeseup Song<sup>1</sup>, and Ungyu Paik<sup>1</sup>

*1 Department of Energy Engineering Hanyang University, Republic of Korea*

*2 Department of Nanoscale Semiconductor Engineering, Hanyang University, Republic of Korea*

*3 Foundry Process Development Team, Semiconductor R&D center, Samsung Electronics, Republic of Korea*

*4 Memory Material Engineering Group, Memory Business Division, Samsung Electronics, Republic of Korea"*

11:40 – 12:00 2-II-D-07

Analysis on scattered fine particles characteristics imitating microparticulates movement from metal cutting

Andrey Stephan Siahaan\*<sup>1</sup>, Hideki Kawai<sup>2</sup>, Hiroshi Nogami<sup>1</sup>

*1. Tohoku University, Japan*

*2. Muroran Institute of Technology, Japan*

12:00 – 13:00

Lunch

13:00 – 17:30

Excursion

## Room III

### Session C: International Symposium in Honor of Prof. Makio Naito

09:00 – 10:00 Chair: Rolf Wäsche (Retired - BAM, Germany)

09:00 – 09:30 2-III-C-01 INVITED

Process technologies and applications of Basalt fiber reinforced SiOC composites

~ From polymer process technologies to ceramic-like composite performance ~

Rainer Gadow\*

*Universitaet Stuttgart, Germany*

09:30 – 10:00 2-III-C-02 INVITED

Synchrotron X-ray evaluations of magnesium/steel joints fabricated using impact welding

Dileep Singh\*

*Argonne National Laboratory, USA*

10:00 – 10:20

Coffee break

10:20 – 11:50 Chair: Rainer Gadow (University of Stuttgart, Germany)

10:20 – 10:50 2-III-C-03 INVITED

Formation of grain boundary phases during sintering of niobium carbide with nickel matrix

Rolf Wäsche\*<sup>1</sup>, Gabriele Steinborn<sup>1</sup>, Ilona Dörfel<sup>1</sup>, Martina Menneken<sup>2</sup>, Shuigen Huang<sup>3</sup> and Mathias Woydt<sup>1</sup>

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

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

*3 Katholieke Universiteit Leuven (KUL), Belgium*

10:50 – 11:20 2-III-C-04 INVITED

Atomic structure controlled synthesis of single walled carbon nanotubes via the floating catalyst chemical vapor deposition (FC-CVD) method

Esko I. Kauppinen\*

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

11:20 – 11:50 2-III-C-05 INVITED

Rational design in photoresponsive hierarchical nanomaterials processing

Olivera Milosevic\*<sup>1</sup>, Maria Eugenia Rabanal<sup>2</sup>, Lidija Mancic<sup>1</sup>, Milica Milosevic<sup>3</sup>

*1 Institute of Technical Sciences of the Serbian Academy of Sciences and Arts, Serbia*

*2 University Carlos III, Materials Science and Engineering and Chemical Engineering Department, Spain*

*3 Vinca Institute of Nuclear Sciences, University of Belgrade, National Institute of the Republic of Serbia, Serbia*

12:00 – 13:00

Lunch

13:00 – 17:30

Excursion

## Nov. 18, 2022

### Room I

#### Session E: Material Design and Evaluation

09:00 – 11:10 Chair: Maria Eugenia Rabanal (Carlos III University of Madrid, Spain)

09:00 – 09:30 3-I-E-01 INVITED

Surface modification of low-dimensional nanostructured oxides for controlling various physical-chemical functions

Yonghyun Cho<sup>1</sup>, Yoshifumi Kondo<sup>1,2</sup>, Hyunsu Park<sup>1</sup>, Hisataka Nishida<sup>1</sup>, Sunghun Cho<sup>1</sup>, Tomoyo Goto<sup>1,3</sup>, Tohru Sekino\*<sup>1</sup>

*1 SANKEN, Osaka University, Japan*

*2 Graduate School of Engineering, Osaka University, Japan*

*3 Institute for Advanced Co-Creation Studies, Osaka University, Japan*

09:30 – 09:50 3-I-E-02

The quantitative evaluation of correlation between flame retardant filler/matrix resin interfacial properties and mechanical properties in 2DPGFRP using AE test method

Miyu Sugai\*<sup>1</sup>, Masashi Koyama<sup>2</sup>

*1 Graduate School of Mechanical Engineering, Meisei University, Japan*

*2 Program in Mechanical Engineering, Meisei University, Japan*

09:50 – 10:10 3-I-E-03

Thermal diffusivity of thermal insulation composite made of fumed Al<sub>2</sub>O<sub>3</sub>, SiC powder and ceramic fiber by the laser flash method

Megumi Akoshima\*<sup>1</sup>, Haruka Abe<sup>1</sup>, Akira Kondo<sup>2</sup>, Makio Naito<sup>2</sup>

*1 National Institute of Advanced Industrial Science and Technology, Japan*

*2 Osaka University, Japan*

10:10 – 10:30 3-I-E-04

An novel evaluating method for surface smoothness of composite film of well-dispersed silica particles

Quanyue Wen\*, Fumiya Tanahashi, Masayoshi Fuji

*Nagoya Institute of Technology, Advanced Ceramics Research Center, Japan*

10:30 – 10:50 3-I-E-05

Research on the compressive strength of mortar incorporating biomineralized waste tire rubber fine aggregate

Chung-Hao Wu\*<sup>1</sup>, Yuan-Shun Yang<sup>2</sup>, Zheng-Wen Xu<sup>2</sup>

*1 Department of Civil Engineering, National Kaohsiung University of Science and Technology, Taiwan*

*2 Department of Civil Engineering, Chung Yuan Christian University, Taiwan*

10:50 – 11:10 3-I-E-06

Fabrication of ceramic-metal dual phase oxygen separation membrane by spark plasma sintering process

Aunsaya Eksatit\*<sup>1,2</sup>, Kento Ishii<sup>1</sup>, Kiyoshi Kobayashi<sup>1</sup>, Tohru S. Suzuki<sup>1</sup>, Tetsuo Uchikoshi<sup>1,2</sup>

*1 National Institute for Materials Science, Japan*

*2 Graduate School of Chemical Sciences and Engineering, Hokkaido University, Japan*

11:30 – 14:00

Lunch

## Room II

### Session D: Energy and Environment

09:00 – 10:50 Chair: Tatsuki Ohji (AIST, Japan)

09:00 – 09:30 3-II-D-01 INVITED

Novel catalytic combustion-type carbon monoxide gas sensor having high selectivity at moderate temperature

Nobuhito Imanaka\*

*Osaka University, Japan*

09:30 – 10:00 3-II-D-02 INVITED

Polymer-derived microstructured carbon/SiCX (X=O, N)-based high temperature strain gauge

Ralf Riedel\*<sup>1</sup>, Emmanuel Ricohermoso<sup>1</sup>, Emanuel Ionescu<sup>1,2</sup>

*1 Technische Universität Darmstadt, Germany*

*2 Fraunhofer Institution for Materials Recycling and Resource Strategies IWKS, Germany*

10:00 – 10:20 3-II-D-03

Transparent coating made of transition metal clusters for solar control applications

Clement Lebastard\*<sup>1-2-3</sup>, Maxence Wilmet<sup>4</sup>, Jeremie Teisseire<sup>4</sup>, Karine Costuas<sup>1</sup>, Fabien Grasset<sup>1-2-3</sup>, Stephane Cordier<sup>1</sup>, Tetsuo Uchikoshi<sup>2-3</sup>

*1 Univ. Rennes-CNRS-Institut des Sciences Chimiques de Rennes, France*

*2 CNRS-Saint-Gobain-NIMS, IRL 3629, Laboratory for Innovative Key Materials and Structures, National Institute for Materials Science, Japan*

*3 Research Center for Functional Material, National Institute for Materials Science, Japan*

*4 Saint-Gobain Research Paris, France*

10:20 – 10:50 3-II-D-04 INVITED

Interface engineering for high-performance all-solid-state batteries with lithium metal anodes

Taeseup Song\*<sup>1</sup>, Ho Bum Park<sup>1</sup>, Jeongheon Kim<sup>1</sup>, Seungwoo Lee<sup>1</sup>, Yeon-Gil Jung<sup>2</sup>, Jeong-gu Yeo<sup>3</sup>, Jeonghyun Kim<sup>4</sup>

*1 Department of Energy Engineering Hanyang University, Republic of Korea*

*2 School of Materials Science and Engineering, Changwon National University, Republic of Korea*

*3 Energy Conversion & Storage Materials Laboratory, Korea Institute of Energy Research, Republic of Korea*

*4 Department of Electronics Convergence Engineering, Kwangwoon University, Republic of Korea*

10:50 – 12:10 Chair: Junichi Tatami (Yokohama National University, Japan)

10:50 – 11:10 3-II-D-05

Stable artificial solid electrolyte interphase with lithium chloride and lithium selenide for dendrite-free lithium metal anodes

Yongmin Jung\*, Jaeik Kim, Joonhyeok Park, Keemin Park, Taeseup Song, Ungyu Paik

*Department of Energy Engineering Hanyang University, Republic of Korea*

11:10 – 11:30 3-II-D-06

Size control and particle formation mechanism of sulfide-based solid electrolyte particles via liquid-phase synthesis

Shuji Ohsaki\*, Takeru Yano, Akihiro Hatada, Chinatsu Tatsuda, Eiji Hayakawa, Hideya Nakamura, Satoru Watano

*Department of Chemical Engineering, Osaka Metropolitan University, Japan*

11:30 – 11:50      3-II-D-07

A novel prospect of sulfide-based ceramics for energy saving applications

Cédric Bourghès<sup>\*1,2</sup>, Guillaume Lambard<sup>1</sup>, Toshiyuki Nishimura<sup>1</sup>, Satoshi Ishii<sup>1</sup>, Takao Mori<sup>1</sup>

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

*2 International Center for Young Scientist (ICYS), National Institute for Materials Science (NIMS), Japan*

11:50 – 12:10      3-II-D-08

In-situ photodeposition of MoS<sub>x</sub> as a co-catalyst on TiO<sub>2</sub> nanoparticles for efficient photocatalytic H<sub>2</sub> evolution

Xinxin Jiang\*, Masayoshi Fuji

*Nagoya Institute of Technology, Japan*

12:10 – 14:00

Lunch

## Room III

### Session C: International Symposium in Honor of Prof. Makio Naito

09:00 – 10:30 Chair: Wolfgang Peukert (Friedrich Alexander University - Erlangen Nuremberg, Germany)

09:00 – 09:30 3-III-C-01 INVITED

Unique Li<sup>+</sup>/e<sup>-</sup> path construction by environmental friendly and cost-effective solvent-free electrode manufacturing for high energy density li-ion batteries

Ungyu Paik\*, Keemin Park, Seungcheol Myeong, Jiwoon Kim, Minsung Kim

*Department of Energy Engineering, Hanyang University, Seoul, Republic of Korea*

09:30 – 10:00 3-III-C-02 INVITED

Stereolithography and molding techniques for the production of ceramic 3D structures

Shoji Maruo\*

*Yokohama National University, Japan*

10:00 – 10:30 3-III-C-03 INVITED

Advanced materials for space applications

Loredana Santo, Fabrizio Quadrini\*

*University of Rome Tor Vergata*

11:30 – 14:00

Lunch



P-A-01

Wet mechanical route to synthesize morphology-controlled  $\text{NH}_4\text{ZnPO}_4$  and its application for ammonia gas absorption

Tai Hashiba \*, Takahiro Kozawa, Makio Naito

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

P-A-02

Evolution of inhomogeneous internal structure in ceramic slurry during drying

~ Approach from operand observation by OCT-TG combined system ~

Hirosa Kuroda\*<sup>1</sup>, Junichi Tatami<sup>2</sup>, Motoyuki Iijima<sup>2</sup>, Takuma Takahashi<sup>3</sup>

*1 Graduate School of Engineering Science, Yokohama National University, Japan*

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

*3 Kanagawa Institute of Industrial Science and Technology, Japan*

P-A-03

Simple and rapid synthesis of metal-organic framework CALF-20 via mechanochemical route for  $\text{CO}_2$  capture and separation

Shota Kitai \*<sup>1</sup>, Shunsuke Tanaka<sup>1,2</sup>, Miki Sugita<sup>3</sup>, Takahiko Takewaki<sup>3</sup>

*1 Graduate School of Science and Engineering, Kansai University, Japan*

*2 Organization for Research and Development of Innovative Science and Technology, Kansai University, Japan*

*3 Yokohama Research Center, Mitsubishi Chemical Corporation, Japan*

P-A-04

Synthesis of PHI type zeolite showing the structural flexibility for  $\text{CO}_2$  adsorption

Yuto Higuchi \*<sup>1</sup>, Shunsuke Tanaka<sup>1,2,3</sup>

*1 Graduate School of Science and Engineering, Kansai University, Japan*

*2 Department of Chemical, Energy and Environmental Engineering, Kansai University, Japan*

*3 Organization for Research and Development of Innovative Science and Technology, Kansai University, Japan*

P-A-05

Enhancement of photoluminescence intensity of  $\text{Li-M-Ti-O:Mn}^{4+}$  (M = Ta or Nb) phosphors

Fumiaki Shirakawa\*<sup>1</sup>, Kai Kameyama<sup>1</sup>, Hiromi Nakano<sup>2</sup>

*1 Department of applied chemistry and life science, Toyohashi University of Technology, Japan*

*2 Cooperative research facility center, Toyohashi University of Technology, Japan*

P-A-06

Influence of crystal structure on the photoluminescence property of  $\text{Ca}_2(\text{Si, P})\text{O}_4:\text{Ce}^{3+}$  phosphor

Atsushi Higashide\*<sup>1</sup>, Shota Ando<sup>1</sup>, Hiromi Nakano<sup>2</sup>

*1 Department of Applied Chemistry and Life Science, Toyohashi University of Technology, Japan*

*2 Cooperative Facility Center, Toyohashi University of Technology, Japan*

P-A-08

Design of interparticle photo-cross-linkable  $\text{SiO}_2$  suspensions having long term stability

Kengo Nishiyama\*<sup>1</sup>, Junichi Tatami<sup>2</sup>, Motoyuki Iijima<sup>2</sup>

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*2 Faculty of Environment and Information Sciences, Yokohama National University, Japan*

P-A-09

Rheological properties of concentrated  $\text{TiO}_2$  aqueous slurries stabilized by comb-like polymer dispersants with different structures

Fumiya Ito\*<sup>1</sup>, Takuya Honda<sup>2</sup>, Haruka Komuro<sup>2</sup>, Fumitaka Yoshikawa<sup>2</sup>, Junichi Tatami<sup>3</sup>, Motoyuki Iijima<sup>3</sup>

*1 Graduate School of Engineering Science, Yokohama National University, Japan*

*2 NOF Corp., Japan*

*3 Faculty of Environment and Information Sciences, Yokohama National University, Japan*

P-A-10

Design of highly stabilized interparticle photo-cross-linkable o/w Pickering emulsions for shaping porous ceramic materials

Shogo Tsutaki\*<sup>1</sup>, Junichi Tatami<sup>2</sup>, Motoyuki Iijima<sup>2</sup>

*1 Collage of Engineering Science, Yokohama National University, Japan*

*2 Faculty of Environment and Information Sciences, Yokohama National University, Japan*

P-A-11

Aqueous based interparticle photo-cross-linkable suspensions for fabricating complex structured transparent SiO<sub>2</sub> glass components

Bohua Ma\*<sup>1</sup>, Junichi Tatami<sup>2</sup>, Motoyuki Iijima<sup>2</sup>

*1 Graduate School of Engineering Science, Yokohama National University, Japan*

*2 Faculty of Environment and Information Sciences, Yokohama National University, Japan*

P-A-12

Predictive simulation of oiling-out in anti-solvent crystallization using a phase-field model

Yuhei Tsugawa\*, Mikio Yoshida, Yoshiyuki Shirakawa

*Graduate School of Science and Engineering, Doshisha University, Japan*

P-A-13

Effect of debinding process on the microstructure and mechanical properties of SiO<sub>2</sub> green bodies prepared from interparticle photo-cross-linkable suspension

Sayaka Yamada\*, Junichi Tatami, Motoyuki Iijima

*Yokohama National University, Japan*

P-A-14

Effects of charged nanoparticles and weak electric field on nanoparticle translocation across cell membranes

Takumi Okamura\*<sup>1</sup>, Hideya Nakamura<sup>1</sup>, Ryuji Kawano<sup>2</sup>, Mahiro Suzuki<sup>2</sup>, Shuji Ohsaki<sup>1</sup>, Satoru Watano<sup>1</sup>

*1 Osaka Metropolitan University, Japan*

*2 Tokyo University of Agriculture and Technology, Japan*

P-A-15

Development of a bonding process of photo-cured SiO<sub>2</sub> green bodies using interparticle photo-cross-linkable suspension

Yuki Hiroshige\*, Junichi Tatami, Motoyuki Iijima

*Yokohama National University, Japan*

P-A-16

Evaluation of dewaxing behavior of alumina green body by a combined OCT/TG/FT-IR system and thermomechanical analysis

Mariko Minami\*, Junichi Tatami, Motoyuki Iijima

*Yokohama National University*

P-A-17

3-dimensional visualization of inhomogeneous structure by in-situ OCT observation during sintering of Al<sub>2</sub>O<sub>3</sub> ceramics

Mizuki Izawa\*, Junichi Tatami, Motoyuki Iijima

*Yokohama National University, Japan*

P-A-18

Transparency and photoluminescence of gas-pressure sintered Lu- $\alpha$ -SiAlON:Ce<sup>3+</sup> ceramics

Kohei Aminaka\*<sup>1</sup>, Junichi Tatami<sup>2</sup>, Motoyuki Iijima<sup>2</sup>, Takuma Takahashi<sup>3</sup>

1) Graduate School of Engineering Science, Yokohama National University, Japan

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

3) Kanagawa Institute of Industrial Science and Technology, Japan

P-A-19

Amorphization of metal-organic frameworks ZIF-8 and its application to fabrication of gas separation membranes

Hiroto Maruta\*<sup>1</sup>, Shunsuke Tanaka<sup>1,2</sup>

1 Graduate School of Science and Engineering, Kansai University, Japan

2 Organization for Research and Development of Innovative Science and Technology, Kansai University, Japan

P-A-20

Simultaneous in-situ observation of changes in internal structure and rheological properties of alumina slurry with increasing temperature using an OCT-rheometer combined system

Miu Nakamura\*, Junichi Tatami, Motoyuki Iijima

Yokohama National University, Japan

P-A-21

Investigation of internal structural changes of alumina slurry droplets during freezing through OCT in-situ observation

Riko Yamazaki\*<sup>1</sup>, Junichi Tatami<sup>2</sup>, Motoyuki Iijima<sup>2</sup>, Shinya Kawaguchi<sup>3</sup>, Naoki Kondo<sup>4</sup>

1 Graduate School of Engineering Science, Yokohama National University

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

3 PRECI CO., LTD.

4 National Institute of Advanced Industrial Science and Technology

P-A-22

Size effect of pesticide microparticles on control of Botrytis cinerea

Ichikatsu Matsumoto\*, Mikito Tokumaru, Toshiyuki Nomura

Osaka Metropolitan University, Japan

P-A-23

Particle recovery of palladium ions by bioreduction using Escherichia coli

Tohko Asada\*, Toshiyuki Nomura

Osaka Metropolitan University, Japan

P-A-24

Dry particle coating process using twin-screw continuous kneader for pharmaceutically-engineered controlled-release microparticles with multi-layer structure

Hideki Ichikawa\*<sup>1</sup>, Toshinobu Uemura<sup>2</sup>, Tooru Andoh<sup>1</sup>, Yoshinobu Fukumori<sup>1</sup>

1 Kobe Gakuin University, Japan,

2 Pharma Poly Tech, Inc., Japan

P-A-25

Volume resistivity of AlN ceramics with sintering aid powders having various particle size distributions

Ken Kotsugai\*, Junichi Tatami, Motoyuki Iijima

Yokohama National University, Japan

P-B-01

Effect of characteristics of raw powders on crystal orientation of hydroxyapatite by molding under a magnetic field

Yuki Otsuka\*<sup>1</sup>, Isao Yamamoto<sup>2</sup>, Motoyuki Iijima<sup>3</sup>, Junichi Tatami<sup>3</sup>

*1 Graduate School of Engineering Science, Yokohama National University*

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*3 Faculty of Environment and Information Sciences, Yokohama National University, Japan*

P-B-02

Types of ball-milling induced deformation in iron particles

Syunsuke Fujita\*<sup>1</sup>, Satoshi Motozuka<sup>1</sup>, Hisashi Sato<sup>2</sup>

*1 Graduate School of Materials Science and Engineering, Kyushu Institute of Technology, Japan*

*2 Graduate School of Engineering, Nagoya Institute of Technology, Japan*

P-B-03

Effect of solvent dipole on drug-loading capacity of metal–organic frameworks

Kazuki Ohshima\*, Shuji Ohsaki, Hideya Nakamura, Satoru Watano

*Department of Chemical Engineering, Osaka Metropolitan University, Japan*

P-B-04

Hot-melt kneading process for producing composite particles of all-solid-state lithium sulfur batteries

Motoshi Iwao\*, Hiromi Miyamoto, Hideya Nakamura, Eiji Hayakawa, Shuji Ohsaki, Satoru Watano

*Osaka Metropolitan University, Japan*

P-B-05

High piezo response in undoped KNN sintered at low temperature

Lucile Vaschalde\*<sup>1,2</sup>, Encarnación G. Villora<sup>1</sup>, Kiyoshi Shimamura<sup>1,2</sup>

*1 National Institute for Materials Science (NIMS), Tsukuba, Japan*

*2 Graduate School of Advanced Science and Engineering, Waseda University, Japan*

P-B-06

Luminescence properties of translucent Ca- $\alpha$ -SiAlON:Eu<sup>2+</sup> ceramics

Taichi Ito\*<sup>1</sup>, Junichi Tatami<sup>1</sup>, Motoyuki Iijima<sup>1</sup>, Takuma takahashi<sup>2</sup>, Masahiro Yokouchi<sup>2</sup>

*1 Yokohama National University, Japan*

*2 Kanagawa Institute of Industrial Science and Technology, Japan*

P-B-07

Strength and deformation of single crystal 8YSZ at particulate scale

Mayuko Muramoto\*<sup>1</sup>, Junichi Tatami<sup>1</sup>, Takuma Takahashi<sup>1,2</sup>, Tsukaho Yahagi<sup>2</sup>, Hiromi Nakano<sup>3</sup>, Tatsuki Ohji<sup>1</sup>, Motoyuki Iijima<sup>1</sup>

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P-B-08

Denitration characteristics of aqueous metal nitrate solution by microwave heating with carbon nanotube-containing alumina composite ceramic jacket

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P-D-01

Fundamental study of separation of different resin plates bonded by solvent using wire explosion by pulsed discharge

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P-D-02

Improved photocatalytic performance of visible light-driven BiVO<sub>4</sub> nanoparticles via W and Mo doping

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P-D-03

Understanding high temperature adhesion induced by calcium compounds using model particles

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P-D-04

One-step solvothermal synthesis of NiCo-LDH@rGO nanosheets on carbon cloth as an electrode material for supercapacitor applications

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P-D-05

Silver recovery from spent photovoltaic panel sheets using high voltage pulse crushing

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P-D-06

Controlling particle adhesion at high temperatures: The use of nanoparticles as additives

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P-D-07

In-situ solvothermal deposition of a NiCo-LDH@ZnFe-LDH nanostructure on carbon cloth as a supercapacitor electrode

Shi-Hao Huang\*<sup>1</sup>, Chien-Yie Tsay<sup>1</sup>, Yu-Cheng Chang<sup>1</sup>, Chi-Jung Chang<sup>2</sup>, Chin-Yi Chen<sup>1</sup>

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P-D-08

Kinetic analysis of mechanical degradation of TBBPA with a planetary ball mill

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P-D-10

Boosting oxygen evolution reaction of nickel-iron borophosphate by amorphization

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P-D-11

Nickel oxide nanoparticle-decorated BaCo<sub>0.4</sub>Fe<sub>0.4</sub>Zr<sub>0.1</sub>Y<sub>0.1</sub>O<sub>3-δ</sub> composite cathode for high performance protonic ceramic fuel cells

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P-D-12

The role of al-based additives to control ash adhesion at high temperatures

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P-D-13

Carbon fiber cloth@BiOBr/CuO as immobilized membrane-shaped photocatalyst with enhanced H<sub>2</sub> production activity

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P-D-14

Effect of tellurite glass addition on microstructure and ionic conductivity of garnet-type solid electrolytes

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P-D-15

Study of the application of pulsed discharge to separation and recovery of carbon fiber from laminated CFRP

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P-D-16

Fabrication of g-C<sub>3</sub>N<sub>4</sub>/TiO<sub>2</sub> layer on ITO glass by electrophoretic deposition

Preyaphat Wongchaiya\* <sup>1,2</sup>, Thi Kim Ngan Nguyen <sup>3</sup>, Kento Ishii <sup>4</sup>, Pornapa Sujaridworakun <sup>1</sup>, Siriporn Larpkittaworn <sup>2</sup>, Tohru S. Suzuki <sup>4</sup>, Tetsuo Uchikoshi <sup>4</sup>

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P-E-01

A new analytical method for polydisperse system of submicron-sized particles

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P-E-02

Specific heat capacity measurement of composite materials for thermal insulation by differential scanning calorimeter

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P-E-03

Research of structural phase transition of SiO<sub>2</sub> particles by differential scanning calorimeter

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P-E-04

Preparation and optical properties of zinc oxide-octahedral molybdenum metal cluster nanocomposite coatings

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P-E-05

Gadolinium neutron capture therapy as a new treatment for head and neck cancer: tumor-killing effects on a masseter muscle invasion model

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P-E-06

Dielectric properties of SiO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub>-Na<sub>2</sub>O-CaO-K<sub>2</sub>O glass system in the millimeter-wave frequency range of 20-60 GHz

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P-E-07

Crystal orientation dependence of mechanical properties of  $\beta$ -Si<sub>3</sub>N<sub>4</sub> grains in high thermal conductive silicon nitride ceramics measured using microcantilever beam specimens

Mami Tanabe\*<sup>1</sup>, Junichi Tatami<sup>1</sup>, Motoyuki Iijima<sup>1</sup>, Tatsuki Ohji<sup>1</sup>, Tsukaho Yahagi<sup>2</sup>, Takuma Takahashi<sup>2</sup>, Daichi Minami<sup>2</sup>, Hiromi Nakano<sup>3</sup>

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P-E-08

Al/Cu Interface analysis of ceramic nanoparticle reinforced Al brazing filler

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P-E-09

Microstructure and mechanical properties of Sn-Bi solder reinforced with SnO<sub>2</sub> nanoparticles

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P-F-01

Microstructure optimization for the face mask performance by CFD-DPM model

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P-F-02

A novel coarse grain modeling for the adhesion force based on the liquid bridge force and the JKR theory in the discrete element method

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P-F-03

Nanoparticle translocation across lipid bilayer containing cholesterols

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P-F-04

Shear thickening mechanism analysis of concentrated slurry by Coupled DEM and CFD simulation

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P-F-05

Prediction of the milling speed under highly viscous condition with DEM simulation

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P-F-06

Nanoparticle translocation across cell membrane by applying electric field: Effect of particle size  
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P-F-07

Quantitative analysis of powder mixing mechanisms in dem simulations by a POD-ANOVA-based approach  
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P-F-08

Validation study on a coarse grained DEM-CFD for a three phase flow system  
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P-F-09

DEM study on powder mixing for non-spherical particles in a container blender  
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P-F-10

Boosting a large-scale SPH particle methods using many GPUs, including inter-node communications  
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P-F-11

High-order SPH method with spatial second-order accuracy for derivative operator  
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P-F-12

Modified gradient and Laplacian models in the SPH method to improve accuracy including negative pressure regions  
Yusuke Saeiki\*, Kumpei Tsuji, Mitsuteru Asai  
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P-F-13

DEM-CFD Study for the Density-Segregation in Vibrated-Fluidized Bed close to the Minimum Fluidization Velocity  
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