

# The Ceramic Society of Japan

## The 36th Fall Meeting

### Program

#### ■■September 06 (Wed) (Room A) ■■

#### 03. Fundamental science and new developments in ceramic-based biomaterials - Design of Novel Function for Biomaterials in Biomedical and Dental Engineering

##### (9:00) (Session Chairs: 中村 真紀・橋見 拓人)

- 1A01 Cell Adhesion Behavior to Polycaprolactone Nonwoven Fabric Containing Silica and Calcium-Based Particles (Nagoya University) ○SHIBUYA Ayaka (Kyushu Institute of Technology) NAKAMURA Jin\* (Nagoya University) SUZUKI Kazumasa (Kansai University) FUJIMOTO Kazushi (Nagoya University) OHTSUKI Chikara\*
- 1A02 Elucidation of hydration and protein adsorption states on chlorine-doped amorphous silica particles (Nagaoka University of Technology) ○KIMURA Reo (Ohara Quartz Co., Ltd.) INUI Masahiko Chatani Sunao (Kyushu Institute of Technology) MOTOZUKA Satoshi (Nagaoka University of Technology) LIU Zizhen TAGAYA Motohiro\*
- 1A03 Reactive Immobilization of TEOS on Hydroxyapatite Nanoparticles and Real-time Monitoring of Immunoglobulin Adsorption Behavior on the Surfaces (Nagaoka University of Technology) ○YOSHIDA Takeru AKUTSU Ryouta SUGIMOTO Kazuto YAMADA Syouta TAGAYA Motohiro\*

##### (10:00) (Session Chairs: 濱井 瞭・鈴木 来)

- 1A04 Importance of Polymer Strands' Entropic State Towards Mineral Formation: A Biomimetic Study (Hokkaido University) ○Marsudi Maradhana Agung Kiyama Ryuji Nonoyama Takayuki\* Gong Jian Ping
- 1A05 Preparation of bioactive HEMA-MPS-CaCl<sub>2</sub> sol-gel hybrid by light-induced polymerization (Kyushu Institute of Technology University of Lorraine) ○LE BRIS Lison (Kyushu Institute of Technology) Nakamura Jin MIYAZAKI Toshiki\*

##### (10:40) Break

##### (11:00) (Session Chairs: 野々山 貴行)

- 1A07 ★ Synthesis of Concentrated Colloidal Dispersions of Metal Hydroxide Nanoparticles and Their Applications as Bio-related Materials (Osaka Metropolitan University) ○TOKUDOME Yasuaki
- 1A09 総合討論

##### (13:20) (Session Chairs: 片岡 卓也・百田 風花)

- 1A14 Magnetic properties and heat-generation ability of ε-Fe<sub>2.3</sub>N nanoparticles for magnetic hyperthermia therapy (Tokyo Medical and Dental University) ○USUKI Soichiro (Tohoku University) OGAWA Tomoyuki (Tokyo Medical and Dental University) SHIMABUKURO Masaya YOKOI Taishi KAWASHITA Masakazu\*
- 1A15 In-vitro synthesis and evaluation of Fetuin-A/calcium phosphate nanoparticles (The University of Ehime) ○FUKUSHINA Eri TAKEBE Hiromichi (Jichi Medical of University) KURO-O Makoto

##### (14:00) (Session Chairs: 横井 太史・伊藤 佑一郎)

- 1A16 Synthesis and evaluation of Sr(II) ion-doped octacalcium phosphate containing dipicolinic acid (Okayama University) ○NISHIYAMA Seita KATAOKA Takuya YOSHIOKA Tomohiko (Industrial Technology Center of Okayama Prefecture) FUJII Eiji (Okayama University) HAYAKAWA Satoshi\*
- 1A17 Structural analysis of shark tooth enameloid of Lamnidae (Keio University) ○Akimoto Shiho Watanabe Hiroto Yuya Oaki Imai Hiroaki\*
- 1A18 Raman spectroscopic analysis of microstructural variations in hydroxyapatite ceramics and human teeth induced by laser irradiation (Kyoto Institute of Technology Kyoto Prefecture University of Medicine) ○IMAMURA Hayata (Kyoto Institute of Technology) ZHU Wenliang (Kyoto Institute of Technology Kyoto Prefecture University of Medicine) MARIN Elia (Kyoto Prefecture University of Medicine) ADACHI Tetsuya MIYAMOTO Nao (Tokyo Medical and Dental University) HIRAIISHI Noriko (Kyoto Prefecture University of Medicine) YAMAMOTO Toshiro KANAMURA Narisato (Kyoto Institute of Technology Kyoto Prefecture University of Medicine) PEZZOTTI Giuseppe\*

##### (15:00) Break

##### (15:20) (Session Chairs: 山田 真也・西山 青太)

- 1A20 Synthesis of Calcium Zinc Phosphate Coatings on Biodegradable Zinc and Zinc-based Alloy Surfaces (Kyoto University) ○Funamori Houmi Takai Shigeomi Yabutsuka Takeshi\*
- 1A21 Synthesis of calcium phosphate coating on bioabsorbable Mg-Zn-Zr alloy by aqueous solution method (Kyoto University) ○KIDA Shuntaro TAKAI Shigeomi\* YABUTSUKA Takeshi\*

##### (16:00) (Session Chairs: 宮崎 敏樹・Maradhana Agung Marsudi)

- 1A22 Apatite-forming ability of sulfuric acid treated Zr-Ti alloy modified by apatite nuclei. (Kyoto University) ○WU Yuwei Takai Shigeomi\* Yabutsuka Takeshi\*
- 1A23 Evaluation of Apatite-forming Ability of Polyether Ether Ketone by Heteroion-introduced Apatite Nucleation. (Kyoto University) ○Kambe Yuya Yamane Yuya Takai Shigeomi Yabutsuka Takeshi\*

##### (16:40) Break

##### (17:00) (Session Chairs: 李 誠鎮)

- 1A25 ★ Material characteristics and Mechanical properties of bone matrix (University of Turku) ○Nakamura Miho
- 1A27 総合討論

## ■ ■ September 06 (Wed) (Room B) ■ ■

### 08. Materials science of inorganic compounds utilizing elemental/structural diversities

#### 窒化モリブデン

##### (9:00) (Session Chairs: 辻本 吉廣)

- 1B01 Synthesis of molybdenum nitride using BN as a nitrogen source (Tohoku University) ○OSAKA Tenshin·YAMADA Takahiro\*·YAMANE Hisanori\*
- 1B02 High-pressure synthesis, crystal structure, and compressibility of a novel molybdenum nitride  $\text{Mo}_3\text{N}_5$  with a nitrogen dimer (Nagoya University) ○SASAKI Takuya·YAMAMOTO Takuro·Asano Shuto·NIWA Ken·HASEGAWA Masashi
- 1B03 Molybdenum nitride synthesized under air (Hokkaido University) ○DEMURA Momoka·MIURA Akira\*·(Yamanashi University) NAGAO Masanori·(Advanced Industrial Science and Technology) Lee Chul-Ho·GOTO Yosuke·(Tohoku University·JST) NAMBU Yusuke·(Australian Nuclear Science and Technology Organisation) AVDEEV Maxim·(Hokkaido University) MASUBUTI Yuji·(Osaka University) MITUDOME Takato·(Hokkaido University) FUJII Yuta·TADANAGA Kiyoharu

#### カルコゲナイド

##### (10:00) (Session Chairs: 辻本 吉廣)

- 1B04 Partial sulfidation of layered metal hydroxides using bis(trimethylsilyl)sulfide (Shinshu University) ○MURAMATSU Keisuke·SUGIMOTO Wataru

##### (10:20) Break

##### (10:40) (Session Chairs: 三浦 章)

- 1B06 Synthesis of a new gallium-based oxysulfide with disulfide ions:  $\text{La}_4\text{Ga}_2\text{S}_8\text{O}_3$  (National Institute for Materials Science) ○TSUJIMOTO Yoshihiro·Hong Yan·(Tokyo Institute of Technology) Fujii Kotaro·(University of Lille) Kabbour Houria·(Ochanomizu University) Chikamatsu Akira·(National Institute for Materials Science) Meng Yu·Matsushita Yoshitaka·(Tokyo Institute of Technology) Yashima Masatomo·(National Institute for Materials Science) Yamaura Kazunari
- 1B07 High-Pressure Synthesis and Order–Disorder Transition of Layered Oxytelluride  $\text{Ba}_2\text{ZnO}_2\text{Ag}_2\text{Te}_2$  (Kyoto University) ○YANG Yang·ZHU Tong·MATSUMOTO Yuki·KAGEYAMA Hiroshi\*

#### 電子相制御

##### (11:20) (Session Chairs: 三浦 章)

- 1B08 ★ Development of design principles for metastable phases through rapid cooling experiments on correlated electron systems (Japan Science and Technology Agency·The University of Tokyo) ○OIKE Hiroshi

#### 水素化物

##### (13:20) (Session Chairs: 辻本 吉廣)

- 1B14 ★ Synthesis and characterizations of mixed anion hydrides towards functional energy materials (Kyoto University) ○Tassel Cedric\*·Kageyama Hiroshi

##### (14:00) (Session Chairs: 溝口 拓)

- 1B16 High-pressure phase behavior of  $\text{LnHO}$  ( $\text{Ln}$  = lanthanides): Entropy stabilization of the fluorite structure (Kyoto University) ○Terada Ryo·Tsuchiyq Yumi·Wei Zefeng·Ubukata Hiroki·Cedric Tassel·Kageyama Hiroshi\*
- 1B17 Synthesis of New Oxyhydrides with Alkali Metals  $A_{0.33}\text{La}_{0.56}\text{TiO}_{3-x}\text{H}_x$  ( $A$  = Alkali) (Kyoto University) ○Yoshimura Noriyuki·Terada Ryo·Sasahara Yuki·Murayama Kantaro·Namba Morito·Ubukata Hiroki·Kageyama Hiroshi\*
- 1B18 Pressure-Induced Anion Order–Disorder Transition in Layered Perovskite  $\text{Sr}_2\text{LiHOCl}_2$  (Kyoto University) ○Wei Zefeng·Ubukata Hiroki·Zhong Chengchao·Tassel Cedric·Kageyama Hiroshi\*
- 1B19 Control of anion ordering in oxyhydrides under high pressure (Tokyo Institute of Technology) ○Tochizawa Haruki·(Kanagawa Institute of Industrial Science and Technology)·Tokyo Institute of Technology) Nishikubo Takumi·Sakai Yuki·(Tokyo Institute of Technology) Shigematsu Kei·(Tokyo Institute of Technology·Kanagawa Institute of Industrial Science and Technology) Azuma Masaki·(Tokyo Institute of Technology) Yamamoto Takafumi\*

##### (15:20) (Session Chairs: 生方 宏樹)

- 1B20 Relation between formation of metal hydrides and bulk modulus of metals (National Institute for Materials Science) ○MIZOGUCHI Hiroshi·(University of Suwon) Park Sang-Won·(National Institute for Materials Science·Tokyo Institute of Technology) Hosono Hideo

##### (15:40) Break

#### 酸水酸化物

##### (16:00) (Session Chairs: 生方 宏樹)

- 1B22 Synthesis and crystal structure of a novel Sr-Ga oxy-hydroxide with high thermal stability (Kanagawa university) ○NISHIHARA Yuto·ARAI Kenji·ASAI Yusuke·KOKUBO Yoko·OISHI Kosaku·OGAWA Satoshi·SAITO Miwa\*·(National Institute for Materials Science) KIMOTO Kouji·(Tohoku university) NANBU Yusuke·(Kanagawa university) MOTOHASHI Teruki\*
- 1B23 In-situ infrared spectroscopic study on a novel Sr-Ga oxy-hydroxide (Kanagawa University) ○ASAI Yusuke·NISHIHARA Yuto·KOKUBO Yoko·ARAI Kenji·SAITO Miwa\*·(Kyushu University) INADA Miki·HAYASHI Katsuro·(Kanagawa University) MOTOHASHI Teruki\*
- 1B24 Crystal structure and proton conductive properties of novel Ba-In and Sr-Ga oxy-hydroxides (Kanagawa University) ○KOKUBO Yoko·NISHIHARA Yuto·ASAI Yusuke·ARAI Kenji·SAITO Miwa\*·MOTOHASHI Teruki\*

#### 酸フッ化物

##### (17:00) (Session Chairs: 山本 隆文)

- 1B25 Fluorination behavior of  $\text{Bi}_2\text{VO}_5\text{F}$  (Kindai University) ○Mizutani Hiroko·Noma Naoki·Oka Kengo\*·Iwasaki Mitsunobu\*
- 1B26 Research on a variety of phases synthesized from  $\text{Y}_2\text{O}_3$  and  $\text{YF}_3$  (Chuo University) ○MORIYA Shonosuke·OH-ISHI Katsuyoshi\*
- 1B27 Exfoliation of  $A(\text{Ca}_{1-x}\text{Sr}_x)(\text{Nb}_{1-y}\text{Ta}_y)_2\text{O}_6\text{F}$  ( $A$  = Cs, Rb) perovskites into nanosheets and characterization of their electronic structures (Nagoya University) ○YAMANASHI Mahiro·KOBAYASHI Makoto\*·YAMAMOTO Eisuke·OSADA Minoru\*

## ■■September 06 (Wed) (Room C) ■■

### 06. Fundamental Research and Applied Development of Ceramic Materials for Energy Conversion, Storage and Transportation

#### SOFC

##### (9:00) (Session Chairs: 島田 寛之)

- 1C01 Microstructure of anode-supported SOFC using microwave. (Shizuoka University) ○NARITA Yuki·SUDA seiichi\*·(Nissin.inc) Fujitate Takashi·(National Institute for Materials Science) HASE Masashi·HIROTO Takanoobu
- 1C02 High-Temperature Gas-Sealing Properties of Alkali-doped Sericite-Based Layered Compounds (Shizuoka University) ○ABO Yusaku·SUDA Seiichi\*·(Okayama Univesity) KISHIMOTO Akira
- 1C03 Introduce of nitrogen into the zirconium oxides and amount control of it for the ORR active catalyst (Utsunomiya University) ○UCHIDA Ami·MATSUMOTO Taki\*·(Yokohama National University) NAGAI Takaaki·ISHIHARA Akimitsu

##### (10:00) (Session Chairs: 松田 マリック隆磨)

- 1C04 ☆ Controlled Growth of Raw Powder for Improved Performance of Solid Oxide Fuel Cells (Gunma University) ○SATO Kazuyoshi·KANNARI Naokatsu·(Osaka University) ABE Hiroya·(The University of Tokyo) SHIKAZONO Naoki

##### (10:40) Break

#### PCFC

##### (11:00) (Session Chairs: 佐藤 和好)

- 1C07 Deterioration of protonic ceramic fuel cell using Yb-doped barium zirconate as an electrolyte (University of Miyazaki) Takeda Kampei·Harada Yosiaki·(Panasonic Holdings Corporation) Yamauchi Kosuke·Mikami Yuichi·Kuroha Tomohiro·(University of Miyazaki) ○Okuyama Yuji\*
- 1C08 Phase stability of  $\text{BaZr}_{1-x}\text{Yb}_x\text{O}_{3-\delta}$ -based perovskites on cell fabrication and fuel cell operation (Central Research Institute of Electric Power Industry) ○Matsuda Malik Ryuma·Shun Kobayashi·Mori Masashi·(University of Miyazaki) Okuyama Yuji·(National Institute of Advanced Industrial Science and Technology) Shimada Hiroyuki·Sumi Hirofumi·Mizutani Yasunobu·(Panasonic Holdings Corporation) Mikami Yuichi·Yamauchi Kosuke·Kuroha Tomohiro
- 1C09 Evaluation of steam electrolysis cell using direct hydrogen dissolution proton conducting oxide (Tokushima University) ○Shibata Motoki·Fujita Ryosuke·(National Institute of Advanced Industrial Science and Technology) Sakai Takaaki·(Miyazaki University) Okuyama Yuji·(Tokushima University) Oishi Masatsugu\*

##### (16:40) (Session Chairs: 大石 昌嗣)

- 1C24 Fabrication and evaluation of protonic ceramic fuel cells using highly sinterable  $\text{BaZr}_{0.8}\text{Yb}_{0.2}\text{O}_{3-\delta}$  nanoparticles (National Institute of Advanced Industrial Science and Technology) ○SHIMADA Hiroyuki·YAMAGUCHI Yuki·SUMI Hirofumi·NOMURA Katsuhiko·FUJIOKA Masaya·WATANABE Konosuke·(Gunma University) SATO Kazuyoshi·(National Institute of Advanced Industrial Science and Technology) MIZUTANI Yasunobu
- 1C25 Power generation characteristics of protonic ceramic fuel cells using  $\text{Ba}(\text{Co}, \text{Fe}, \text{Y})\text{O}_{3-\delta}$  based cathode (National Institute of Advanced Industrial Science and Technology) ○WATANABE Konosuke·SHIMADA Hiroyuki·FUJIOKA Masaya·YAMAGUCHI Yuki·NOMURA Katsuhiko·SUMI Hirofumi·(Nagoya Institute of Technology) KAGOMIYA Isao·(National Institute of Advanced Industrial Science and Technology) MIZUTANI Yasunobu
- 1C26 Unsteady power generation characteristics of Protonic Ceramic Fuel Cell under switching humidification ratio of fuel gas (Yokohama National University) ○MURAKAMI Takeru·NAGATA Yohei·LI Kunpeng·ARAKI Takuto\*·(Central Research Institute of Electric Power Industry) MORI Masashi·KOBAYASHI Shun·MATSUDA Malik Ryuma
- 1C27 Evaluation of Hydrogen Separation Membrane Using N-BCZY Cermet (Ehime University) ○OKAYAMA Susumu·AONO Hiromichi·ITAGAKI Yoshiteru\*

## ■■September 06 (Wed) (Room D) ■■

### 18. Advanced science of engineering ceramics -New development of structural and interfacial control and analytical techniques-

#### 非酸化物・耐熱材料

##### (9:40) (Session Chairs: 宮崎 広行)

- 1D03 Mechanical reliability of  $\text{Al}_2\text{O}_3$  fibers in relation to thermal exposure and material microstructure (Tokyo University of Science) ○YANO Yuta·ARAI Yutarou\*·KOGO Yasuo\*
- 1D04 Design and material characterization of Refractory High-Entropy Alloys using thermodynamic equilibrium calculations. (Tokyo University of Science) ○KOMIYA Yuki·ARAI Yutarou\*·KOGO Yasuo\*

##### (10:20) (Session Chairs: 吉田 克己)

- 1D05 Evaluation on strength distribution of porous carbon analyzed a model with real structure (Tokyo University of Science) ○Igusa Ryo·Arai Yutarou\*·Kogo Yasuo\*
- 1D06 Establishment of evaluation method for mechanical properties of porous carbon materials without unit structure (Tokyo University of Science) ○TESHIMA Kyosuke·ARAI Yutarou\*·KOGO Yasuo\*
- 1D07 Establishment of evaluation and analysis methods for carbon monoliths as thermal protection systems for aerospace applications (Tokyo University of Science) ○Ono Rina·Tukamoto Kenjiro·Arai Yutarou\*·Kogo Yasuo\*
- 1D08 Establishment of fabrication process and evaluation on mechanical properties of nanoparticle dispersed carbon monoliths (Tokyo University of Science) ○TANIGUCHI Hiroya·ARAI Yutarou\*·KOGO Yasuo\*

##### (13:20) (Session Chairs: 武藤 浩行)

- 1D14 Fabrication of oxide-coated  $\text{Al}_4\text{SiC}_4$ -SiC composite carbides by cyclic oxidation treatment (Mie Industrial Research Institute) ○INOUE Koji·NAITO Takuma
- 1D15 Chemical & structural engineering of deformation-resistant UHTC composites with ultra-hardness and ultra-high strength (National Institute for Materials Science) ○Vasytkiv Oleg\*

1D16 Effect of sintering atmosphere on electrical properties of Al or B-added porous SiC ceramics (Tokyo Institute of Technology)  
○CHUNG Ying·GUBAREVICH Anna·YOSHIDA Katsumi\*

#### 構造制御・機械的特性

##### (14:20) (Session Chairs: 井上 幸司)

- 1D17 Control of macroscopic porous texture via integrated particle (Toyoashi University of Technology) MUTO Hiroyuki·(National Institute of Technology, Numazu College) YOKOI Atsushi·(Toyoashi University of Technology) Tan Wai Kian·KAWAMURA Go·MATSUDA Atsunori·○MUTO Hiroyuki
- 1D18 Modification of ceramic bulk prepared by water plasma spraying method using metal penetration and reaction and its effect (Nagoya University) ○BAO Fuhai·YAMASHITA Seiji·(OSAKA FUJI Corporation) DAKI Hajime·NAKAGAWA Keita·(Nagoya University) KITA Hideki\*
- 1D19 Fracture Behavior of Laminated Dense and Porous Ceramic Layers with Highly Homogeneous Interface (LIXIL Corporation·Yokohama National University) ○SAWADA Takeyuki·(Yokohama National University) MAKI Yuto·(LIXIL Corporation) YAMAMOTO Keisuke·KAWAI Shuji·(Yokohama National University) NAKAO Wataru\*
- 1D20 Finite Element Analysis of Dynamic Fracture Behavior of Ceramic Materials with Coarse and Dense Laminated Structure (Yokohama national University) ○MAKI Yuto·(Yokohama national University·LIXIL) SAWADA Takeyuki·(Yokohama national University) MAEDA Taiyo·OZAKI Shingo\*·NAKAO Wataru\*

##### (15:40) Break

#### 自己治癒材料

##### (16:00) (Session Chairs: 井上 遼)

- 1D22 Evaluation of Mechanical Properties and Fracture Resistance of Self-Healing Ceramics Composed of Coated Chops Made of Ceramics Fiber Bundles (Yokohama National University) ○TASHIRO Kaito·NAKAO Wataru\*
- 1D23 New ceramics with both healing and decomposition functions (Yokohama National University) ○SEKINE Nobuhide·(DAIICHI KIGENSO KAGAKU KOGYO CO., LTD) NAKAJIMA Yasushi·KAMO Takahiro·ITO Masahiro·(Yokohama National University) NAKAO Wataru\*
- 1D24 Effect of matrix viscosity on self-healing ability in fiber reinforced self-healing ceramics. (Yokohama National University) ○AKUTSU Yuki·NAKAO Wataru\*

#### 計測・シミュレーション

##### (17:00) (Session Chairs: 中尾 航)

- 1D25 Strength Prediction of Fiber-Reinforced laminates Using X-ray CT Image and Machine Learning (Tokyo University of Science) ○HORIE Junya·ARAI Yutaro\*·INOUE Ryo\*
- 1D26 Measurement of Internal Deformation Distribution in Unidirectional Fiber-Reinforced Ceramic Composites Using Digital Volume Correlation (Tokyo University of Science) ○MURAGUCHI Takeshi·ARAI Yutaro·(National Institute for Materials Science) OKUMA Gaku·KAKISAWA Hideki·(Tokyo University of Science) INOUE Ryo\*
- 1D27 Microspeckle pattern materials for digital image correlation at 1500°C (National Institute for Materials Science) ○KAKISAWA Hideki·Nishimura Toshiyuki

## ■■September 06 (Wed) (Room E) ■■

### 24. Crystal Science - New development of crystal growth technology and materials research -

##### (9:40) (Session Chairs: 我田 元)

- 1E03 Flux growth of layered perovskite-type oxysulfide crystals and their photocatalytic properties (Shinshu University) ○MIYAUCHI Atsushi·HAYASHI Fumitaka·YAMADA Tetsuya·(Mitsubishi Chemical Group) KARIYA Nobuko·(Shinshu University) TESHIMA Katsuya\*
- 1E04 Fabrication of sodium titanate crystal structures by liquid phase sintering method and evaluation of their adsorption properties (Shinshu University) ○SUGIYAMA Fumiya·HAYASHI Fumitaka·YAMADA Tetsuya·TESHIMA Katsuya\*

##### (10:20) Break

##### (10:40) (Session Chairs: 黒澤 俊介)

- 1E06 Low-aspect ratio crystal shape control of layered oxides using flux-method process informatics (Shinshu University) ○YAMADA Tetsuya·(Meiji University) Kaneko Hiromasa·(Shinshu University) Hayashi Fumitaka·Koyama Michihisa·Teshima Katsuya
- 1E07 Novel ternary Superhydride Y-Th-H: Structure Prediction and Superconductivity (Japan Advanced Institute of Science and Technology) ○Ghaffar Abdul·Song Peng·Hongo Kenta\*·Maezono Ryo
- 1E08 ★ Development of new optical material polycrystals (Osaka University) ○FUJIOKA Kana

##### (13:20) (Session Chairs: 綿打 敏司)

- 1E14 Chemical vapor deposition of Ce<sup>3+</sup>-doped Gd<sub>3</sub>Al<sub>5</sub>O<sub>12</sub> epitaxial films and their scintillation properties (Yokohama National University) ○DEGUCHI Yumiko·ITO Akihiko\*
- 1E15 Composition Optimization using Sintered Body for the Development of Dose-rate Monitoring System (Tohoku University) ○MATSUKURA Daisuke·(Tohoku University·Osaka University) KUROSAWA Shunsuke\*·(Tohoku University) YAMAJI Akihiro·OHASHI Yuji·YOKOTA Yuui·(Tohoku University·C&A) KAMADA Kei·(Tohoku University) SATO Hiroki·YOSHINO Masao·HANADA Takashi·MURAKAMI Rikito·HORIAI Takahiko·(Tohoku University·C&A) YOSHIKAWA Akira
- 1E16 Crystal growth and scintillation properties of novel halide neutron scintillators for decommissioning (Department of Materials Science, Graduate School of Engineering, Tohoku University·Institute for Materials Research, Tohoku University) ○URANO Yusuke·(Institute for Materials Research, Tohoku University·New Industry Creation Hatchery Center, Tohoku University·Institute for Laser Engineering, Osaka University) KUROSAWA Shunsuke\*·(Institute for Materials Research, Tohoku University·New Industry Creation Hatchery Center, Tohoku University) YAMAJI Akihiro·(Institute for Materials Research, Tohoku University·C&A Corporation) YOSHIKAWA Akira·(Artificial Crystal Research Center Shanghai Institute of Ceramics, Chinese Academy of Sciences) Wu Yuntao
- 1E17 Growth and Optical Properties for Scintillation Crystals by the Core-Heating Technique (Tohoku Univ.·Osaka Univ.) ○KUROSAWA Shunsuke·(Tohoku Univ.) ISHIZAWA Satoshi·URANO Yusuke·MATSUKURA Daisuke·YAMAJI Akihiro·YOSHIKAWA Akira

##### (14:40) Break

##### (15:00) (Session Chairs: 山田 哲也)

- 1E19 Investigation of growth conditions for  $\text{Li}_{1-x}\text{Al}_x\text{Ti}_{2-x}(\text{PO}_4)_3$  single crystals (University of Yamanashi) ○Okanda Kohei·Maruyama Yuki\*·Nagao Masanori·Watauchi Satoshi·Tanaka Isao
- 1E20 Growth of transparent oxide crystal by optical floating zone method (University of Yamanashi) OGATA Natsu·○WATAUCHI Satoshi·MARUYAMA Yuki·NAGAO Masanori·(Tohoku University) YOKOTA Yuui·(Tohoku University·Osaka University) KUROSAWA Shunsuke·(Tohoku University) YOSHIKAWA Akira·(University of Yamanashi) TANAKA Isao
- 1E21 Characterization of joining interfaces between YAG single crystals (SCT, Inc.) ○HANEDA Hajime·Koinuma Hideomi·SHINOZAKI Takuya·IWATA Yousuke·(SHINKOSHA CO., LTD.) KAWASHIMA Kazuhiro·KAWAMINAMI Shuichi
- 1E22 Optical property of YAG crystals grown by Cz and TSMG methods (Shinkosha Co., LTD.) ○KAWASHIMA Kazuhiro·ASAKA Shohei·TAKAHASHI Maki·KINOSHITA Tomotsugu·KAWAMINAMI Shuichi·MOCHIZUKI Keisuke·(SCT Inc.) SHINOZAKI Tatsuya·IWATA Yosuke·HANEDA Hajime·KOINUMA Hideomi

## ■ ■ September 06 (Wed) (Room F) ■ ■

### 17. Advanced Structure Science and Analytical Techniques

#### (9:00) (Session Chairs: 藤井 孝太郎)

- 1F01 ★ First principles calculations on the mechanism of fluoride-ion diffusion in fluoride solid electrolytes (Japan Fine Ceramics Center) ○KUWABARA Akihide·OGAWA Takafumi·Craig Fisher·TAGUCHI Ayako·MORIWAKE Hiroki
- 1F03 Proton Conduction and Local Lattice Distortion in Barium Zirconate (Japan Fine Ceramics Center) ○SHITARA Kazuki·KUWABARA Akihide·(University of Miyazaki) OKUYAMA Yuji·(Kyushu University) HYODO Junji·YAMAZAKI Yoshihiro
- 1F04 Thermal expansion analysis of cubic  $\text{SrTiO}_3$  at finite temperatures: A first-principles lattice-dynamics study (Tokyo Institute of Technology) ○KOISO Hiroki·MOCHIZUKI Yasuhide\*·ISOBE Toshihiro·NAKAJIMA Akira

#### (10:20) Break

#### (10:40) (Session Chairs: 勝又 哲裕)

- 1F06 Quantum beam analysis of the mechanism underlying enhanced Li-ion conductivity in garnet-type solid electrolyte  $\text{L}_{7+x}\text{La}_{3-x}\text{Sr}_x\text{Zr}_2\text{O}_{12}$  (Niterra Co., Ltd.·Tohoku University) ○KANEKO Masahide·(Tohoku University) NINOMIYA Kakeru·(Niterra Co., Ltd.) HISHIDA Tomoko·TAKEUCHI Yuki·OTANI Kazushi·(Tohoku University) NISHIBORI Maiko\*
- 1F07 Characterization of degradation at the Interface between cathode active material and sulfide solid electrolyte in all-solid-state batteries using scanning transmission electron microscopy (Japan Fine Ceramics Center) ○KOBAYASHI Shunsuke·KATO Takeharu·KUWABARA Akihide
- 1F08 S/TEM analysis of heavily delithiated  $\text{LiCoO}_2$  (Japan Fine Ceramics Center) ○NAKAYAMA Kei·KOBAYASHI Shunsuke·(The University of Tokyo) ISHIKAWA Ryo·(Japan Fine Ceramics Center) KUWABARA Akihide·(Japan Fine Ceramics Center·The University of Tokyo) IKUHARA Yuichi
- 1F09 S/TEM analysis of (de)fluorination reaction of fluoride-ion battery composite anode  $\text{In/LaF}_3$  (Japan Fine Ceramics Center) ○NAKAYAMA Kei·(Toyota Motor Corporation·Kyoto University) MIKI Hidenori·(Kyoto University) NAKAGAWA Takashi·(Toyota Motor Corporation·Kyoto University) NOI Kousuke·(Japan Fine Ceramics Center) SUGAWARA Yoshihiro·KOBAYASHI Shunsuke·(Honda R&D Co., Ltd.) SAKURAI Katsutoshi·(Toyota Motor Corporation) IBA Hideki·(Japan Fine Ceramics Center) KUWABARA Akihide·(Japan Fine Ceramics Center·The University of Tokyo) IKUHARA Yuichi·(Kyoto University) ABE Takeshi

#### (13:20) (Session Chairs: 浅香 透)

- 1F14 Crystal structure, chemical state of Fe and structural phase transition properties of  $\text{SrFeO}_{3-\delta}$  with controlled defect content (Nihon University) ○YOSHINO Taizo·HATANNO Shiho·SHIDO Kosuke·HASHIMOTO Takuya\*·(University of Tokyo) MATSUO Motoyuki
- 1F15 Variation of crystal structure of  $\text{SrFeO}_{3-\delta}$  by partial cation substitution (Nihon University) ○HASHIMOTO Takuya·YOSHINO Taizo·SHIDO Kosuke·(Kochi University) FUJISHIRO Fumito·(Tokushima University) OISHI Masatsugu·(University of Tokyo) MATSUO Motoyuki·(Tohoku University) MORIKAWA Daisuke·TSUDA Kenji
- 1F16 Formation of oxygen vacancies in  $\text{SrCrO}_3$  by electron beam irradiation (Japan Fine Ceramics Center) ○KOINUMA Gen·KOBAYASHI Shunsuke·(Tokyo Institute of Technology) KOSUGE Taiki·YAMAMOTO Takafumi·(Japan Fine Ceramics Center) KUWABARA Akihide

#### (14:20) (Session Chairs: 漆原 大典)

- 1F17 Exploration of triple conductors based on Cr-doped perovskite oxides (Nagoya Institute of Technology) ○NAKAI Reiji·KAGOMIYA ISAO\*·KAKIMOTO Kennichi
- 1F18 Proton uptake in  $\text{La}_{1-x}\text{Na}_x\text{FeO}_3$  and its proton conductivity (Nagoya Institute of Technology) ○KAMIYAMA Mina·KAGOMIYA Isao\*·KAKIMOTO Kenichi

#### (15:00) Break

- 1F20 Elucidation of Nb/Mo ordering in  $\text{Ba}_7\text{Nb}_4\text{MoO}_{20}$  (Tokyo Institute of Technology) ○FUJII Kotaro·YASUI Yuta·(National Institute of Materials Science) TANSHO Masataka·(Tokyo Institute of Technology) SAKUDA Yuichi·(National Institute of Materials Science) GOTO Atsushi·OHKI Shinobu·MOGAMI Yuuki·(Yamagata University) IJIMA Takahiro·(Japan Synchrotron Radiation Research Institute) KAWAGUCHI Shogo·KOBAYASHI Shintaro·OSAKA Keiichi·(High Energy Accelerator Research Organization) IKEDA Kazutaka·OTOMO Toshiya·(Tokyo Institute of Technology) YASHIMA Masatomo

#### (15:40) (Session Chairs: 小林 俊介)

- 1F21 Non-stoichiometry, crystal structure and magnetic properties of rare earth layered iron oxide  $R\text{Fe}_2\text{O}_4$  (Nagoya Institute of Technology) ○SAKABE Tomoka·URUSHIHARA Daisuke·ASAKA Toru\*·FUKUDA Koichiro
- 1F22 Investigation of superspace group and piezoelectricity of  $\text{Yb}_2\text{Fe}_3\text{O}_7$  (Nagoya Institute of Technology) ○WATANABE Shogo·URUSHIHARA Daisuke·Asaka Toru\*·FUKUDA Kouichirou
- 1F23 Characterization and Exfoliation of Dion-Jacobson Type Perovskites  $\text{Cs}(\text{Bi}_2\text{Sr}_{m-3})(\text{Ti}_{m-1}\text{Nb})\text{O}_{3m+1}$  (Nagoya University) ○MORITA Shu·(Nagoya University) YAMAMOTO Eisuke·KOBAYASHI Makoto·(Nagoya Institute of Technology) URUSHIHARA Daisuke·ASAKA Toru·(Nagoya University) OSADA Minoru\*

## ■ ■ September 06 (Wed) (Room G) ■ ■

### 00-02. (Invite speaker only)SDGs Session

**(9:00) (Session Chairs: 宮山 勝)**

1G01 ★ Establishment of the Decarbonized Society based on Cement Chemistry (Shimane University) ○ATARASHI Daiki

**(9:20) (Session Chairs: 新 大軌)**

1G02 ★ How to build sustainable structures: Studies on durability issues of concrete (Shimane University) ○YOSHIDA Natsuki

1G03 ★ Material Characterization and Performance Evaluation of Concrete with Admixture from Hydration Mechanistic Aspects (Maebashi Institute of Technology) ○SAGAWA Takahiro

1G04 ★ Actions to achieve SDGs in the cement and concrete industry (Nihon University) ○OHYA Junichi

**(10:20) (Session Chairs: 吉田 英樹)**

1G05 ★ Creating a Local circulation model for gypsum in All Hasami (incILLC) ○KAWANO Kimihiko (Hasami town hall) SAWADA Kenichi • OTA Seiya • IMAZATO Keisuke (Ceramic Research Center of Nagasaki) YAMAGUCHI Norio • YOSHIDA Hideki • URAGO Hiroyasu (incILLC) NAKANO Hirofumi

**(10:40) (Session Chairs: 安井 伸太郎)**

1G06 ★ Catalytic e-fuel production with ceramic membrane reactor (MITSUI MINING & SMELTING CO.,LTD.) ○KOMANOYA Tasuku • KANNO Akihiro • NAKAHARA Yuunosuke (eSep Inc.) Sawamura Ken-ichi (YAMABIKO Corporation) Uchida Masami • Yoshizaki Takuo

1G07 ★ Macroporous ceramics for the sustainable development goals (SDGs): Review (National Institute of Advanced Industrial Science and Technology) ○FUKUSHIMA Manabu • Ohji Tatsuki

1G08 ★ Revitalisation and transmission of lost technologies (missinglink) ○KOHGA Yuko (Tokyo Institute of Technology) ISOBE Toshihiro • YASUI Shintaro • YOSHIKAWA Hidemi

**00-04. (Invite speaker only)****(13:20) (Session Chairs: 今中 佳彦)**

1G14 ★ Material strategy (Ministry of Economy, Trade and Industry) ○TSUCHIYA Tetsuo

**September 06 (Wed) (Room J)****01. informatics applications in ceramic research****センサ****(10:40) (Session Chairs: 山口 祐貴)**

1J06 ★ Optimization of process conditions for SnO<sub>2</sub> semiconductive gas sensors on process informatics (National Institute of Advanced Industrial Science and Technology (AIST)) ○ITOHO Toshio • ZOU Quan • CHOI Pil-Gyu • MASUDA Yoshitake • SHIN Woosuck

**物性予測****(11:20) (Session Chairs: 山口 祐貴)**

1J08 Prediction of Physical Properties of Li Ion Conductors Using SEM Images and Convolutional Neural Network (Nagoya Institute of Technology) ○MURAKAMI Kento • YAMAGUCHI Yudai • TANIBATA Naoto\* • TAKEDA Hayami\* • NAKAYAMA Masanobu\*

**プロセス****(11:40) (Session Chairs: 山口 祐貴)**

1J09 Exploration of synthesis process for Li-rich NASICON-type solid electrolytes using a combination of experiment and Bayesian optimization. (Nagoya Institute of Technology) ○TAKEDA Hayami • FUKUDA Hiroko • NAKANO Koki • HASHIMURA Shougo • TANIBATA Naoto • NAKAYAMA Masanobu • (TOAGOSEI CO., LTD.) ONO Yasuharu • NATORI Takaaki

**ハイスループット****(13:20) (Session Chairs: 申 ウソク)**

1J14 Exploration of LiMPO<sub>4</sub> (M; Fe, Mn, Co) by high-throughput process based on electrostatic spray deposition and tendency of electrode properties (Tokyo University of Science) ○FUJIMOTO Kenjiro • ENOKI Shuhei (National Institute of Advanced Industrial Science and Technology) YAMAGUCHI Yuki (Tokyo University of Science) AIMI Akihisa

**燃料電池****(13:40) (Session Chairs: 申 ウソク)**

1J15 Development of a tool to explore cathode materials for PCFC using Machine Learning (University of Miyazaki) ○Shinonome Haruka (Kyushu University) Tsujikawa Kota • Hyodo Junji • Yamasaki Yoshihiro (Panasonic) Mikami Yuichi • Yamauchi Kosuke • Kuroha Tomohiro (University of Miyazaki) okuyama Yuji\*

**焼結****(14:00) (Session Chairs: 申 ウソク)**

1J16 Process dependence on mechanical property of BaZrO<sub>3</sub> fabricated by acid-base reaction near room temperature (National Institute of Advanced Industrial Science and Technology) ○YAMAGUCHI Yuki • NAKAYAMA REI • SUMI Hirofumi

**ハイスループット****(14:20) (Session Chairs: 申 ウソク)**

1J17 High-throughput synthesis of Y and Sc partially doped ZrO<sub>2</sub> based on coprecipitation method (Tokyo University of Science) ○YAMAURA Haruna • AIMI Akihisa\* • FUJIMOTO Kenjiro\*

**(14:40) Break****計算熱力学****(15:00) (Session Chairs: 藤本 憲次郎)**

1J19 New thermodynamic databases for ultrahigh temperature ceramics materials and molten salts (Research Institute of Computational Thermodynamics, Inc.) ○SHOBU Kazuhisa

**燃料電池****(15:20) (Session Chairs: 藤本 憲次郎)**

1J20 Machine learning based prediction of space group for Ba(Ce<sub>0.8-x</sub>Zr<sub>x</sub>)Yb<sub>0.2</sub>O<sub>3</sub> perovskite-type protonic conductors (National Institute of Advanced Industrial Science and Technology) ○NOMURA Katsuhiko • SHIMADA Hiroyuki • YAMAGUCHI Yuki • FUJIOKA

**放射光**

**(15:40) (Session Chairs: 奥山 勇治)**

- 1J21 Improved synchrotron X-ray measurement tool for measurement informatics (Tokyo University of Science) ○FUJIMOTO Kenjiro·AIMI Akihisa·(Tohoku University) MARUYAMA Shingo

**焼結**

**(16:00) (Session Chairs: 奥山 勇治)**

- 1J22 Machine Learning Assisted Sintering Process for Lithium Aluminum Titanium Phosphate (National Institute of Advanced Industrial, Science and Technology) RAJAPRIYA Navin·○SHIN Woosuck·HAMAMOTO Koichi

**燃料電池**

**(16:20) (Session Chairs: 奥山 勇治)**

- 1J23 Optimization of Manufacturing Processes for Metal-supported SOFCs Using Machine Learning (National Institute of Advanced Industrial Science and Technology) ○SUMI Hirofumi·Yamaguchi Yuki

**■■September 06 (Wed) (Room K) ■■**

**21. Element-Block Materials: Current Status and Future Prospects**

**ハイブリッド材料 I**

**(9:40) (Session Chairs: 今榮 一郎)**

- 1K03 ★ Synthesis of polysiloxanes having QDQ or TDT unit (Tokyo University of Science) ○GUNJI Takahiro·SHIMODA Tomoya·YAMAMOTO Kazuki  
1K05 Preparation of Highly Heat-Resistant Thermal Insulation Materials Using Hydrosilylation Reactions of Oligosilsesquioxane Containing Hydrosilyl Groups (Hiroshima University) ○TANAKA ARATA·Ohshita Joji\*·Adachi Yohei

**ハイブリッド材料 II**

**(10:40) (Session Chairs: 金子 芳郎)**

- 1K06 Orientation of carboxylic acid molecules on the surface of metal hydroxides with lepidocrocite-type structures (Osaka Metropolitan University) ○OKAWAKI Souta·OKADA Kenji\*·FUKATSU Arisa·TAKAHASHI Masahide\*  
1K07 Photoinduced order-disorder transition behaviors of azobenzene-modified silsesquioxane thin films (Waseda University) ○MIYAKE Toshihide·MIZUNO Takahiro·MIYAMOTO Yoshiaki·MATSUNO Takamichi\*·SHIMOJIMA Atsushi\*  
1K08 ★ Development of photo- and electro-active element-block materials using sol-gel method (Hiroshima University) ○IMAE Ichiro

**ポリシロキサン I**

**(13:20) (Session Chairs: 大下 浄治)**

- 1K14 ★ Creation of Nanomaterials by Controlled Linkage of Caged Siloxane- and Germoxane-based Elemental Blocks (Waseda University) ○SHIMOJIMA Atsushi  
1K16 Effect of cross-linking blocks on the mechanical properties of porous polysilsesquioxane monoliths (Nagoya University) ○KAWASE Mio·NAKANISHI Kazuki\*·HASEGAWA George\*

**ポリシロキサン II**

**(14:20) (Session Chairs: 郡司 天博)**

- 1K17 Synthesis of aluminosilicates using silanol-modified oligosiloxanes as building blocks (Waseda University) ○MOCHIZUKI Hikaru·HIKINO Takuya·MATSUNO Takamichi·SHIMOJIMA Atsushi\*  
1K18 Preparation of antifog hard coatings with carboxyl-functionalized POSS cross-linked with oligo(ethylene glycol)s (Kagoshima University) ○NAKAGAWA Jun·KANEKO Yoshiro\*  
1K19 ★ Development of new water separation membrane and antifogging materials based on polysilsesquioxane with hydrophilic units (Hiroshima University) ○OHSHITA Joji

**(15:40) Break**

**ポリシロキサン III**

**(16:00) (Session Chairs: 下嶋 敦)**

- 1K22 ★ Superacid-catalyzed preparation of ionic POSSs and their application to antifog hard coatings (Kagoshima University) ○KANEKO Yoshiro  
1K24 Synthesis of random-type poly(alkylsilsesquioxane)s containing imidazolium chloride groups (Tokyo Metropolitan University) ○ITAKURA Hirotaka·ISHIJIMA Masanao·KAJIHARA Koichi\*  
1K25 Development of CO<sub>2</sub> separation membrane with imidazolium layer covalently bonded on silicone membrane surface (Kagoshima University) ○NAKANO Yumi·YUASA Kayoko·(Kyusyu University) FUJIKAWA Shigenori·(Kagoshima University) KANEKO Yoshiro\*

**(17:20) (Session Chairs: 菅原 義之)**

- 1K26 総合討論

**■■September 06 (Wed) (Room L) ■■**

**09. Novel ceramic technology based on nanocrystals**

**(9:00) (Session Chairs: 中島 光一)**

- 1L01 ★ Development of layered oxyhalide photocatalysts; toward crystal and band structure engineering (Kyoto University) ○Kato Daichi  
1L03 Reversible Enhancement and Stabilization of Photoluminescence of CsPbBr<sub>3</sub> Nanocubes through 2D and 3D Ordered Assemblies (Keio University) ○HASHIMOTO Shota·WATANABE Hiroto·ISO Yoshiaki·OAKI Yuya·ISOBE Tetsuhiko·IMAI Hiroaki\*

- 1L04 Synthesis of Brookite-type TiO<sub>2</sub> using titanium glycolate complex and its application to the electron transport layer of perovskite solar cells (Tokai University) ○SATO Raiki·TOMITA Koji\*·ISOMURA Masao·KANEKO Tetsuya·(Kanazawa University) Md. Shahiduzzaman·(Nagoya University) KOBAYASHI Makoto·(Osaka University) CHO Sunghun·KAKIHANA Masato
- 1L05 Sandwich process for perovskite solar cells to reduce material costs (Tokai University) ○OKAZAKI Harumasa·TOMITA Koji\*·ISOMURA Masao·KANEKO Tetuya·(Kanazawa University) Md. Shahiduzzaman·(Nagoya University) KOBAYASSI Makoto·(Osaka University) Cho Sunghun·KAKIHANA Masato

**(10:40) Break**

**(11:00) (Session Chairs: 富田 恒之)**

- 1L07 Low-temperature fabrication of nanocomposite capacitors containing BaTiO<sub>3</sub> insulator/LaNiO<sub>3</sub> conductor core-shell particles and their dielectric properties (University of Yamanashi) ○HIGUCHI Ryuya·KURACHI Masato·FUJII Ichiro·WADA Satoshi·UENO Shintaro\*
- 1L08 Synthesis of BaTiO<sub>3</sub>-SrTiO<sub>3</sub> core-shell nanocube (Ibaraki University) ○NAKASHIMA Kouichi·TAKAHAMA Hikaru
- 1L09 Shape-controlled synthesis of oxide solid electrolyte nanocrystals and orientation control of their ceramics (National Institute of Advanced Industrial Science and Technology) ○ITASAKA Hiroki·MIMURA Ken-ichi·LIU Zheng·HAMAOKA Naoki·HAMAMOTO Koichi

**(13:20) (Session Chairs: 谷口 貴章)**

- 1L14 Synthesis and CO<sub>2</sub> Photoreduction activity of Nanostructured Titanium Oxide Films (Nagoya Institute of Technology) ○MATSUOKA Takumi·FUCHIGAMI Teruaki·(National Institute of Advanced Industrial Science and Technology) CHOI Pil Gyu·MASUDA Yoshitake·(Nagoya Institute of Technology) KAKIMOTO Ken-ichi\*
- 1L15 Preparation and luminescent properties of exfoliated hexagonal boron nitride (h-BN) nanosheets using acid-base reaction (Kobe University) ○Mishima Rina·(National Institute for Materials Science) Adachi Yutaka·Segawa Hiroyo·(Kobe University) Uchino Takashi\*
- 1L16 Highly sensitive detection of acetone using a spiky-shaped Nb<sub>2</sub>O<sub>5</sub>/SnO<sub>2</sub> nanosheet composite semiconductor gas sensor (Nagoya Institute of Technology) ○FUCHIGAMI Teruaki·(National Institute of Advanced Industrial Science and Technology) Li Chunyan·Choi Pil Gyu·(Nagoya Institute of Technology) ASAKA Toru·(National Institute of Advanced Industrial Science and Technology) MASUDA Yoshitake·(Nagoya Institute of Technology) KAKIMOTO Ken-ichi

**(14:20) Break**

**(14:40) (Session Chairs: 佐藤 和好)**

- 1L18 Tailored synthesis of single-crystalline gadolinium-doped ceria nanosheets (Nagoya University) ○ITO Kentaro·YAMAMOTO Eisuke\*·KOBAYASHI Makoto·OSADA Minoru\*
- 1L19 Characterization and exfoliation of Dion-Jacobson type layered perovskites RbBi<sub>2-x</sub>La<sub>x</sub>Ti<sub>2</sub>NbO<sub>10</sub> (Nagoya University) ○NISHIBASHI Keita·YAMAMOTO Eisuke·KOBAYASHI Makoto·OSADA Minoru\*
- 1L20 Preparation of transition metal dichalcogenides Mo<sub>1-x</sub>Nb<sub>x</sub>S<sub>2</sub> and nanosheet formation by liquid-phase exfoliation methods (Utsunomiya University) ○SUGA Masashi·NARITA Yurika·TEZUKA Keitaro\*·SHAN Yue-jin\*
- 1L21 In-plane XRD analysis on two-dimensional structure of graphene oxide (National Institute for Materials Science) ○TANIGUCHI Takaaki·Leanddas NURDIWIJAYANTO·Sakai Nobuyuki·Sasaki Takayoshi·(Kumamoto University) Hatakeyama Kazuto·Tsugawa Tatsuki·Ida Shintaro

**(16:00) Break**

**(16:20) (Session Chairs: 淵上 輝顕)**

- 1L23 ★ Composites of magnetic nanoparticles and polymer for nanomedicine and biosensing (Tokyo Institute of Technology) ○KITAMOTO Yoshitaka
- 1L25 Supercritical Hydrothermal Synthesis of Nonstoichiometric Ga-based Nanospinels (Nagoya University) ○XIE Bo·(Chiba University) NUMAKO Chiya·(National Institute for Materials Science) NAKA Takashi·(Nagoya University) TAKAMI Seiichi\*

■ ■ September 06 (Wed) (Room M) ■ ■

**19. Green Processing – Innovation of Functional Ceramics for Realization of the SDGs**

**触媒・エネルギー**

**(9:00) (Session Chairs: 松田 晃史)**

- 1M01 Enhancement of the catalytic activity of Ca<sub>3</sub>Co<sub>4</sub>O<sub>9</sub> for oxygen-related reactions (Kitami Institute of Technology) ○HE HAO·MATSUDA TAKESHI·Padarti Jeevan Kumar·OHNO TOMOYA·HIRAI SHIGETO\*
- 1M02 Introduction to Highly Active and Stable Oxygen Evolution Catalysts for Electrodes in Energy Conversion Technologies (Kitami Institute of Technology) ○HIRAI Shigeto·HE Hao·PADARTI Jeevan Kumar·OHNO Tomoya·MATSUDA Takeshi
- 1M03 Electrochemical Growth of Fe/FeOOH Forest for Electrocatalytic Oxygen Evolution Reaction (National Institute of Advanced Industrial Science and Technology (AIST)) ○Taniguchi Asako·Nakamura Takako·(Tohoku University) Konno Toyohiko
- 1M04 Fabrication of SnO<sub>2</sub> films by mist spin spray method for electron transport layers for solar cells. (Tokyo Institute of Technology) ○YAMASAKI Atsuko·NITTA Ryosuke·KUBOTA Yuta·MATSUSHITA Nobuhiro\*

**(10:20) Break**

**コーティング**

**(10:40) (Session Chairs: 谷口 有沙子)**

- 1M06 ★ Firing process-free ceramics coating by EPD method (National Institute for Materials Science) ○UCHIKOSHI Tetsuo
- 1M08 Improvement of sintering properties by MgO coating on LiTa<sub>2</sub>PO<sub>8</sub> solid electrolyte particles (Kitami institute of technology) ○TANAKA Taiki·PADARTI Jeevan·HIRAI Sigeto·MATSUDA Takeshi·OHNO Tomoya\*
- 1M09 Electrochemical properties of nano-coated cathode particles with different coating layer structures (Kitami institute of technology) ○Watanabe Issei·Jeevan Kumar Padarti·Hirai Shigeto·Matsuda Takeshi·Ohno Tomoya\*

**電池・イオン伝導**

**(13:20) (Session Chairs: 大野 智也)**



- 1M14 ★ NEDO's R&D Activities of Next-generation Batteries (New Energy and Industrial Technology Development Organization) ○USUDA Hiroyuki
- 1M16 Electrical properties of SOFC multilayer thin films on Through-hole porous silicon substrates (Shizuoka University) ○Machino Tomoaki • Wakiya Naoki\* • Sakamoto Naonori • Kawaguchi Takahiko
- 1M17 Alkali metal doping effect on cage-structured crystal  $12\text{CaO} \cdot 7\text{Al}_2\text{O}_3$  (Shizuoka University) ○KISHI Yusuke • SUZUKI Shuto • KAWAGUCHI Takahiko • WAKIYA Naoki • SAKAMOTO Naonori\*

**(14:40) Break**

**多孔体**

**(15:00) (Session Chairs: 松下 伸広)**

- 1M19 Fluorescent properties of Ag-exchanged proton A type zeolite (Ehime University) ○TAKESHIMA Masakazu • ITAGAKI Yoshiteru • AONO Hiromichi\*
- 1M20 Fabrication of Pore-diameter-controlled Spinel Body Using Hydromagnesite. (Nagoya Institute of Technology) ○INAMI Koki • YAMAGUCHI Keitaro • HASHIMOTO Sinobu\* • (TOWA REFRACTORY ENGINEERING CO.,LTD) MORIGUCHI Keisuke
- 1M21 Cs adsorption of mordenite and their immobilization properties by the heat-treatment (Ehime University) ○SHINKE Kana • TAKAHASHI Ami • ITAGAKI Yoshiteru • AONO Hiromichi\*
- 1M22 Chemical Synthesis of Goethite for Anion Adsorption (Ehime University) ○YAMASAKI Syuji • ITAGAKI Yoshiteru • AONO Hiromichi\*

**(16:20) Break**

**層状化合物・ナノ粒子**

**(16:40) (Session Chairs: 平井 慈人)**

- 1M24 Orientation control of platinum thin films using layered perovskite-type oxide nanosheets as seed layers. (Shizuoka University) ○NAKANO Shota • SUZUKI Yumiko • ENOKIDA Masaya • KAWAGUCHI Takahiko • WAKIYA Naoki • SASAMOTO Naonori\*
- 1M25 Lubrication properties of stearic acid-inserted Mg-Al type layered double hydroxide films (Ehime University) ○SUGA Yusuke • ((Kiwa Chemical Co., Ltd) TAKEYAMA Kazuhiro • NOURA Sota • (Ehime University) AONO Hiromichi\* • FUKUGAICHI Satoru
- 1M26 Pioneering a novel solution process for the synthesis of unit-lattice-thick  $\text{CeO}_2$  nanosheets using the Langmuir film interface as a reaction field. (Tokyo Institute of Technology) ○UCHIYAMA Gaku • matsushita nobuhiro\* • kubota yuta
- 1M27 Control of Exposed Crystal Plane of Catalyst Support Raw Material Boehmite via Oriented Attachment of Their Nanoparticles for Improving  $\text{NiS}_2$ - $\text{MoS}_2/\gamma$ - $\text{Al}_2\text{O}_3$  Activity (Tokyo Institute of Technology) ○Usui Kazuhiro\* • Matsushita Nobuhiro • Kubota Yuta

**■■September 06 (Wed) (Room N) ■■**

**11. Evolution of ceramic powder processing: toward the harmony with DX based society**

**合成プロセス**

**(10:00) (Session Chairs: 富永 雄一)**

- 1N04 Shell structure control of hollow silica nanoparticles synthesized from aqueous sodium silicate solutions (Nagoya Institute of Technology) ○MIYAWAKI Goki • (Nagoya Institute of Technology Advanced Ceramics Research Center) NOJIRI Ryohei • (Nagoya Institute of Technology) WEN Quanyue • (Nagoya Institute of Technology Advanced Ceramics Research Center) JIANG XinXin • ISHIHARA Masahiro • (Nagoya Institute of Technology • Nagoya Institute of Technology Advanced Ceramics Research Center) FUJI Masayoshi\*
- 1N05 Synthesis of highly dispersed hollow silica nanoparticles using PAA/ $\text{NH}_4\text{OH}$  emulsion template method (Nagoya Institute of Technology) ○MIZUKOSHI Aoi • YOSHIDA Yuki • (Nagoya Institute of Technology Advanced Ceramics Research Center) TANAKA Nao • (Nagoya Institute of Technology) WEN Quanyue • (Nagoya Institute of Technology Advanced Ceramics Research Center) JIANG Xinxin • ISHIHARA Masahiro • (Nagoya Institute of Technology • Nagoya Institute of Technology Advanced Ceramics Research Center) Fuji Masayoshi\*
- 1N06 Study of synthesis process of porous alumina of several tens nm in a pore size. (Japan Fine Ceramics Center) ○TAKAHASHI Seiji • TAKATA Masasuke • (Shanghai Jiao Tong University) Shin-ichi Hirano

**解砕・分級プロセス**

**(11:00) (Session Chairs: 飯島 志行)**

- 1N07 ★ Characteristics of the High-Precision Wet Classifier "i Classifier" and applications in Ceramics Powder Processing (SATAKE MultiMix Corporation) ○SATO Makoto
- 1N09 Wet-jet milling process for development of the high thermal conductive hBN/epoxy composites (National Institute of Advanced Industrial Science and Technology) ○TOMINAGA Yuichi • SATO Kimiyasu • IMAI Yusuke

**粉体プロセスとデジタルツイン**

**(13:20) (Session Chairs: 飯島 志行)**

- 1N14 ◆ Development and application of advanced numerical models toward the realization of the digital twin (The University of Tokyo) ○SAKAI MIKIO
- 1N16 Pattern recognition of powder structures by Mahalanobis-Taguchi System (Gifu University • Tohoku University) ○TAKAI Chika • (Nagoya University) YAMASHITA Seiji

**(14:20) (Session Chairs: 高井 千加)**

- 1N17 Understanding the formation process of inhomogeneous structures during wet molding based on correlation with dynamic observation using optical coherence tomography and drying characteristics (Kanagawa Institute of Industrial Science and Technology • Yokohama National University) ○TAKAHASHI Takuma • (Yokohama National University) TATAMI Junichi
- 1N18 ★ Integrating Observation and Simulation: Data Assimilation Techniques for Engineering Applications (KOZO KEIKAKU ENGINEERING Inc.) ○WATAHIKI Soma • OBA Atsuki • YAMAGUCHI Kenji • KATO Shoma

**(15:20) Break**

**造粒・成形プロセス**

**(15:40) (Session Chairs: 高橋 拓実)**

- 1N21 *In-situ* OCT observation of freeze behavior and spray freeze granulation drying of Si<sub>3</sub>N<sub>4</sub> slurry prepared with tert-butyl alcohol and cyclohexane as dispersion medium (Yokohama National University) ○YAMAZAKI Riko•TATAMI Junichi\*•IJJIMA Motoyuki\* (PRECI CO., LTD.) KAWAGUCHI Shinya•(National Institute of Advanced Industrial Science and Technology) KONDO Naoki
- 1N22 Compaction Behaviors of Alumina Granules made by Splay Drying and Spray Freeze Granulation Drying Techniques (National Institute of Advanced Industrial Science and Technology (AIST)) ○KONDO Naoki•SHIMAMURA Akihiro•HOTTA Mikinori\* (Yokohama National University) TATAMI Junichi•(Preci Co. Ltd.) KAWAGUCHI Shinya
- 1N23 Slip Casting of Coarse Alumina with Cellulose Nano Fiber (National Institute of Advanced Industrial Science and Technology (AIST)) ○KONDO Naoki•USUKAWA Ryutarō•SHIMAMURA Akihiro•HOTTA Mikinori

**(16:40) (Session Chairs: 近藤 直樹)**

- 1N24 Curing behaviors of interparticle photo-cross-linkable silica slurries treated with silane alkoxides having acryloyl groups and sintering properties of photocured bodies (Yokohama National University) ○YAMADA SAYAKA•TATAMI JUNICHI•IJJIMA MOTOYUKI\*
- 1N25 Structuring complex structured transparent silica glass components through stereolithography and rapid drying/firing process using nanoparticle slurries (Yokohama National University) ○IJJIMA Motoyuki•YAMANOI Yoshihiko•NISHIYAMA Kengo•TATAMI Junichi

■■September 06 (Wed) (Room R) ■■

**10. Material Design and Processing Design**

**微粒子合成**

**(9:00) (Session Chairs: 林 大和)**

- 1R01 ◆ Designs of particles and their interfaces to control spatial distribution of materials (Tohoku University) ○NAGAO Daisuke
- 1R03 Examination of preparation conditions of flower-like titania particles using a porous hydrous titania precursor (Chiba University) ○YATAGAI Miyu•KOJIMA Takashi\*•KIMURA Yuki•MUROFUSHI Mizuki•UEKAWA Naofumi
- 1R04 Synthesis of N-doped and Pt-loaded cubic-shaped titania nanoparticles (Chiba University) ○SHIMOTANI Akari•KOJIMA Takashi\*•HOSOYA Syuhei•UEKAWA Naofumi

**(10:20) Break**

**触媒・環境・リサイクル**

**(10:40) (Session Chairs: 小島 隆)**

- 1R06 Microwave synthesis of WO<sub>x</sub>-FeWO<sub>4</sub> heterostructure composites for near-infrared-driven photocatalysis (Nagoya Institute of Technology) ○KATO Kunihiko•Ni Kadek Sagit Ari Warsani•Xin Yunzi•Shirai Takashi
- 1R07 Development of Novel Green Catalyst towards Sufficient Recycling of Carbon Fiber Reinforced Plastics (Advanced Ceramics Research Center, Nagoya Institute of Technology) ○XIN Yunzi•Goto Mai•Kato Kunihiko•Xu Yuping•Shirai Takashi
- 1R08 Study on clay preparation for pottery using mineral residue of silica sand manufacturing -Effective utilization of unused materials in the pottery industry- (Fukuoka Industrial Technology Center) ○SAKAMOTO Naotaka•OYAKAWA Yumeko
- 1R09 The reaction behavior of eluted metal ions from coal ash and its evaluation (Nagoya Institute of Technology Advanced Ceramics Research Center) ○Sangu Takumi•Xin Yunzi•Kato Kunihiko•Xu Yuping•Shirai Takashi\*

■■September 06 (Wed) (Room S) ■■

**25. Materials Innovation on Thermal Energy Conversion and Harnessing IV**

**熱制御**

**(13:20) (Session Chairs: 片瀬 貴義)**

- 1S14 ★ Thermoelectric conversion and thermal management based on spin caloritronics (National Institute for Materials Science) ○UCHIDA Ken-ichi
- 1S16 Large conventional and inverse electrocaloric effects in antiferroelectric PbMg<sub>0.5</sub>W<sub>0.5</sub>O<sub>3</sub> (Murata Manufacturing Co., Ltd.) ○HIROSE Sakyo•USUI Tomoyasu•(National Institute for Materials Science) HIROTO Takanobu•(University of Cambridge) Nair Bhasi•Moya Xavier•Mathur Neil
- 1S17 VO<sub>2</sub> solid-state hybrid PCM towards thermal management (National Institute of Advanced Industrial Science and Technology) ○KINEMUCHI Yoshiaki•Liu Zheng•Nakayama Hiroyuki•Fujita Asaya•Ozaki Kimihiro

**(14:40) Break**

- 1S19 ★ Control of Thermal Conduction in Ceramic Materials by Grain Boundaries and Dislocations (Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University•Nanostructures Research Laboratory, Japan Fine Ceramics Center) ○YOSHIYA Masato•(Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University) SEKIMOTO Wataru•HARA Tomofumi•HORIKAWA Takaya•(Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University•Nanostructures Research Laboratory, Japan Fine Ceramics Center) FUJII Susumu

**(15:40) (Session Chairs: 安井 伸太郎)**

- 1S21 Thermal Conductivity Switching by 2D-3D Structural Phase Transition in (Sn<sub>1-x</sub>Pb<sub>x</sub>)S above Room Temperature (Tokyo Institute of Technology) ○Hu Zhongxu•Hiramatsu Mari•He Xinyi•Katase Takayoshi\*•Kamiya Toshio\*
- 1S22 Anomalous thermal conductivity behavior with metal-insulator transition in spinel CuIr<sub>2</sub>S<sub>4</sub> (Tokyo Institute of Technology) ○HASHIMOTO Kenta•KITANI Suguru•KAWAJI Hitoshi\*

**(16:20) Break**

- 1S24 ☆ Narrowband thermal emission and radiative cooling with multilayers (National Institute for Materials Science•University of Tsukuba) ○ISHII Satoshi•(National Institute for Materials Science) Hernandez David•(National Tsing Hua University) Chen Kuo-Ping
- 1S26 Development of spherical MgO filler : the effect of particle void on thermal conductivity characteristics (Ube Material Industries, Ltd.) ○UEDA Yuji•YOSHIMATSU Ryo•NISHIDA Naoto•MITANI Atsuyuki

**総合討論**

**(17:40) (Session Chairs: 片瀬 貴義)**

- 1S27 総合討論

## ■■September 06 (Wed) (Room T) ■■

### 05. Photoceramics - Synthesis, Functions and Applications of Optical and Colorful Ceramics-

#### フोटニック結晶

##### (9:00) (Session Chairs: 北川 裕貴)

- 1T01 Fabrication of scintillator materials using photonic structures and evaluation of their luminescence properties (The University of Tokushima) ○TSUJI Kazuma・SHIMADA Mirei・KISIDA Kosuke・MAEKAWA Taiki・MURAI Kei-ichiro・MORIGA Toshihiro\*
- 1T02 Synthesis and characterization of polycrystalline  $\beta$ -TaON photonic crystal photocatalysts (The University of Tokushima) ○MAEKAWA Taiki・TATEISHI Naoki・IKEDA Miki・NAKANISHI Akihiro・ONOE Tomoya・MURAI Kei-ichiro・MORIGA Toshihiro\*・(The University of Auckland) GEOFFREY Waterhouse

#### 希土類蛍光体

##### (9:40) (Session Chairs: 北川 裕貴)

- 1T03 Development of New Phosphors Doped with  $Ce^{3+}$  Using Bond Valence Sum (Tokai University) ○KIUCHI Taisei・TOMITA Koji\*・(Okayama University of Science) SATO Yasushi・(Nagoya University) KOBAYASHI Makoto・(Tohoku University) YIN Shu・(Osaka University) KAKIHANA Masato
- 1T04 Heat treatment effects of electric properties of  $CaSn_{0.9}In_{0.1}O_{3-\delta}$  thin film (Gunma University) ○KYOMEN Toru

##### (10:20) Break

#### 希土類フリー蛍光体

##### (10:40) (Session Chairs: 和田 憲幸)

- 1T06 ★ Development and Application of the Zinc Oxide Phosphors for Cathodoluminescent Emittance (Mie Pref. Ind. Res. Inst.) ○INOUE Koji
- 1T08 Performance and Evaluation of  $Cr^{3+}$  doped  $MHfO_3$  System ( $M=Ca^{2+}$ ,  $Sr^{2+}$  and  $Ba^{2+}$ ) as Luminescent Boltzmann Thermometer (Kyoto University) ○Li Jiazheng・(Ca Foscari University of Venice) Back Michele・(Japan Advanced Institute of Science and Technology) Ueda Jumpei・(Kyoto University) Tanabe Setsuhisa\*

#### 固体照明

##### (11:40) (Session Chairs: 和田 憲幸)

- 1T09 Photoluminescence property of nano silica mixed YAG phosphors (Tokushima University) ○SOGABE Tatsuki・(Shimane University) OHARA Koji・(Osaka University) KOJIMA Kazunobu・(Tokushima University) OISHI Masatsugu\*・(Shimane University) HIROI Satoshi

#### 消光・残光

##### (13:20) (Session Chairs: 渡邊 美寿貴)

- 1T14 ★ Luminescence Quenching by Photo-Induced Carrier Transfer in Phosphors (Japan Advanced Institute of Science and Technology) ○UEDA Jumpei
- 1T16 Annealing and Co-doping Effect on Persistent Luminescence of  $Y_3Al_2Ga_3O_{12}$  Ceramic Phosphors (kyoto University) ○DU Qiping\*・(Japan Advanced Institute of Science and Technology) UEDA Jumpei・(kyoto University) TANABE Setsuhisa\*

##### (14:20) Break

#### Eu 蛍光体

##### (15:00) (Session Chairs: 早川 知克)

- 1T19 Emission modulation of  $Eu^{3+}$  by symmetry around eight-coordinated sites in new garnet-type  $Ca_2EuZr_{2-x}Sn_xGa_3O_{12}$  ( $x = 0, 0.5, 1, 1.5,$  and  $2$ ) phosphors (The University of Tokushima) NAKANISHI Akihiro・○ONOE Tomoya・MAEKAWA Taiki・MURAI Kei-ichiro・MORIGA Toshihiro\*
- 1T20 Synthesis and luminescence properties of solid-solution  $KEu_{1-x}Y_x(MoO_4)_2$  phosphors (Tohoku University) ○NODA Suzuka・HASEGAWA Takuya\*・OKAWA Ayahisa・YIN Shu
- 1T21 Synthesis and characterization of  $EuAl_2Si_2O_8$  phosphor (Chuo University) ○ONO Naoki・HIRAI Yutaro・OH-ISHI Katsuyoshi\*・(Niigata University) WATANABE Mizuki
- 1T22 Structural and luminescence characterization of  $NaMg(P,Si)O_4:Eu^{2+}$  phosphor based on single-particle analyses (Tohoku University) ○HASEGAWA Takuya・(National Institute for Materials Science) TAKEDA Takashi・FUNAHASHI Shiro・XU Jian・NAKANISHI Takayuki・(Niigata University) TODA Kenji・(Tohoku University) OKAWA Ayahisa・YIN Shu

##### (16:20) Break

##### (16:40) (Session Chairs: 粟屋 恵介)

- 1T24 Local structural distortion and photoluminescence color purities for  $Eu^{3+}$ -doped double perovskite-type red phosphors (Nagoya Institute of Technology) ○HAYAKAWA Tomokatsu・Otsuka Takahito・(Erlangen-Nuremberg University (FAU)) Dobesh Davide・(Nagoya Institute of Technology) Oka Ryohei・(Erlangen-Nuremberg University (FAU)) Cicconi Rita・de Ligny Dominique
- 1T25 Synthesis and photoluminescence characterization of  $\beta$ - $Sr_{1-x}Ca_xAlSi_4N_7:Eu^{2+}$  (Mitsubishi Chemical Corp.) ○yoshimura fumitaka\*・(Tohoku Univ.) yamane hisanori

#### 近赤外蛍光体

##### (17:20) (Session Chairs: 粟屋 恵介)

- 1T26 Structure and emission mechanism of  $Yb^{3+}$ -doped lead-free  $Ba_2(Gd,Bi)NbO_6$  wavelength conversion materials (Nagoya Institute of Technology) ○MATSUOKA KOUSEI・OKA Ryohei\*・HAYAKAWA Tomokatsu\*・(Friedrich Alexander University Erlangen-Nuremberg) Christoph Brabec
- 1T27 Spectroscopic and Theoretical Characterization of Optical Properties for  $Ni^{2+}$  Doped Perovskite-Type Near-Infrared Phosphors (National Institute of Advanced Industrial Science and Technology) ○Kitagawa Yuuki・(National Institute of Advanced Industrial Science and Technology) Osaka University) Shinozaki Kenji

## ■■September 06 (Wed) (Room U) ■■

## 16. Multidisciplinary development of oxoate materials science and technology

### 2次電池

#### (9:40) (Session Chairs: 大倉 利典)

- 1U03 Synthesis of  $\text{Na}_3\text{V}_2(\text{PO}_4)_2\text{F}_3$  by a Water-Assisted Solid-State Reaction Method (Niigata University) ○UCHIDA Toshiki·IWAKI Masato·WATANABE Mizuki·SATO Mineo·TODA Kenji\*
- 1U04 Synthesis of  $\text{TiNb}_2\text{O}_7$  single crystals and their anisotropic lithium ion diffusion (Saitama University) ○TAKEDA Hiroaki·IMANO Naruto·(National Institute of Advanced Industrial Science and Technology) SUZUKI Muneyasu·MEKARU Harutaka·(Saitama University) KODAMA Shohei·YANASE Ikuo

#### (10:20) Break

#### (10:40) (Session Chairs: 内田 寛)

- 1U06 Fabrication and evaluation of compositionally-graded epitaxial thin films of La doped  $\text{LiCoO}_2$  for lithium-ion secondary batteries (Tohoku University) ○KAMINAGA Kenichi·SUZUKI Kanta·(Tokyo Institute of Technology) NANASAWA Daigo·YASUI Shintaro·(Tohoku University) MARUYAMA Shingo·MATSUMOTO Yuji
- 1U07 Fabrication and evaluation of compositionally-graded epitaxial thin films of cathode materials for ternary lithium-ion secondary batteries (TOHOKU UNIVERSITY) ○TOBE Takuto·KAMINAGA Kenichi·(Tokyo Institute of Technology) TAKEI Sosuke·YASUI Shintaro·(TOHOKU UNIVERSITY) MARUYAMA Shingo·MATSUMOTO Yuji\*
- 1U08 The synthesis and characterization of LISICON type solid-state electrolytes in  $\text{Li}_3\text{BO}_3\text{-Li}_3\text{PO}_4\text{-Li}_2\text{SO}_4$  quasi-ternary phase system (Tokyo Institute of Technology) ○Ikeda Masahito·Liu Qiumin·Azuma Masaki\*·(National Institute for Materials Science) Jalem Randy·Tateyama Yoshitaka·Kuwata Naoaki

### バイオ材料

#### (13:20) (Session Chairs: 橋本 和明)

- 1U14 ★ Bioactive sol-gel glasses releasing therapeutic ions (Nagoya Institute of Technology) ○OBATA Akiko·KASUGA Toshihiro
- 1U16 Differentiation of Mesenchymal Stem Cells Cultured on Hydroxyapatite Ceramics with Preferred Orientation to *a*-plane (Meiji University) ○OISHI Tatsuya·ONUMA Erika·YAMADA Yuta·TAMAZAWA Masaki·(Meiji University·Meiji University International Institute for Materials with Life Functions) AIZAWA Mamoru\*
- 1U17 Fabrication of anisotropically-controlled Sr-substituted hydroxyapatite ceramics and their *in vitro* evaluations using osteoblasts (Meiji University) ○ONUMA Erika·KOIZUMI Haruna·YOSHIDA Shuhei·Ando Yasuaki·(Meiji University·Meiji University International Institute for Materials with Life Functions) AIZAWA Mamoru\*

#### (14:40) Break

#### (15:00) (Session Chairs: 相澤 守)

- 1U19 Preparation and characterization of lithium-substituted beta-tricalcium phosphate sintered body (Chiba Institute of Technology) ○UEKI Risa·SHIBATA Hirobumi·HASHIMOTO Kazuaki\*
- 1U20 Fabrication and characterization of porous beta-tricalcium phosphate by replica method with 3D designed polymer molds (Chiba Institute of Technology) ○OHTSUKI Nona·SHIBATA Hirobumi·HASHIMOTO Kazuaki\*

### 誘電材料

#### (15:40) (Session Chairs: 相澤 守)

- 1U21 Dielectric Properties and Thermal Conductivity of  $\text{BaTiO}_3$ /poly-vinylidene fluoride Composites (Tokyo City University) ○OGIYA Taito·YAMAZAKI Haruna·KONEMURA Ryo·(Tokyo Institute of Technology) KITANI Suguru·(Tokyo City University) SATO Yoshihiro·(Tokyo Institute of Technology) KAWAJI Hitoshi·(Tokyo City University) MUNAKATA Fumio\*
- 1U22 Synthesis of  $\text{SrTiO}_3$  nanoparticles in benzyl alcohol at ordinary pressure and mild temperatures (Hosei University) ○ONO Ryoga·KOYASU Satoshi·ISHIGAKI Takamasa\*

#### (16:20) Break

#### (16:40) (Session Chairs: 宗像 文男)

- 1U24 Evaluation for formation mechanism of alkali niobate films and powders under hydrothermal condition (Sophia University) ○UCHIDA Hiroshi·YOKOTA Yukie
- 1U25 Development of ferroelectric materials based on tantalates ~Influence of niobium substitution~ (National Defense Academy) ○SHIMA Hiromi·HAMASAKI Yosuke·SAWAI Shinya·(Sophia University) Uchida Hiroshi

### その他

#### (17:20) (Session Chairs: 宗像 文男)

- 1U26 Synthesis of zinc oxide-coated flaky mica particles (Tokai University) ○NIBE Yuna·KATO Hayata·YAMAZAKI Hiroto·MATSUMAE Yoshiharu\*·HIGUCHI Masashi\*
- 1U27 Synthesis of Aragonite and Its Shape Control (Nihon University) ○KOGO Mitsuki·SUZUKI Kenta·UMEGAKI Tetsuo·KOJIMA Yoshiyuki

## ■■September 06 (Wed) (Room V) ■■

## 20. Science and Technology for Densification – new trends of sintering technology -

### 内部構造

#### (9:20) (Session Chairs: 南口 誠)

- 1V02 Heterogeneities and defects in powder compacts and sintered alumina bodies visualized by using the synchrotron X-ray CT (National Institute for Materials Science) ○OKUMA Gaku·OSADA Toshio·SHIMODA KAZUYA·KAKISAWA Hideki·WAKAI Fumihiko·(Tokyo University of Science) MINAGAWA Haruki·ARAI Yutaro·INOUE Ryo·(Japan Synchrotron Radiation Research Institute) TAKEUCHI Akihisa·UESUGI Masayuki·(Nagaoka University of Technology) TANAKA Satoshi
- 1V03 X-ray computed tomography study of pore structure of glass-beads filter (Tokyo University of Science) ○KAMEMURA Mayu·MACHIDA Shingo·(National Institute for Materials Science) OKUMA Gaku·(Tokyo University of Science) ARAI Yutaro·KATSUMATA Ken-ichi\*·YASUMORI Atsuo\*
- 1V04 Analysis of internal defect formation in sintering of  $\text{Al}_2\text{O}_3$  granules (Tokyo University of Science) ○MINAGAWA Haruki·(National Institute for Materials Science) Okuma Gaku·(Tokyo University of Science) Arai Yutaro·(Nagaoka University of Technology) Tanaka Satoshi·(National Institute for Materials Science) Wakai Fumihiko·Kakisawa Hideki·(Tokyo University of Science) Inoue Ryo\*

**(10:20) Break****材料****(10:40) (Session Chairs: 吉田 英弘)**

- 1V06 Roles of alkali ions in densification process of cold sintered lithium disilicate glass materials (Osaka University) ○Lyu Xigeng·Seo Yeongjun·Cho SungHun·Goto Tomoyo·Kondo Yoshifumi·Sekino Tohru\*
- 1V07 Processing of oriented and dense layered Ni-based compound  $Nd_{n+1}Ni_nO_{3n+1}$  ( $n = 3$ ) in ordinary atmosphere (Kumamoto University) ○AOKI Shunsuke·SHIMODA Naoya·NAGAI Anna·MATSUDA Motohide\*
- 1V08 Effect of the addition of Motoyama Gairome clay on the firing of Arita ware (Saga University) ○HAO DONG
- 1V09 Densification of amorphous silica using cold sintering process (Nagoya Institute of Technology) ○NAKANISHI Masato·YAMAGUCHI Keitaro·HASHIMOTO Sinobu\*

**(13:20) (Session Chairs: 山本 剛久)**

- 1V14 Sintering Temperature Dependence in Sintering of Water-Treated Aluminum Dross Powder (Nagaoka University of Technology) ○Suzuki Kaito·(K.K.Suzumura) SUZUMURA Takahiro·(Nagaoka University of Technology) KUO Yen-Ling\*·NANKO Makoto\*
- 1V15 Effect of raw powder and sintering condition on transparency of Y- $\alpha$ -SiAlON ceramics (Yokohama National University) ○Ito Taichi·Tatami Junichi\*·Iijima Motoyuki·(Kanagawa Institute of Industrial Science and Technology) Takahashi Takuma·Yokouchi Masahiro

**放電プラズマ焼結****(14:00) (Session Chairs: 山本 剛久)**

- 1V16 Densification behavior of  $Y_2O_3$  ceramics according to mold set up in spark plasma sintering (National Institute for Materials Science) ○LEE JIHWAN·KIM Byung-Nam·MORITA Koji

**(14:20) Break**

- 1V17 Influences of sintering atmosphere on transparency of transparent alumina ceramics prepared by two-step pulsed electric current sintering (Nagaoka University of Technology) ○OGASHIWA Yutaro·KUO Yen-Ling\*·NANKO Makoto\*

**(14:40) Break****フラッシュ焼結****(15:00) (Session Chairs: 大熊 学)**

- 1V19 ★ Clarification and utilization of the electric current effect on polycrystalline zirconia ceramics (8Y-CSZ) (NIMS) ○MORITA Koji
- 1V21 Electric effects of lattice and grain boundary diffusion on microcrack flash healing behavior in zirconia (Nagoya university graduate school of engineering) ○KAYUKAWA Shunsuke·(Nagoya university school of engineering) TOKUNAGA Tomoharu·(National Institute for Materials Science) MORITA Koji·(Nagoya university school of engineering) YAMAMOTO Takahisa\*
- 1V22 The effect of flash sintering on the photoluminescence properties and microstructure of  $Ga_2O_3$  (Nagoya University graduate school of engineering) ○TAMURA Ryoma·(Nagoya University school of engineering) TOKUNAGA Tomoharu·YAMAMOTO Takahisa\*

**(16:20) (Session Chairs: 南口 誠)**

- 1V23 総合討論

**■September 07 (Thu) (Room A) ■****03. Fundamental science and new developments in ceramic-based biomaterials - Design of Novel Function for Biomaterials in Biomedical and Dental Engineering****(9:00) (Session Chairs: 李 誠鎬·木村 玲雄)**

- 2A01 Preparation and evaluation of calcium phosphate cements set by precipitations of octacalcium phosphate under physiological environment (Tohoku University) ○ITO Yuichiro·UMETSU Masaki\*·KAMITAKAHARA Masanobu\*
- 2A02 In-situ microscopic observation of living cell response by direct  $Ag^+$  ion implantation (Nagoya institute of technology) ○MATSUYAMA Moeka·Obata Akiko·Daiko Yusuke\*
- 2A03 First-principles ELNES simulation of P-O based materials (Nagoya Institute of Technology) ○KAWABATA Kosuke·(Nagoya Institute of Technology) TAMURA Tomoyuki\*

**(10:00) (Session Chairs: 山田 真也·臼杵 壮一朗)**

- 2A04 Effects of Ga introduction into  $SiO_2$ -CaO sol-gel glasses on their structure and dissolution (Nagoya Institute of Technology) ○HASHIMI Takuto·OBATA Akiko\*·KASUGA Toshihiro
- 2A05 Dissolution of zinc-containing phosphate invert glass prepared by liquid-phase method (National Institute of Advanced Industrial Science and Technology·Chubu University) ○SHIRAKI SHOTA·(Nagoya Institute of Technology) TAKAHASHI MINORI·OBATA AKIKO·(Chubu University) SAKURAI MAKOTO·(National Institute of Advanced Industrial Science and Technology) NAGATA FUKUE·LEE SUNGHO\*

**(10:40) Break****(11:00) (Session Chairs: 藪塚 武史)**

- 2A07 ◆ Antiviral ceramics (Ceramic Physics Laboratory, Kyoto Institute of Technology·Department of Molecular Genetics, Institute of Biomedical Science, Kansai Medical University·Department of Immunology, Graduate School of Medical Science, Kyoto Prefectural University of Medicine·Department of Dental Medicine, Graduate School of Medical Science, Kyoto Prefectural University of Medicine·Department of Orthopedic Surgery, Tokyo Medical University·Department of Applied Science and Technology, Politecnico di Torino·Department of Molecular Science and Nanosystems, Ca' Foscari University of Venice) ○Pezzotti Giuseppe
- 2A09 総合討論

**(13:20) (Session Chairs: 山口 将吾)**

- 2A14 ★ Development and commercialization of bone void filler with collagen Bonarc® (Toyobo CO., LTD.) ○MATSUBAYASHI HIDEHIGE
- 2A16 総合討論

**(14:20) Break****(14:40) (Session Chairs: 上高原 理暢·村井 一喜)**

- 2A18 Fabrication of anisotropically-controlled strontium-substituted apatite ceramics and their cellular responsiveness (Meiji University) ○KAWANAKA Yuma・ONUMA Erika・OISHI Tatsuya・ANDO Yasuaki・KOIZUMI Haruna・YOSHIDA Shuhei・(Meiji University・Meiji University International Institute for Materials with Life Functions) AIZAWA Mamoru\*
- 2A19 Fabrication of hydroxyapatite ceramics to promote angiogenesis and osteogenesis and its evaluation of cell responsiveness (Meiji University) ○Shibahara Haruka・Suzuki Kitaru・Onuma Erika・(Meiji University・Meiji University International Institute for Material with Life Functions) Aizawa Mamoru\*
- 2A20 Fabrications of Paste-like Organic/inorganic Hybrid Artificial Bone with Anti-bacterial Filler and Their Biological Evaluations (Meiji University) ○KAMAYA YUKI・KATO SHIORI・(Keio University) MIYASHITA HIDERTAKA・SOMA TOMOYO・NAKAGAWA TANEAKI・MORIKAWA SATORU・(Meiji University・Meiji University International Institute for Materials with Life Functions) AIZAWA MAMORU\*

**(15:40) (Session Chairs: 野々山 貴行・大沼 恵里香)**

- 2A21 Antibacterial Agent Adsorption onto Octacalcium Phosphate and its Osteoblastic Differentiation Capacity (Tohoku University) ○Chaiariyakul Danupong・Hamai Ryo・Shiwaku Yukari・Tsuchiya Kaori・Suzuki Osamu\*
- 2A22 Preparation of octacalcium phosphate granules with different silver ion loading methods and evaluation of their antimicrobial properties (Tohoku University) ○NAGAHAMA Ryota・UMETSU Masaki・KAMITAKAHARA Masanobu\*
- 2A23 Effect of Ga<sub>2</sub>O<sub>3</sub> addition on high-speed sintered 5Y dental zirconia (SHOFU INC.) ○NONAKA Kazumichi・TERAMAE Mitsuji・(Kyoto Institute of Technology) PEZZOTTI Giuseppe

**(16:40) Break**

**(17:00) (Session Chairs: 中村 真紀)**

- 2A25 ★ The Use of Ceramics in Dental Treatment (National Institute of Advanced Industrial Science and Technology) ○YOSHIHARA Kumiko
- 2A27 総合討論

**■■September 07 (Thu) (Room B) ■■**

**08. Materials science of inorganic compounds utilizing elemental/structural diversities**

**超セラミックス**

**(9:00) (Session Chairs: 樽淵 友治)**

- 2B01 Anion Receptor Chemistry of Bowl-Shaped Vanadium-Oxygen Cluster (Kanazawa University) ○KIKUKAWA Yuji・HAYASHI Yoshihito
- 2B02 Liquid-Phase and Proanion Synthesis of Metal Oxycarbodiimides and Investigation of Their Reaction Mechanism (Hiroshima University) ○SUMIOKA Oomi・TARUTANI Naoki・KATAGIRI Kiyofumi・INUMARU Kei・(Kindai University) SUGIMOTO Kunihisa・(Kanagawa University) ASAI Yusuke・SAITO Miwa・MOTOHASHI Teruki
- 2B03 Formation of PbS networks and photoconductivity associated with structural phase transition of coordination polymers (Kwansei Gakuin University) ○TANAKA Daisuke・HAMANO Ryo・AKIYOSHI Ryohei・OGURA Saori・TAKAHASHI Nanami・(Osaka University) SAEKI Akinori・NAKANE Takanori・KAWAMOTO Akihiro・KURISU Genji
- 2B04 Investigation of crystal phase transition upon thermal decomposition of Sr<sub>3</sub>Fe<sub>2</sub>(OH)<sub>12</sub> hydrogarnet (Nagoya University) ○HASEGAWA George・(Kyushu University) AKAMATSU Hirofumi・(Nagoya University) NAKANISHI Kazuki・(Kyushu University) HAYASHI Katsuro

**(10:20) Break**

**(10:40) (Session Chairs: 堀毛 悟史)**

- 2B06 Structural phase transition associated with formation and dissociation of P<sub>2</sub> molecules in Sr(Fe<sub>1-x</sub>Ni<sub>x</sub>)<sub>2</sub>P<sub>2</sub> (Hiroshima University) NAGASE Yutaro・RAMAKRISHNAN Sitaram・ONOHARA Minoru
- 2B07 Development of High-Energy X-ray Total Scattering Measurement System and Structural-Analysis Method for the Elucidation of the Local Structure of Supra Ceramics (Japan Synchrotron Radiation Research Institute) ○Yamada Hiroki・Tseng Jochi・Shimono Seiya・(Shimane University) Ohara Koji
- 2B08 ★ Development of Inorganic Liquid Crystal from Single-Layered Boron Sheets (Tokyo Institute of Technology) ○KAMBE Tetsuya

**負熱膨張**

**(13:00) (Session Chairs: 岡 研吾)**

- 2B13 Domain Structure Observation and Design of Negative Thermal Expansion Utilizing Giant Volume Change under Pressure of PbVO<sub>3</sub> (Kanagawa Institute of Industrial Science and TRechnology・Tokyo Institute of Technology) ○NISHIKUBO Takumi・(Tokyo Institute of Technology) IMAI Takashi・(Kanagawa Institute of Industrial Science and TRechnology・Tokyo Institute of Technology) SAKAI Yuki・(Kumamoto University) MIZUMAKI Masaichiro・(Japan Synchrotron Radiation Research Institute) KAWAGUCHI Shogo・(National Institutes for Quantum Science and Technology) OSHIME Norihiro・SHIMADA Ayumu・SUGAWARA Kento・OHWADA Kenji・MACHIDA Akihiko・WATANUKI Tetsu・(Toray Research Center) KURUSHIMA Kosuke・(Osaka Metropolitan University) MORI Shigeo・(Waseda University) MIZOKAWA Takashi・(Tokyo Institute of Technology・Kanagawa Institute of Industrial Science and TRechnology) AZUMA Masaki
- 2B14 Realization of negative thermal expansion in BiCoO<sub>3</sub> with PbTiO<sub>3</sub>-type giant tetragonal distortion (Tokyo Institute of Technology) ○Takahashi Kazuki・(Kanagawa Institute of Industrial Science and Technology) Sakai Yuki・Nishikubo Takumi・(Tokyo Institute of Technology・Kanagawa Institute of Industrial Science and Technology) Azuma Masaki
- 2B15 Charge transfer and negative thermal expansion in quadruple perovskite oxides CaCu<sub>3</sub>Fe<sub>4-x</sub>Mn<sub>x</sub>O<sub>12</sub> (Osaka Metropolitan University) ○GOTO Manami・(Tohoku University) YAMAMOTO Hajime・(Osaka Metropolitan University) KIMURA Kenta\*

**(14:00) Break**

**(16:00) (Session Chairs: 斉藤 美和)**

- 2B22 Evaluation of thermal expansion properties and hygroscopicity of In<sub>2-x</sub>Y<sub>x</sub>Mo<sub>3</sub>O<sub>12</sub> (Tokushima University) ○ARII Tomoya・KITANO Syota・MURAI Kei-ichiro・MORIGA Toshihiro\*
- 2B23 Diffusionless phase transformation and mechanical properties of Na<sub>3</sub>YCl<sub>6</sub> (Hokkaido university) ○MAKI Kotaro・(The University of Tokyo) MURAOKA Koki・(JASRI) KAWAGUCHI Saori・(Toyohashi University of Technology) HIKIMA Kazuhiro・MUTO Hiroyuki・MATSUDA Atsunori・(Hokkaido university) YAMANE ICHIRO・SHIMADA Toshihiro・ITO Hiroaki・(Tokyo Metropolitan University) Mizuguchi Yoshikazu・(Hiroshima University) MORIYOSHI Chikako・(The University of Tokyo) OIKE HIROSHI・

**多元系無機化合物**

**(16:40) (Session Chairs: 齊藤 美和)**

2B24 Multiple metal incorporation and deposition behavior into apatite-type phosphates (Akita University) ○KATO Sumio Kagawa Sota Usami Yuma Saito Kanji Ogasawara Masataka

**(17:00) (Session Chairs: 本橋 輝樹)**

2B25 ◆ My experience in synthesis and crystal structure analysis of multinary inorganic compounds (Tohoku University) ○YAMANE Hisanori

**■■September 07 (Thu) (Room C) ■■**

**06. Fundamental Research and Applied Development of Ceramic Materials for Energy Conversion, Storage and Transportation**

**PCFC**

**(9:00) (Session Chairs: 大石 昌嗣)**

2C01 First-Principles Calculations of Hydration Enthalpies of Candidate Fuel Cell Cathode Materials  $L_nM O_3$  ( $L_n=La-Nd$ ,  $M=Co,Ni$ ) (Japan Fine Ceramics Center) ○FISHER Craig Taguchi Ayako Ogawa Takafumi Kuwabara Akihide

2C02 Preparation of *c*-axis-aligned polycrystalline lanthanum aluminosilicate oxyapatite and evaluation of its oxide-ion conductivity (Nagoya Institute of Technology) ○KANEFUSA Kana OKADA Shu (Univ. Hyogo) TERAO Iori MINESHIGE Atsushi (Nagoya Institute of Technology) URUSHIHARA Daisuke\* ASAKA Toru\* FUKUDA Koichiro\*

2C03 Mixed protonic and electronic conductivity of Nb-doped  $TiO_2$  under hydrogen atmosphere (Tohoku University) ○SHIRAIWA Takuma OMATA Takahisa\*

2C04 Mixed protonic and electronic conductivity of  $MgIn_2O_4$  under hydrogen atmosphere (Tohoku University) ○KUDO Saki OMATA Takahisa\*

**(10:20) Break**

**イオニクス**

**(10:40) (Session Chairs: 島田 寛之)**

2C06 ★ Properties and Processing of Proton Conducting Barium Zirconates (Kyoto University) ○UDA TETSUYA

**キャパシタ**

**(11:40) (Session Chairs: 島田 寛之)**

2C09 *Ab initio* study of electrochemical reaction of Cobalt Carbonate Hydroxide (CCH) pseudo-capacitor material (Japan Advanced Institute of Science and Technology) ○Oqmhula Kenji Toma Takahiro Maezono Ryo\* Hongo Kenta\*

**全固体 Ag 電池**

**(13:20) (Session Chairs: 田港 聡)**

2C14 All solid-state  $Ag^+$  battery using silver carbonate iodide solid electrolyte (Yamagata University) ○MATSUSHIMA Yuta SHIMIZU Takuto WAJIMA Sora UCHIDA Kento (Tohoku University) YAMANE Hisanori

**全固体 Li 電池**

**(13:40) (Session Chairs: 田港 聡)**

2C15 Fabrication and Nano-Structural Observations of Cathode-Solid Electrolyte for All-Solid-State Batteries (Fine Ceramics Center) ○IKUHARA Yumi Kobayashi Shunsuke Nakayama Kei Kuwabara Akihide (Fine Ceramics Center The University of Tokyo) Ikuhara Yuichi

**(14:00) (Session Chairs: 石田 直哉)**

2C16 ☆ Design of positive electrode materials for all-solid-state lithium-sulfur batteries (Osaka Metropolitan University) ○SAKUDA Atsushi MOTOHASHI Kota HAYASHI Akitoshi

**(14:40) Break**

**Mg 電池**

**(15:00) (Session Chairs: 是津 信行)**

2C19 Dependent of composition electrochemical properties, average and local electronic structures of cathode materials  $0.3MgCo_{2-x}Mn_xO_4-0.7Mg(Mg_{0.33}V_{1.67-y}Ni_y)O_4$  as Mg secondary battery (Tokyo University Of Science) ○KUMAGAI Shinichi ISHIBASHI Chiaki\* KITAMURA Naoto\* IDEMOTO Yasushi\*

2C20 Electrochemical Properties and Crystal and Electronic Structures Analysis using Quantum Beam of  $Mg_{1.33-y}(V_{1.67-x+y}Mn_x)O_4$  Cathode Materials in Magnesium Secondary Battery (Tokyo University of Science) ○YAMANOUCI Kohei ISHIBASHI Chiaki KITAMURA Naoto IDEMOTO Yasushi\*

2C21 Changes in Cathode Characteristics and Average/Local Structures of  $MgMn_2O_4$  Mg Secondary Battery Cathode Material by Surface Modification with Metal Oxides (Tokyo University of Science) ○NORITAKE Ryo KITAMURA Naoto\* ISHIBASHI Thiaki IDEMOTO Yasushi

**Li 正極**

**(16:00) (Session Chairs: 是津 信行)**

2C22 Chemical oxidation of spinel-type  $LiNi_{0.5}Mn_{1.5}Ti_{0.2}O_4$  fine particles by  $(NH_4)_2S_2O_8$  (Tokyo University of Science) ○Yamanishi Yuta Aimi Akihisa\* Fujimoto Kenjiro\*

**(16:20) Break**

**(16:40) (Session Chairs: 藤本 憲次郎)**

2C24 Synthesis and electrochemical properties of  $Li_{5-3x}Fe_{1-x}Mn_xO_4$  with anti-fluorite type structure for lithium battery cathode (Mie University) ○TAMINATO Sou GOTO RYOSUKE MORI DAISUKE IMANISHI NOBUYUKI

**Li 負極**

**(17:00) (Session Chairs: 藤本 憲次郎)**

- 2C25 Negative electrode characteristics and crystal/electronic structure of lithium-ion battery negative electrode material  $Ti_{1-2x}Nb_{2+x}Ga_xO_7$  (Tokyo University of Science) ○Suzuki Yuma・Kitamura Naoto\*・Ishibasi Chiaki・Idemoto Yasushi
- 2C26 Synthesis of  $TiNb_{2-x}Ta_xO_7$  and the effect of Ti/Nb(Ta) occupancy on charge-discharge characteristics (Shinshu University) ○IMAI Shun・NAGAMINE Masayuki・ZETTSU Nobuyuki\*
- 2C27 Effect of Nanosheet Introduction on Cycling Characteristics of Porous Nanosilicon Electrodes with Low Elasticity SW-/MW-CNT Binders (Shinshu University) ○NAKATA Yudai・NAGAMINE Masayuki・Zettsu Nobuyuki\*

## ■■September 07 (Thu) (Room D) ■■

### 18. Advanced science of engineering ceramics -New development of structural and interfacial control and analytical techniques-

#### 計測・シミュレーション

(13:20) (Session Chairs: 宮崎 広行)

- 2D14 ★ Application example of the latest optical microscope system (NIKON SOLUTIONS CO.,LTD) ○Ogura Tadayoshi

(14:00) Break

(14:20) (Session Chairs: 井田 駿太郎)

- 2D17 3D Visualization of  $Si_3N_4$  microstructure using X-ray computed tomography (Proterial,Ltd) ○FUJII Masashi・IMAMURA hisayuki・MATSUMOTO Hironari・SHIMADA Takeshi・(Tohoku University) NAKAMURA Tetsuya・(Japan Synchrotron Radiation Research Institute) YASUTAKE Masanori・UESUGI Kentaro
- 2D18 Analysis of chemical bonding-state and thermal conductivity in silicon nitride by far-infrared reflectivity (Proterial LTD) ○SHIMADA Takeshi・IMAMURA Hisayuki・FUJII Masashi・MATSUMOTO Hironari

(15:00) (Session Chairs: 垣澤 英樹)

- 2D19 Experimental evaluation of toughness and cleavage fracture of B1-type  $(Mo, Ti)C_x$  (Tohoku University) ○IDA Shuntaro・YONEMURA Kotaro・NAN Xi・SEKIDO Nobuaki・(National Institute for Materials Science) NAKAGAWA Eri・OOMURA Takahito・(Tohoku University) YOSHIMI Kyosuke
- 2D20 Effect of off-stoichiometry on elastic moduli of B1-type  $TiX_x$  (Tohoku University) ○MATSUURA HIROMU・HOSHIZAKI KOTARO・IDA SHUNTARO\*・YOSHIMI KYOSUKE\*

(15:40) Break

#### コーティング・薄膜

(16:00) (Session Chairs: 勝 祐介)

- 2D22 ★ Development and prospect of Vacuum Coating Equipment and Coating (KOBE STEEL, LTD.) ○KUJIME Susumu
- 2D24 Investigation of the deposition behavior of the yttria-stabilized zirconia coating deposited by aerosol deposition method based on the strain energy (Yokohama National University) FURUYA Yuki・○HASEGAWA Makoto\*
- 2D25 Preparation and microstructural observations of chemically vapor deposited alumina-aluminum garnet composite films (Yokohama National University) ○ITO Akihiko\*・MITSUHASHI Yuri・MATSUMOTO Shogen

#### 接合・界面

(17:20) (Session Chairs: 伊藤 暁彦)

- 2D26 Evaluation method for fracture behavior at the interface between titanium nitride and silicon nitride using microcantilever beam specimens (Proterial, Ltd.) ○TAKANO Shun・SHIMADA Kei・NOGAWA Takashi・(Yokohama National Univ.) TATAMI Junichi
- 2D27 Evaluation of Ti/ $Si_3N_4$  interface under solid state reactions (Proterial・Tokyo Institute of Technology) ○nogawa takashi・(Proterial) Takano Shun・(Tokyo Institute of Technology) Isobe Toshihiro・Nakajima Akira

## ■■September 07 (Thu) (Room E) ■■

### 24. Crystal Science - New development of crystal growth technology and materials research -

(9:40) (Session Chairs: 黒澤 俊介)

- 2E03 ★ Float zone growth of single crystals for optical application (Hokkaido University) ○HIGUCHI Mikio

(10:20) Break

(10:40) (Session Chairs: 綿打 敏司)

- 2E06 ★ Growth of functional oxide single crystals by TSFZ method (University of Yamanashi) ○TANAKA Isao

(11:20) (Session Chairs: 黒澤 俊介)

- 2E08 総合討論

### 23. Measurement and Visualization Technology for Trans-scale Analysis and Process Informatics of Ceramics

#### プロセス中の可視化 I

(13:20) (Session Chairs: 田中 諭)

- 2E14 ★ A challenge to clarify the mechanism of ceramics manufacturing processes by developing the visualization methods (National Institute of Advanced Industrial Science and Technology) ○OKAZAKI Toshiya
- 2E16 Effect of internal structural change of alumina slurry with increasing temperature on rheological properties — approach using an environmentally controlled OCT-rheometer composite system— (Yokohama National University) ○Nakamura Miu・Tatami Junichi\*・Iijima Motoyuki
- 2E17 Rheological dynamics for crack initiation drying water-based slurries (National Institute of Advanced Industrial Science and Technology) ○NAKAJIMA Hideaki・MATSUMOTO Naoyuki・OGURA Toshihiko・KONDO Naoki・MIMURA Ken-ichi・OKAZAKI Toshiya

#### 先端計測 I

(14:40) (Session Chairs: 中山 忠親)



- 2E18 ★ Fracture of nano-sized SrTiO<sub>3</sub> initiated from a single dislocation and its mechanical criteria (Kyoto University) ○SUMIGAWA Takashi・SHIMADA Takahiro
- 2E20 Direct observations of dislocation climb in SrTiO<sub>3</sub> by in situ STEM loading experiment (The University of Tokyo) ○TOCHIGI Eita・Sato Takaaki・Cao Minjian・(The University of Tokyo・JFCC) Shibata Naoya・Ikuhara Yuichi
- 2E21 Mechanical properties in mesoscale of single crystal and polycrystalline 8YSZ measured using microcantilever beam specimens (Yokohama National University) ○MURAMOTO Mayuko・TATAMI Junichi\*・OHJI Tatsuki・IJIMA Motoyuki・(Kanagawa Institute of Industrial Science and Technology) TAKAHASHI Takuma・YAHAGI Tsukaho・(ToyoHashi University of Technology) NAKONO Hiromi

**(16:00) Break**

**先端計測Ⅱ**

**(16:20) (Session Chiars: 打越 哲郎)**

- 2E23 Changes in mesoscale mechanical properties near the surface of Y-TZP progressed by short-time hydrothermal treatment (Kanagawa Institute of Industrial Science and Technology・Yokohama National University) ○TAKAHASHI Takuma・(Yokohama National University) TATAMI Junichi
- 2E24 Interlaboratory testing for standardization of evaluation of mechanical properties of ceramics in mesoscale (Yokohama National University) ○TATAMI Junichi・(Kanagawa Institute of Industrial Science and Technology) TAKAHASHI Takumi・(National Institute of Advanced Industrial Science and Technology) SHINODA Kentaro・NAGOSHI Takashi
- 2E25 Evaluation of viscoelasticity near the surface of dried silica slurry by dynamic nanoindentation (Yokohama National University) ○Kuroda Hiromasa・Tatami Junichi\*・Iijima Motoyuki・(Kanagawa Institute of Industrial Science and Technology) Takahashi Takuma
- 2E26 Granules Plastic Deformation Simulation in Powder Compression Process (Yokohama National University) ○LYU Xuelong・Mishima Shigemasa・Matsui Kazumi・Yamada Takahiro

**総合討論**

**(17:40) (Session Chiars: 多々見 純一)**

- 2E27 総合討論

**■■September 07 (Thu) (Room F) ■■**

**17. Advanced Structure Science and Analytical Techniques**

**(9:00) (Session Chiars: 籠宮 功)**

- 2F01 ★ Study of functional interfaces by operando X-ray spectroscopy (the University of Tokyo) ○MATSUDA Iwao
- 2F03 Direct evaluation of effective mass of SnS-SnSe alloyed semiconductors by angle-resolved photoemission spectroscopy (Tohoku University) ○SUZUKI Issei・Lin Zexin・(Tohoku University・Kyoto University) Kawanishi Sakiko・(Institute for Molecular Science, UVSOR) Tanaka Kiyohisa・(Kyoto University) Nose Yoshitaro・(Tohoku University) Omata Takahisa・(Osaka University) Tanak Shin-ichiro
- 2F04 Polyhedral structural analysis in framework-type oxides by pre-edge peaks in XAFS spectra (Tohoku University) ○SATO Kazuki・NINOMIYA Kakeru・NISHIBORI Maiko\*

**(10:20) Break**

- 2F06 Crystal structure analysis of Ca-Al layered double hydroxide U-phase (Nagoya Institute of Technology) ○URUSHIHARA Daisuke・ASAKA Toru・HARADA Maho・KONDO Sayaka・NAKAYAMA Masanobu・(Taisei Corporation) OGINO Masataka・OWAKI Eiji・(Nagoya Institute of Technology) FUKUDA Koichiro

**(11:00) (Session Chiars: 小川 貴史)**

- 2F07 Some measurements using a laboratory-based anomalous scattering X-ray diffractometer (Tohoku University) ○Simura Rayko・Yamane Hisanori
- 2F08 Direct observation of thermally induced martensitic transformation in yttria-stabilized zirconia (The University of Tokyo) ○SHIBAGUCHI Hiromu・KONDO Shun・BIN Feng・(The University of Tokyo・Japan Fine Ceramics Center) IKUHARA Yuichi\*・SHIBATA Naoya
- 2F09 Crystal structure and magnetism of a novel magnetic cobalt oxide with a pyramid-shaped CoO<sub>5</sub> pentahedron (Nagoya Institute of Technology) ○MARUYAMA Masato・URUSHIHARA Daisuke・ASAKA Toru\*・FUKUDA Koichiro

**■■September 07 (Thu) (Room G) ■■**

**22. Frontier of next generation environmental ceramic materials**

**触媒**

**(9:00) (Session Chiars: 藤村 卓也)**

- 2G01 Liquid-phase Oxidation of bisphenol A over Zirconium-Tin Oxide Based Catalysts (Osaka University) ○Maeda Okiya・Nunotani Naoyoshi・Imanaka Nobuhito\*
- 2G02 Synthesis and Characterization of Cyclodextrin-Based Metal-Organic Framework (Kumamoto University) ○TOMIYOSHI Karina・NODA Shogo・Tsuchida Masayuki・NAGAI Anna\*・MATSUDA Motohide\*
- 2G03 Reconsideration of preparation method for Hollandite-type K<sub>x</sub>Ga<sub>x</sub>Sn<sub>8-x</sub>O<sub>16</sub> fine particles and its catalytic properties (Tokyo University of Science) ○SUZUKI Takahito・AIMI Akihisa\*・FUJIMOTO Kenjiro\*
- 2G04 Effect of preparation condition for Ni supported on porous ceramics on dry reforming reaction (Kagoshima Univ.) ○SAMESHIMA Soichiro・Satoyama Hayataka・Wakamatsu Yori-hisa・Setoyama Shiki・Shimonosono Taro・(AIST) Shibusaki Yasuo

**(10:20) Break**

**(10:40) (Session Chiars: 亀島 欣一)**

- 2G06 Effect of adding pH buffer materials on hydrogen generation rate for ammonia borane hydrolysis reaction (Sojo University) ○INOKAWA Hitoshi・TAKATA Hiroki

**光触媒**

**(11:00) (Session Chiars: 亀島 欣一)**

- 2G07 Synthesis of  $K_{0.5}Na_{0.5}NbO_3$  by hydrothermal synthesis and its dye degradation activity (Tokyo University of Science) ○KATSUMATA Ken-ichi·FUKUNAGA Tomotaka·MACHIDA Shingo·MAEDA Kei·YASUMORI Atsuo
- 2G08 Photoreduction of copper ion under sulfuric acid condition in the presence of silica-surfactant hybrid and titania (Tokyo University of Science·TUS SSI·WaTUS) ○MACHIDA Shingo·(Tokyo Institute of Technology) KATO Reo·(Tokyo University of Science·TUS SSI·WaTUS) KATSUAMTA Ken-ichi·(Tokyo University of Science) YASUMORI Atsuo
- 2G09 Synthesis and antibacterial/antiviral activities of  $Zn_2SnO_4$  and  $Y_2Sn_2O_7$  (Tokyo Institute of Technology) ○NAKANE Riku·KIRIBAYASHI Ryuju·(Kanagawa Institute of Industrial Science and Technology) SUNADA Kayano·(Tokyo Institute of Technology) ISOBE Toshihiro·MOCHIZUKI Yasuhide·(Kanagawa Institute of Industrial Science and Technology) NAGAI Takeshi·ISHIGURO Hitoshi·(Tokyo Institute of Technology) NAKAJIMA Akira\*

### 資源循環

#### (13:20) (Session Chairs: 柳田 さやか)

- 2G14 ★ Recovery of carbon-free lime from small content of alkaline in wastewater (Toyama KOSEN) ○Tafu Masamoto

#### (14:00) Break

- 2G17 Bloating mechanism of ceramics made from incinerated sewage sludge ash and pork bone powder (Kyoto Institute of Technology) ○TAKEUCHI Nobuyuki·ANDO Katsunori
- 2G18 Development of next-generation cement-free refractories (Nagoya Institute of Technology) ○KAWAGUCHI Ryosuke·YAMAGUCHI Keitaro·(TOWA REFRACTORY ENGINEERING CO., LTD) MORIGUCHI Keisuke·(Nagoya Institute of Technology) HASHIMOTO Shinobu\*

#### (15:00) Break

### 光触媒・エネルギー変換

#### (15:20) (Session Chairs: 勝又 健一)

- 2G20 ★ Artificial Photosynthesis by Heterogenous Photocatalysts -Photocatalytic Reduction of  $CO_2$  by  $H_2O$  as an Electron Donor (Kyoto University) ○TERAMURA Kentaro
- 2G22 Nanostructure and property of  $SrTiO_3:Al,Cr$ -modified  $TiO_2$  nanotube array photoanode (Toyohashi University of Technology) ○HAMAZAKI Shihō·INOUE Kazuki·MATSUDA Atsunori·KAWAMURA Go\*
- 2G23 Performance improvement of  $TiO_2$  nanotube array by  $Bi_2Se_3/Au$  co-deposition (Toyohashi university of technology) ○INOUE kazuki·HAMAZAKI Shihō·ABOUELELA Marwa·MATSUDA Atsunori·KAWAMURA Go\*

#### (16:40) Break

#### (17:00) (Session Chairs: 川井 貴裕)

- 2G25 Top-down and bottom-up preparation of oxygen-deficient titania (Tokyo Metropolitan Industrial Technology Research Institute) ○SOMEKAWA Shoichi·YANAGIDA Sayaka·TACHIBANA Naoki·(Keio University) IMAI Hiroaki·(Photogen Co., Ltd) NAKAZAWA Shigeru
- 2G26 Mechanochemical synthesis of multi-functional  $MoO_x$ /carbon photocatalyst (Nagoya Institute of Technology) ○KATO Kunihiko·Xin Yunzi·Shirai Takashi
- 2G27 Synthesis of hydrophilic polymer/ $CuS$  free-standing films exhibiting solar water evaporation (Osaka Metropolitan University) ○ONISHI Kazuki·Tokudome Yasukaki\*·Murata Hidenobu·Nkahira Atsushi

## ■ ■ September 07 (Thu) (Room H) ■ ■

### 12. Hyper-Ordered Structure Science

#### (9:00) (Session Chairs: 山田 明寛)

- 2H01 Effect of synthesis conditions for structure and physical properties of  $SiO_2$  glass in hot compression (Tokyo University of Science·National Institute for Materials Science) ○SATO Shuya·(National Institute for Materials Science) MIYAKAWA Masashi·TANIGUCHI Takashi·(Kyoto University·National Institute for Materials Science) ONODERA Yohei·(Shimane University) OHARA Koji·(High Energy Accelerator Research Organization) IKEDA Kazutaka·(Tokyo University of Science·National Institute for Materials Science) KITAMURA Naoto\*·(National Institute for Materials Science·Tokyo University of Science) KOHARA Shinji\*
- 2H02 Synthesis of amorphous alumina using precipitation method (Kogakuin University) ○Okuno Rei·(Kyoto University) Onodera Youhei·(National Institute for Materials Science) Kohara Shinji·(JEOL) Yazawa Koji·(Kogakuin University) Okura Toshinori·Hashimoto Hideki\*
- 2H03 Mechanical properties of high-entropy  $Al_2O_3$ -rich glasses (Hirosaki University) ○TAKAHASHI Eriya·(Kyoto University) MASUNO Atsunobu\*
- 2H04 Structural and physical properties of  $R_2O_3$ - $Ga_2O_3$ - $Al_2O_3$  glasses (Hirosaki University) ○HATANNO Shohei·(Kyoto University) MASUNO Atsunobu\*·(The University of Tokyo) INOUE Hiroyuki·YANABA Yutaka

#### (10:20) (Session Chairs: 北村 尚斗)

- 2H05 Heterogeneous structure and its thermal characteristics of ultrastable phenolphthalein glass obtained by physical vapor deposition (Kyoto Institute of Technology) ○Tatsumi Soichi·Yao Haruhiko·Saruyama Yasuo
- 2H06 Local Structure Analysis of Li Ion Conducting Solid Electrolytes by Quantum Beam (Nagoya Institute of Technology) ○YAMAZAKI Shunya·KIMURA Kouji·HAYASHI Kouichi·(Tokyo University of Science) KITAMURA Naoto·(Saitama University) TAKEDA Hiroaki·(Hiroshima City University) HAPPO Naohisa
- 2H07 ◆ Observation of hyper-ordered structure by atomic-resolution holography (Nagoya Institute of Technology) ○HAYASHI Koichi

### International session

#### (13:20) (Session Chairs: 小原 真司)

- 2H14 ★ Correct Way to Calculate Glass Packing Fraction and Dissociation Energy for Young's Modulus Prediction (Corning Inc.) ○SHI Ying
- 2H16 ★ Investigation of the structure and properties of fragile oxide liquids and glasses using containerless methods (Materials Development, Inc.) ○WEBER Rick

#### (14:40) Break

#### (15:00) (Session Chairs: 小野寺 陽平)

- 2H19 ★ Structure of alumina glass synthesized through electrochemical oxidation (Kogakuin University) ○HASHIMOTO Hideki

- 2H21 ★ Atomic structure and dynamics of glassy and liquid chalcogenide functional materials (University of Littoral) ○BYCHKOV Eugene  
**(16:20) Break**  
 2H24 ★ Oxide Glasses under Pressure (University of Bath) ○ZEIDLER Anita

## ■ September 07 (Thu) (Room J) ■

### 01. informatics applications in ceramic research

#### International session / ハイスループット

##### (9:20) (Session Chairs: 藤本 憲次郎)

- 2J02 ★ Autonomous Combinatorial Experimentation for Streamlined Materials Discovery. (University of Maryland) ○Takeuchi Ichiro

#### International session / 自律実験

##### (10:00) (Session Chairs: 藤本 憲次郎)

- 2J04 ★ Powder Process Informatics - ROPES: Robotic Objective Process Exploration System (The University of Tokyo) ○NAGATO Keisuke

##### (10:30) Break

#### International session / 自動実験

##### (10:40) (Session Chairs: 奥山 勇治)

- 2J06 ★ Development of functional ceramics through combinatorial synthesis, high throughput screening and machine learning. (University of Southampton) ○Hayden Brian

#### International session / 熱電変換

##### (11:20) (Session Chairs: 奥山 勇治)

- 2J08 ★ Search for new thermoelectric materials from crystal structures and Starrydata literature database (National Institute for Materials Science) ○Katsura Yukari

##### (11:50) Closing

### 04. Random Materials –Function and Physical Property Correlated with the Structure-

#### 基調講演

##### (13:20) (Session Chairs: 高橋 儀宏)

- 2J14 ◆ Glass formation, structure, and optical functionality in non-oxide systems (Kyoto Institute of Technology) ○KADONO Kohei

##### (14:20) Break

#### 光学応用

##### (14:40) (Session Chairs: 本間 剛)

- 2J18 ★ Introduction of Authenticity Verification Methods for Ceramic Products (Kogakuin University) ○FUJIKAWA Masaki (National Defense Academy) NANAI Yasushi  
 2J20 Development of cap lids with sealing material for UV-LED with high extraction efficiency (Nippon Electric Glass Co., Ltd.)  
 ○KATO Akihiro・MASHIMA Ryota

##### (15:40) Break

#### ガラス表面

##### (16:00) (Session Chairs: 本間 剛)

- 2J22 Formation of hydration layer on glass surface by electric double layer at fine-bubble interface during CMP process (Shizuoka University) ○MOCHIZUKI Sota・SUDA Seichi\*

##### (16:20) (Session Chairs: 寺門 信明)

- 2J23 The Effect of Phosphate in the 45S5 Bioactive Ultrathin Glass Film on the Room-Temperature Bonding Strength to Titanium Metal (Tokyo Institute of Technology) ○Kozaki Tomohiro・Kishi Tetsuo\*・Tomita Kana\*・Yano Tetsuji\*

#### ソルゲル

##### (16:40) (Session Chairs: 寺門 信明)

- 2J24 Development of silsesquioxane-based organic-inorganic hybrid liquids and thermosetting resins by cosolvent-free method (Tokyo Metropolitan University) ○YOSHIDA Takuma・ISHIJIMA Masanao・KAJIHARA Koichi\* (AGC Inc.) YOSHIDA Satoshi・KOIKE Akio  
 2J25 Impact of silver nanoparticles on fracture toughness in SiO<sub>2</sub> glass coating. (Osaka Univ.) ○Momma Hiroya (Osaka Univ.)・National Institute of Advanced Industrial Science and Technology Shinozaki Kenji\*

## ■ September 07 (Thu) (Room K) ■

### 21. Element-Block Materials: Current Status and Future Prospects

#### 高分子元素ブロック

##### (9:00) (Session Chairs: 中 建介)

- 2K01 ★ Synthesis and Applications of Functional Materials by Post-element-transformation Technique (Tokyo Institute of Technology)  
 ○TOMITA Ikuyoshi  
 2K03 Fabrication of porous phenolic resins by crosslinking linear polymer chains (Nagoya University) ○Hiei Chika・Takano Atsushi・Nakanishi Kazuki\*・Hasegawa George\*  
 2K04 Pore control of porous cross-linked polymer resin with different urethane blocks (Nagoya University) ○Ou Moe・Nakanishi Kazuki\*・Hasegawa George\*

#### 無機ナノ元素ブロック

##### (10:20) (Session Chairs: 瀬川 浩代)

- 2K05 ★ Preparation of organic-inorganic hybrid materials using zirconia nanoparticle dispersions (Kyoto Institute of Technology)  
○MATSUKAWA Kimihiro
- 2K07 Structural control and mechanical characterization of fluorapatite nanorod arrays (Keio University) ○TIAN Xinyu·WATANABE Hiroto·OAKI Yuya·IMAI Hiroaki\*

### ナノシート

#### (11:20) (Session Chairs: 長谷川 丈二)

- 2K08 Designed synthesis and assembly of single-crystalline ceria nanosheets and the investigation of their ionic conductivity (Nagoya University) ○TAKEUCHI Nozomi·YAMAMOTO Eisuke\*·KOBAYASHI Makoto·OSADA Minoru\*
- 2K09 Preparation of Janus nanosheets with one side modified with poly(methyl methacrylate) chains and their evaluation (Waseda University) ○HATORI Akiho·(Waseda University) KAMIBE Takuma·(Waseda University) REGIS Guegan·(Institute for Materials Science) MA Renzhi·(Waseda University) SUGAHARA Yoshiyuki
- 2K10 Molecular layer engineering of amorphous silica nanosheets utilizing solid surfactant templates (Nagoya University) ○Takezaki Yuma·YAMAMOTO Eisuke\*·KOBAYASHI Makoto·OSADA Minoru\*

#### (12:20) (Session Chairs: 菅原 義之)

- 2K11 総合討論

## ■ ■ September 07 (Thu) (Room L) ■ ■

### 09. Novel ceramic technology based on nanocrystals

#### (9:20) (Session Chairs: 板坂 浩樹)

- 2L02 ★ Liquid phase synthesis of ceramic nanomaterials and their applications (National Institute of Advanced Industrial Science and Technology (AIST)) ○MASUDA Yoshitake
- 2L04 Synthesis of Multi-Component Oxide Nanoparticles and Their Applications (Osaka University) ○LI Fei·ABE Hiroya
- 2L05 Role of capping agents for dimensional and oriented control of Cu<sub>2</sub>O nanowire mesocrystals in hydrothermal synthesis (Nagoya University) ○SUZUKI Kazumasa·(The University of Shiga Prefecture) HOSHISHIMA Sota·MIYAMURA Hiroshi·NAKAMURA Ryusuke

#### (10:40) Break

#### (11:00) (Session Chairs: 上野 慎太郎)

- 2L07 Effect of CuO loading on photocatalytic activity of ZrO<sub>2</sub>/WO<sub>3</sub> nanoparticles (Gunma University) ○SATO Kazuyoshi·IWASA Mari·KANNARI Naokatsu·(Osaka University) ABE Hiroya
- 2L08 Synthesis of nanoporous lithium niobates and their piezoelectric catalytic activities (Waseda University) ○MATSUNO Takamichi·HATTORI Tetsuya·WADA Hiroaki·KURODA Kazuyuki·SHIMOJIMA Atsushi

## ■ ■ September 07 (Thu) (Room M) ■ ■

### 19. Green Processing – Innovation of Functional Ceramics for Realization of the SDGs

### PLD

#### (9:00) (Session Chairs: 久保田 雄太)

- 2M01 Deposition of TiO<sub>2</sub>-VO<sub>2</sub> thin film by PLD method and change of metal-insulator transition temperature (Shizuoka University) ○kroda tomoki·totsuka souta·kawaguchi takahiko·sakamoto naonori·wakiya naoki\*
- 2M02 Preparation of Mn<sub>3</sub>(Ge,Mn)N epitaxial thin films on various substrates using PLD (Shizuoka University) ○SUGIURA Satoki·SUGAHARA Yuya·KAWAGUCHI Takahiko\*·SAKAMOTO Naonori·WAKIYA Naoki

### バイオ

#### (9:40) (Session Chairs: 久保田 雄太)

- 2M03 Structural analysis of needle-shaped calcium oxalate monohydrate in leaf of *Vitis vinifera* and rhizophore of *Dioscorea polystachya* (Keio University) ○TANAKA Ryosuke·WATANABE Hiroto·OAKI Yuya·IMAI Hiroaki\*
- 2M04 Heat generation properties in AC magnetic field for Y<sub>3</sub>Fe<sub>5</sub>O<sub>12</sub> fine powder synthesized by coprecipitation method at low temperature (Ehime University) ○UTSUNOMIYA Syuto·ITAGAKI Yoshiteru·(Niihama Natl. Coll. of Technology) HIRAZAWA Hideyuki·(Ehime University) AONO Hiromichi\*

#### (10:20) Break

#### (10:40) (Session Chairs: 川口 昂彦)

- 2M06 Structural analysis of baosilicas on bamboo culm (Keio university) ○KAZAMA Makoto·WATANABE Hiroto·(Tokyo university of agriculture) HASEKURA Chikako·(Keio university) OAKI Yuya·IMAI Hiroaki\*
- 2M07 Structural analysis of the silica skeleton of *Phaeodaria (Aulosphaera sp.)* (Keio University) ○YAMAGUCHI Momoka·(Shimane University ERC) NAKAMURA Yasuhide·(JAMSTEC) KIMOTO Katsunori·(MMCER Yokohama National University) Shimode Shinji·(Keio University) OAKI Yuya\*·Imai Hiroaki\*
- 2M08 ★ DNA-Programmable Nanoparticle Crystallization and Structural Analysis by Small angle X-ray Scattering (Nagoya University) ○TAGAWA Miho·ZHANG LiDong·SUMI Hayato·HARADA Shunta·UJIHARA Toru·(JASRI) OHTA Noboru·SEKIGUCHI Hiroshi

### プロセス

#### (16:40) (Session Chairs: 坂元 尚紀)

- 2M24 Electrochemical properties of nano-coated cathode particles with different coating layer structures (Kitami Institute of Technology) ○OHNO Tomoya·HIRAI Shigeto·JEEVAN Kumar·(Consortium for Lithium Ion Battery Technology and Evaluation Center) MORINO Yusuke·KANADA Satoshi·SIOTA Akihiro·BON Song Kai
- 2M25 Epitaxial growth and thickness dependence of crystal structure in undoped and Si-doped WO<sub>3</sub> films (National Institute for Materials Science) ○ADACHI Yutaka

- 2M26 Fabrication and Properties of Barium Titanate by Low-temperature Sintering around Room Temperature (National Institute of Advanced Industrial Science and Technology) ○Nakayama Rei·Yamaguchi Yuki·Sumi Hirofumi
- 2M27 Reconstruction of electrocoagulation (EC) system by nanosecond pulse and development of new water reclamation method (Nagaoka University of Technology) ○MARTINEZ SANCHEZ ALEJANDRO ISIDRO·TAKIMOTO YUYA·FURUNO HIDETO·Pham Van Long·Nakayama Tadachika\*

## ■ ■ September 07 (Thu) (Room N) ■ ■

### 11. Evolution of ceramic powder processing: toward the harmony with DX based society

#### 評価技術

#### (10:00) (Session Chairs: 小澤 隆弘)

- 2N04 ★ Quantification of particle interfacial properties and prediction of suitable mixed solvent ratios using Pulse NMR and the Hansen solubility parameter database (Mageleka Japan Co., Ltd.·Tohoku University) ○IKEDA Junko
- 2N06 Characterization of slurries for slip casting by using constant pressure filtration (Hosei University) ○MATSUMOTO Chie·MORI Takamasa\*·KITAMURA Kenta
- 2N07 The role of slurry dispersion and packing ability on wet shaping processes (Hosei University) ○MORI Takamasa·Kitamura Kenta

#### リサイクル技術

#### (11:20) (Session Chairs: 森 隆昌)

- 2N08 Collection of lithium carbonate nanoparticles using porous spheres and its application to cathode synthesis for Li-ion batteries (Osaka University) ○KOZAWA Takahiro
- 2N09 Design of interparticle crosslinks toward complete disassembling process of photo-cured silica green bodies (Yokohama National University) ○HIROSHIGE Yuki·TATAMI Junichi·IIZIMA Motoyuki\*

### 02. Hybrid materials and emergent chemical/physical properties

#### (13:20) (Session Chairs: 高見 剛)

- 2N14 ★ Materials design of ionic conductors based on multi-scale simulations from first principles (Kyushu University·Tokyo Institute of Technology) ○TADA Tomofumi
- 2N16 Synthesis of sorbitol - Zn-Al layered double hydroxide complex thin film and its transformation to ZnO thin film preparation with oriented crystallites (Chiba University) UEKAWA Naofumi·KOJIMA Takashi·○UEKAWA Naofumi

#### (14:20) (Session Chairs: 上川 直文)

- 2N17 Effects of the interface and MgB<sub>2</sub> content on the superconducting properties of Mg/MgO/MgB<sub>2</sub> fractal nanocomposites (Kobe University) ○NAKAAKI Iku·SAKURAI Takahiro·OHTA Hitoshi·(Osaka Metropolitan University) SETO Yusuke·(NIMS) OOI Shuuichi·TACHIKI Minoru·ARISAWA Shunichi·(Tokyo university) IKUHARA Yuichi·KONDO Shun·(Kobe University) UCHINO Takashi\*
- 2N18 Origin of high capacity of cathode material Ca<sub>0.8</sub>Sr<sub>0.2</sub>FeO<sub>2</sub>F<sub>x</sub> for all-solid-state fluoride-ion batteries (Gunma University) ○ANDO Tomoya·(Nagoya University) KUTANA Alex·ASAHI Ryoji·(Kyoto University) ABULIKEMU Aierxiding·SAKAGUCHI Yuki·PATTANATHUMMASID Chanachai·TAKAMI Tsuyoshi\*·(Japan Synchrotron Radiation Research Institute) TSUJI Naruki·(Gunma University) SUZUKI Kosuke·HOSHI Kazushi·(Kyoto University) WATANABE Toshiki·UCHIYAMA Tomoki·(Nara Women's University) YAMAMOTO Kentaro·(Gunma University) TAKAHASHI Manabu·(Kyoto University) UCHIMOTO Yoshiharu·(Gunma University) SAKURAI Hiroshi\*

#### (15:00) Break

#### (15:20) (Session Chairs: 原 光生)

- 2N20 ★ Material design using polymer-grafted inorganic particles (Tokyo Institute of Technology) ○TOKITA Masatoshi
- 2N22 Photodissolution-precipitation process by UV irradiation on complex between cerium oxide and sorbitol (Chiba University) ○GOTO Ryuhei·Suzuki Noriyuki·Kojima Takashi\*·Uekawa Naofumi\*
- 2N23 Orthogonal bi-directional orientation of internal filler in composites by AC electric field (Nagaoka University of Technology) ○SHEN Zhiming·SAITO Hiroyuki·MITA Wataru·FURUNO Hideto·(National Institute of Technology, Anan College) FUJIHARA Takeshi·(Nagaoka University of Technology) NAKAYAMA Tadachika\*

#### (16:40) (Session Chairs: 徳留 靖明)

- 2N24 Voltage hysteresis and electronic state of Li-rich cathode materials (Kyoto University) ○Aierxiding Abulikemu·(Gunma University) Ando Tomoya·(Kyoto University) Chanachai Pattanathummasid·(Japan Synchrotron Radiation Research Institute) Tsuji Naruki·(Gunma University) Suzuki Kosuke·Takahashi Manabu·(Kyoto University) Uchimoto Yoshiharu·(Gunma University) Sakurai Hiroshi·(Kyoto University) Takami Tsuyoshi\*
- 2N25 A mechanically asymmetric gel that shows functions against the increase of entropy (RIKEN) ○Ishida Yasuhiro

## ■ ■ September 07 (Thu) (Room Q) ■ ■

### 14. The frontier of dielectric materials II ~Creation of functional materials and their applications towards a sustainable society~

#### 分極処理

#### (9:00) (Session Chairs: 清水 荘雄)

- 2Q01 Pulse-poling and aging of (Ba,Ca)(Zr,Ti)O<sub>3</sub> ceramics (Nagoya Institute of Technology) ○NOZAKI Takumi·MARTIN Alexander·(Nagaoka University of Technology) NAKAYAMA Tadachika·(Nagoya Institute of Technology) KAKIMOTO Ken-ichi\*
- 2Q02 Characteristics and Microstructural Changes of Relaxor Piezoelectric Single Crystals by AC Poling (Shonan Institute of Technology) ○MAIWA Hiroshi·Xiang Yu·(GE Healthcare Wuxi) Sun Yiqin·(Toyama Prefectural University) Karaki Tomoaki·(Shonan Institute of Technology·North Carolina State University) Yamashita Yohachi

#### 構造制御

#### (9:40) (Session Chairs: 清水 荘雄)

- 2Q03 Manipulating Dielectric Temperature Stability of Bi<sub>2</sub>SiO<sub>5</sub>-based Ceramics by Ge substitution (Keio University) ○YASUMOTO Yoji· (Nagoya University) KUWANO Taro·TANIGUCHI Hiroki·(Keio University) FUJIHARA Shinobu·HAGIWARA Manabu\*
- 2Q04 ★ Controlling Coordination Octahedral Rotations for Functionalizing Layered Perovskites (Kyushu University) ○AKAMATSU Hirofumi

**(10:40) Break**

**計算・MI**

**(11:00) (Session Chiars: 寺西 貴志)**

- 2Q07 Polarization structure analysis of Nb-based perovskite oxides via electronic state calculation and machine learning (National Institute of Advanced Industrial Science and Technology) ○KITANAKA Yuuki·FUKUDA Masayuki·NAKAJIMA Tomohiko
- 2Q08 Soft-mode informatics of perovskite structured ferroelectrics (JFCC·Tokyo institute of technology) ○MORIWAKE Hiroki·(JFCC) SHITARA Kazuki·YOKOI Rie
- 2Q09 Theoretical calculations of Raman spectra of SrTi<sup>18</sup>O<sub>3</sub> (Japan Fine Ceramics Center) ○YOKOI Rie·(Japan Fine Ceramics Center·Tokyo Institute of Technology) MORIWAKE Hiroki·(Japan Fine Ceramics Center) SHITARA Kazuki·(Tokyo Institute of Technology) ITOH Mitsuru·(Hokkaido University) TAKESADA Masaki

**非 BT 系材料**

**(13:20) (Session Chiars: 安原 颯)**

- 2Q14 Synthesis of Ta<sup>5+</sup> ion substituted ZrO<sub>2</sub> and its polarity (Gakushuin University) ○MIMURA Takanori·(Japan Fine Ceramics Center) SHITARA Kazuki·YOKOI Rie·TAGUCHI Ayako·(Japan Fine Ceramics Center·Tokyo institute of technology) MORIWAKE Hiroki·(Gakushuin University) INAGUMA Yoshiyuki
- 2Q15 Instability of the in-plane residual stress of dielectric thin films in the ambient atmosphere (Kansai University) ○KOZUKA Hiromitsu·OHTA Yuma·NISHIMURA Yuki·KITANO Sosuke·MIYASHITA Yuto·UEDA Masato·MITA Itsuki
- 2Q16 ★ Application of new processes on the preparation of HfO<sub>2</sub> family ferroelectric thin film (Kyoto Institute of Technology) ○NODA Minoru·TANAKA Sho

**(14:40) Break**

**薄膜 (BT 系)**

**(15:00) (Session Chiars: 北中 佑樹)**

- 2Q19 Film thickness and composition dependency of crystal structure of epitaxial Ba(Zr,Ti)O<sub>3</sub> film deposited on MgO single crystal substrate (National Defense Academy) ○TAKAHASHI Ryo·EHARA Yoshitaka·HAMASAKI Yosuke·SAWAI Shinya·(Tokyo Institute of Technology) YASUI Shintaro·YASUOKA Shinnosuke·FUNAKUBO Hiroshi·(National Defense Academy) NISHIDA Ken\*
- 2Q20 Effect of oxygen partial pressure on dielectric properties of BaTiO<sub>3</sub> thin films with different crystallinity (Okayama University) ○MURAKAMI Taichi·(Institut National de la Recherche Scientifique) Loick Pichon·Joel Leblanc-Lavoie·(Okayama University) KONDO Shinya\*·TERANISHI Takashi·(Nagoya University) YAMADA Tomoaki·(Okayama University) KISHIMOTO Akira·(Institut National de la Recherche Scientifique) My Ali El Khakani
- 2Q21 Flexoelectric effect of (Ba,Sr)TiO<sub>3</sub> thin film fabricated on mica substrate (Tokyo Institute of Technology) ○HOSHINA Takuya·PENG Shicheng·YASUHARA Sou·TSURUMI Takaaki
- 2Q22 Evaluation of dielectric properties in a transferred BaTiO<sub>3</sub> single-crystal thin film. (Tokyo Institute of Technology) ○Yasuhara Sou·Kikuchi Taisei·Hoshina Takuya·Tsurumi Takaaki

**(16:20) Break**

**合成プロセス**

**(16:40) (Session Chiars: 阿満 三四郎)**

- 2Q24 Temperature dependences of the crystal structure and ferroelectric properties for RbNbO<sub>3</sub> (Shibura Institute of Technology) ○YAMAMOTO Ayako·MURASE Kimitashi·(Tohoku University) KAWAMATA Toru·SUGIYAMA Kazumasa·(Gakusyuin University) INAGUMA Yoshiyuki·(University of Tokyo) YAMAURA Junichi
- 2Q25 ★ Development of novel dielectrics via cold sintering (Kyocera corporation) ○SADA Takao·TSUJI Kosuke·FUJIOKA Yoshihiro·(Pennsylvania State University) RANDALL Clive

■■September 07 (Thu) (Room R) ■■

**10. Material Design and Processing Design**

**ソノプロセス**

**(9:00) (Session Chiars: 久保 正樹)**

- 2R01 ★ Sonochemical Reduction Synthesis of Metal Nanoparticles: Mechanism of Reduction and Particle Growth (Osaka Metropolitan University) ○OKITSU Kenji
- 2R03 Investigation of Low Temperature Synthesis of Metal Nanoparticles by Ultrasound Irradiation of Metallocene (Tohoku University) ○TATSUYA Shishido·HAYASHI Yamato\*·HUKUSHIMA Jun·TAKIZAWA Hirotsugu
- 2R04 Sonofragmentation of Oriented copper foil (Tohoku University) ○EBATO Yusuke·HAYASHI Yamato\*·HUKUSHIMA Jun·TAKIZAWA Hirotsugu

**(10:20) Break**

- 2R06 Investigation of room temperature synthesis of  $\gamma$ -Ga<sub>2</sub>O<sub>3</sub>-based nanocomposites using sonochemical behavior of EGaInSn micro-droplets (Tohoku University) ○Yamanaka Toshiki·Hayashi Yamato\*·Fukushima Jun·Takizawa Hirotsugu
- 2R07 Exploration of the green process for the synthesis of ubiquitous nitride semiconductor ZnSiN<sub>2</sub> using ultrasound and urea (Tohoku University) ○ZUSHI Ren·HAYASHI Yamato\*·FUKUSHIMA Jun·TAKIZAWA Hirotsugu

**窒化物**

**(11:20) (Session Chiars: 久保 正樹)**

- 2R08 The Effect of Oxygen Partial Pressure in Heat Treatment Atmosphere on the Titanium Oxynitride Cathode Catalyst for Polymer Electrolyte Fuel Cells using Ammonia Nitridation (Osaka University) ○TAMAKI Yushi·SEINO Satoshi\*·UETAKE Yuta·(Yokohama National University) NAGAI Takaaki·MONDEN Ryuji·ISHIHARA Akimitsu·(Osaka University) NAKAGAWA Takashi\*

- 2R09 Development of Low-temperature Consolidation Method for Silicon Nitride via Cold Sintering Process (Osaka University)  
 ◯minehira masaya·SEO Yeongjun·CHO Sung Hun·GOTO Tomoyo·KONDO Yoshifumi·SEKINO Tohru\*

**微構造制御**

**(13:20) (Session Chairs: 白井 孝)**

- 2R14 ★ Grain boundary control and improvement of mechanical properties in ceramics material design (Niterra Co., Ltd.) ◯MITSUOKA Takeshi
- 2R16 Functional Design and Synthesis using a Two-Step Sintering Method in a Fine-Grained Oxide Composite (National Institute for Materials Science) ◯HIRAGA Keijiro·Kim Byng-Nam·Morita Koji·Sakka Yoshio
- 2R17 Fabrication and adsorption property of silica-zeolite porous structure (Kyushu University) ◯NAKAMURA Rintaro·INADA Miki\*

**(14:40) Break**

**プロセス・電子特性**

**(15:00) (Session Chairs: 加藤 邦彦)**

- 2R19 ★ Approaches to providing reduction resistance to BaTiO<sub>3</sub>-based lead-free piezoelectric ceramics and improving their properties (Chubu University) ◯SAKAMOTO Wataru
- 2R21 Optical property of c-axis oriented lanthanum silicate fabricated by magnetic field (National Institute for Materials Science) ◯SUZUKI Tohru·(Shibaura Institute of Technology) Kawamura Akihiro·(National Institute for Materials Science) Kobayashi Kiyoshi·(Shibaura Institute of Technology) Kiyono Hajime
- 2R22 Effects of preparation conditions on the structure and properties of turbostratic boron nitride (Kobe University) ◯MAEDA Futa·UCHINO Takashi\*

**(16:20) Break**

**合成プロセス**

**(16:40) (Session Chairs: 小島 隆)**

- 2R24 ★ Low-temperature process using the amorphous oxides raw materials for synthesis and sintering of perovskite oxides (National Institute of Advanced Industrial Science and Technology (AIST)) ◯YAMAGUCHI Yuki
- 2R26 Investigation of the effect of dispersants on the process of structure formation of particles during solvent evaporation using discrete element method simulation (Tohoku University) ◯SEINO Motoki·KUBO Masaki\*·(Japan Fine Ceramics Center) KIMURA Teiichi·TERASAKA Sota·(PIA) KOIKE Osamu·TATSUMI Rei
- 2R27 Molecular dynamics analysis of affinity and interfacial thermal resistance between surface-modified inorganic solid and polymer (Tohoku University) ◯SAITO Takamasa·KUBO Masaki\*·TSUKADA Takao·SHOJI Eita·KIKUGAWA Gota·SURBLYS Donatas

**■■September 07 (Thu) (Room S) ■■**

**25. Materials Innovation on Thermal Energy Conversion and Harnessing IV**

**熱電薄膜デバイス**

**(9:40) (Session Chairs: 大瀧 倫卓)**

- 2S03 Enhancing electron mobility of embedded-ZnO nanowire structures with controlled electronic states and their device applications (Osaka University) ◯KOZUKI Seiya·KOMATSUBARA Yuki·ISHIBE Takafumi·NAKAMURA Yoshiaki\*·(Nara Institute of Science and Technology) IWAMOTO Kosuke·UENUMA Mutsunori·URAOKA Yukiharu
- 2S04 Band structure engineering and thermoelectric properties of copper nitride semiconductor by Pd0 substitution (National Institute of Advanced Industrial Science and Technology) ◯MATSUZAKI Kosuke·(Tokyo Institute of Technology) Katase Takayoshi·(Tohoku University) Kumagai Yu·(Tokyo Institute of Technology) Tsunoda Naoki·Harada Kou·Oba Fumiyasu·Hosono Hideo

**(10:20) Break**

**(10:40) (Session Chairs: 片瀬 貴義)**

- 2S06 Refined Measurement of the Contact Resistance with Improved Transmittance Line Model for the Thermoelectric Generations Devices (Kyoto Institute of Technology) ◯AKIHIRO Katsura·MAKI Tsurumoto·TOHRU Sugahara\*
- 2S07 ☆ Flexible Thermoelectric Generation Device for Autonomous Distributed Power Supply (KYOTO INSTITUTE OF TECHNOLOGY) ◯SUGAHARA Tohru

**熱電材料**

**(13:20) (Session Chairs: 吉矢 真人)**

- 2S14 ★ Search for thermoelectric materials by machine learning of large-scale experimental data and new ion-control technique (National Institute for Materials Sciences·Tsukuba University·RIKEN) ◯KATSURA Yukari
- 2S16 Strong phonon scattering and thermoelectric property enhancement of SrTiO<sub>3</sub> by hydride anion substitution (MDX Materials Research Center for Element Strategy, International Research Frontiers Initiative, Tokyo Institute of Technology) ◯HE XINYI·Nomoto Seiya·Katase Takayoshi\*·(Research Center for Magnetic and Spintronic Materials, National Institute for Materials Science) Tadano Terumasa·(MDX Materials Research Center for Element Strategy, International Research Frontiers Initiative, Tokyo Institute of Technology) Kamiya Toshio\*
- 2S17 Ultra-low lattice thermal conductivity of SnSb<sub>2</sub>Se<sub>4</sub> with 1-dimentional Sn-Se chains (Tokyo Institute of Technology) ◯Yang Zan·Li Linwei·He Xinyi·Katase Takayoshi\*·Kamiya Toshio\*

**(14:40) Break**

**(15:00) (Session Chairs: 安井 伸太郎)**

- 2S19 Thermal conductivity change in layered oxide LiTMO<sub>2</sub> (TM = V, Cr, Co) with different electronic degrees of freedom (Tokyo Institute of Technology) ◯KITANI Suguru·OBATA Yuki·HASHIMOTO Kenta·KAWAJI Hitoshi
- 2S20 Thermoelectric properties of Zintl compounds containing rattling atoms in tunnel frameworks (Tohoku University) ◯YAMADA Takahiro·YAMANE Hisanori·(Osaka University) YOSHIYA Masato·(Kyoto University) TAKATSU Hiroshi·KAGEYAMA Hiroshi
- 2S21 Analysis of local structure and control of grain-boundary resistance in Nb-doped (La<sub>1/2</sub>K<sub>1/2</sub>)TiO<sub>3</sub> ceramics (Keio University) ◯Sakuraba Shugo·Fujihara Shinobu·Hagiwara Manabu\*
- 2S22 Thermoelectric Properties and Microstructures of SrTiO<sub>3</sub>/TiN Nanocomposites (Kyushu University) ◯OHTAKI Michitaka·NAGASAKI Seiha·SUEKUNI Koichiro

**(16:20) Break**

**(16:40) (Session Chiars: 大瀧 倫卓)**

- 2S24 Thermoelectric property enhancement of hydrogen substituted SrTiO<sub>3</sub> epitaxial films (Tokyo Institute of Technology) ○KATASE Takayoshi·KIMURA Masatoshi·He Xinyi·Kamiya Toshio
- 2S25 Thermoelectric characteristics in SrSi<sub>2</sub> consisting of two polymorphs (National Institute for Materials Science·Tokyo Institute of Technology) ○SHIMIZU Takao·(Tokyo Institute of Technology) Aoyama Kodai·(Tosoh Corporation) Kuramochi Hideto·Mesuda Masami·Akiike Ryo·(Tokyo Institute of Technology) Katase Takayoshi·Kimura Yoshisato·Funakubo Hiroshi

**総合討論****(17:20) (Session Chiars: 片瀬 貴義)**

- 2S26 総合討論

**■ September 07 (Thu) (Room T) ■****05. Photoceramics - Synthesis, Functions and Applications of Optical and Colorful Ceramics-****マンガン****(9:00) (Session Chiars: 増井 敏行)**

- 2T01 Synthesis and characterization of Ca<sub>2</sub>MnO<sub>4</sub>-based colored films (Nagoya Institute of Technology) ○OKA Ryohei·HAYAKAWA Tomokatsu
- 2T02 Synthesis and red fluorescence properties of Mn-doped La-Na-Te oxide solid-solutions with double-perovskite structure (Utsunomiya University) ○HAYASAKA Riku·TEZUKA Keitaro\*·SHAN Yue-jin\*
- 2T03 Thermochromic properties in high pressure phase of RIn<sub>1-x</sub>Mn<sub>x</sub>O<sub>3</sub> (Osaka Metropolitan University) ○Oshita Masaya·Kimutra Kenta\*·Murata Hidenobu·(The University of Tokyo) Oda-Bayliss Isaac·Wang Wencong·Yagi Shunsuke
- 2T04 Synthesis and luminescence properties of Mn-doped CaTa<sub>4</sub>O<sub>11</sub> (Niigata University) ○WATANABE Mizuki·KAMADA Saki·TODA Kenji

**(10:20) Break****光触媒****(10:40) (Session Chiars: 伊田 進太郎)**

- 2T06 ★ Construction of inorganic photocatalytic systems by using molecules (Tokyo Institute of Technology) ○MAEDA Kazuhiko
- 2T08 Soft chemical synthesis for phosocatalysts (Niigata University) ○TODA Kenji

**(11:40) (Session Chiars: 岡 亮平)**

- 2T09 Synthesis and photocatalytic activity of ZrNCl (Kumamoto University) ○IDA Shintaro·TOMATSU Satsuki·HATAKEYAMA Kazuto

**色材・発色****(13:20) (Session Chiars: 岡 亮平)**

- 2T14 ★ Development of Colloidal Array-Type Structurally Colored Materials as Environmentally-Benign Colorants (Hiroshima University) ○KATAGIRI Kiyofumi
- 2T16 Novel near-infrared reflective black inorganic pigment based on SrMnV<sub>2</sub>O<sub>7</sub> (Tottori University) ○MOCHIZUKI Satoru·YAMAGUCHI Kazuki·MORIMOTO Takuro·MASUI Toshiyuki\*
- 2T17 Enhanced color retention of Ag-nanoparticle LSPR-type EC devices by controlling SnO<sub>2</sub> electrode structure and electrolyte composition (Keio University) ○HATANO RYO·HAGIWARA MANABU·FUJIHARA SHINOBU\*

**(14:40) Break****合成プロセス****(15:00) (Session Chiars: 長谷川 拓哉)**

- 2T19 ★ Creation of photo responsive functional materials based on the solar spectrum (IMRAM, Tohoku University) ○YIN SHU
- 2T21 A new synthesis method of non-stoichiometric rare earth niobates using rubidium carbonate flux (Niigata University) ○TODA Kenji
- 2T22 Green Synthesis of rare-earth oxyfulfide nanophosphors and photoluminescence (National Institute for Materials Science) ○LI Ji-Guang·(National Institute for Materials Science) MORITA Kouji

**(16:20) Break****ナノシート・ナノ蛍光体****(16:40) (Session Chiars: 戸田 健司)**

- 2T24 Photoluminescence property of Bi<sup>3+</sup>-substituted nanosheet derived from Aurivillius-phase layered perovskite. (Kumamoto University) ○Awaya Keisuke·Ida Shintaro
- 2T25 Synthesis of Reduced Tungsten Oxide Nanosheets and Application to Near-Infrared Reflective Films (Nagoya University·Sumitomo Metal Mining Co., Ltd.) ○TSUNEMATSU Hirofumi·(Nagoya University) SHI Yue·YAMAMOTO Eisuke·KOBAYASHI Makoto·(Sumitomo Metal Mining Co., Ltd.) YOSHIDA Tomohiro·(Nagoya University) OSADA Minoru\*
- 2T26 Fluorescence modulation function induced by H<sub>2</sub>S gas in Bi<sub>2</sub>MoO<sub>6</sub>:Eu nanophosphors (Tohoku University) ○HANGAI taisei·HASEGAWA Takuya\*·OKAWA Ayahisa·(Japan Advanced Institute of Science and Technology) ICHIBA Tomohiro·HONGO Kenta·MAEZONO Ryo·(Tohoku University) YIN Shu
- 2T27 Collective plasmonic resonances enhance the photoluminescence of rare-earth nanocrystal films processed by ultrafast annealing (Kyoto U.) ○MURAI Shunsuke·(CSIC) Cabello-Olmo Elena·(Kyoto U.) Higashino Makoto·Tanaka Katsuhisa·(CSIC) Lozano Gabriel·Miguez Hernan

**■ September 07 (Thu) (Room U) ■****16. Multidisciplinary development of oxoate materials science and technology****層状化合物・希土類****(9:00) (Session Chiars: 小嶋 芳行)**



2U01 ★ Mechanism of Ion Exchange of Rare Earth Metal Cations to Layered Zirconium Phosphate (Univ. Yamanashi) ○TAKEI Takahiro  
SAITO Norio·KUMADA Nobuhiro

#### 蛍光体・希土類

##### (9:40) (Session Chairs: 小嶋 芳行)

2U03 Synthesis, structure and emission properties of  $YMO_4$  ( $M = Nb, Ta$ ):Tb phosphor (Tokyo University of Science) ○AIMI Akihisa·SORIMACHI Takuya·KAYAMA Soichiro·FUJIMOTO Kenjiro

2U04 Synthesis and luminescence properties of glass-ceramics in the system  $Na_2O$ - $Y_2O_3$ - $ZrO_2$ - $R_2O_3$ - $P_2O_5$ - $SiO_2$  (Kogakuin University) ○SONODA Yui·(Okayama University of Science) SATO Yasushi·(Kogakuin University·Okamoto glass) KAWADA Koji·(Kogakuin University) HASHIMOTO Hideki·(Kogakuin University·Tokyo Medical and Dental University·Teikyo University) YAMASHITA Kimihiro·(Kogakuin University) OKURA Toshinori\*

##### (10:20) Break

#### 蛍光体

##### (10:40) (Session Chairs: 石垣 隆正)

2U06 Photoluminescence Properties of  $Mn^{4+}$ -activated oxide phosphors;  $La_2ZnSnO_6:Mn^{4+}$  (Tokyo University of Science) ○YOKOTA Sakurako·AIMI Akihisa\*·FUJIMOTO Kenjiro\*

2U07 Synthesis of calcium germanate by wet process (Nihon University) ICHIKAWA Shota·NARUSE Kae·KANEKO Takehiro·KOIKE Shoko·○TOYAMA Takeshi\*

#### 環境触媒・希土類

##### (11:20) (Session Chairs: 石垣 隆正)

2U08 ★ C-type rare earth oxides, open door to environmental catalysts (Faculty of Engineering, Osaka University) ○IMANAKA Nobuhito

### 07. Ceramic Sensors and Transducers -Device design for functional expression and process advancement and applications-

##### (13:20) (Session Chairs: 板垣 吉晃)

2U14 ★ *In Situ/Operando* Spectroscopic Studies on the Mechanism of Semiconductor Gas Sensors (Kumamoto University) ○INOMATA Yusuke·MASUMOTO Keigo·SHIMADA Yuki·SHINKAI Takeshi·Tetsuya Kida

2U16 ★ Investigation on the gas detection principle based on the gas adsorption on the surface of metal oxide nanoparticles (Kyushu University) ○SUEMATSU Koichi

##### (14:40) Break

##### (15:00) (Session Chairs: 伊藤 敏雄)

2U19 Morphology-controlled synthesis of tin oxides and their CO sensing properties (Ehime University) ○TODA Yuki·HIRADO Yuma·OCHIUMI Haruka·YAMAURA Hiroyuki\*·YAMAGUCHI Syuhei·YAHIRO Hidenori\*

2U20 Enhancement of Ethanol Detection through Bismuth-Doping in  $SnO_2$  Nanoparticles (Kyushu University) ○Yang Haoyue·Suematsu Koichi·Watanabe Ken·Shimano Kengo\*

2U21 Surface modification methods using  $WO_3$  for achieving highly sensitive  $SnO_2$ -based gas sensors (Kyushu University) ○Ren Tao·Suematsu Koichi·Watanabe Ken·Shimano Kengo\*

2U22 Effect of  $CuO_x$  and Au addition to porous  $SnO_2$ -based gas sensors on their VOC-sensing properties (Nagasaki University) ○FUJITA Koki·UEDA Taro·HYODO Takeo\*·SHIMIZU Yasuhiro

## ■■September 07 (Thu) (Room V) ■■

### 13. Advanced Materials Synthesis Based on Aqueous Solution

##### (13:20) (Session Chairs: 榎谷 直紀)

2V14 ★ Soft porous silicones from aqueous systems (Kyoto University) ○KANAMORI Kazuyoshi

#### ゾル・ゲル

##### (14:00) (Session Chairs: 内山 弘章)

2V16 Reaction of atmospheric pressure plasma with mist silica precursor and evaluation of film structure (Nagoya Institute of Technology) ○ITO Ryuta·DAIKO Yusuke\*

2V17 Fabrication of Silica Thin Film with Ultralow Refractive Index for Anti-reflective Coatings by Sol-gel Method (Nikon Corporation) ○SUZUKI Ryoko

2V18 Structural change in cellulose nanofiber aqueous sol by a time-domain nuclear magnetic resonance (TD-NMR) (Gifu University·Tohoku University) ○TAKAI Chika·(Tohoku University·Mageleka Japan Co., Ltd.) IKEDA Junko·(Anton Paar Japan K.K.) YAMAGATA Yoshifumi·TAKASAKI Yuichi

##### (15:00) Break

##### (15:20) (Session Chairs: 高井 千加)

2V20 ★ Structure analysis of dispersed nanoparticles by Small-angle X-ray scattering (Anton Paar Japan K.K.) ○TAKASAKI Yuichi

#### 微粒子

##### (16:00) (Session Chairs: 高井 千加)

2V22 Preparation of plate-like sodium niobate (Tokyo University of Science·TUS SSI·WaTUS) ○MACHIDA Shingo·KATSUMATA Ken-ichi·(Tokyo University of Science) YASUMORI Atsuo

2V23 Preparation of magnetite - zirconium phosphate composite microspheres for cancer hyperthermia (Kyushu Institute of technology) ○Kusano Keito·Nakamura Jin·Miyazaki Tosiki\*

##### (16:40) (Session Chairs: 町田 慎悟)

2V24 Morphological control of manganese phosphate particles via crystal growth in aqueous solutions (Kansai University) ○INOUE Sho·UCHIYAMA Hiroaki\*

2V25 Two-step liquid phase synthesis of  $CaTiO_3:Pr^{3+}$  spherical microparticles having redox responsivities (Keio University) ○YAZAWA Sotaro·HAGIWARA Manabu·FUJIHARA Shinobu\*

#### センサ材料

**(17:20) (Session Chairs: 後藤 知代)**

- 2V26 One-step synthesis of MXene exhibiting gas response by hydrothermal assisted in-situ HF etching (Tohoku Univeristy) ○Okawa Ayahisa·Sakamoto Daisuke·Hasegawa Takuya·(Kochi University) Ueda Tadaharu·(Tohoku Univeristy) Yin Shu
- 2V27 Crystal growth control and structural analysis in MoO<sub>x</sub> nanostructured thin films coating with metal organic decomposition (MOD) method (Kyoto Institute of Technology) ○Hirose Yukiko·(Nippon Shokubai Co. Ltd.·Osaka University) Nakamura Jun-ichi·(Osaka University) Harada Nobuyuki·(Kyoto Institute of Technology·Osaka University) Sugahara Tohru

**■■September 08 (Fri) (Room A) ■■**

**03. Fundamental science and new developments in ceramic-based biomaterials - Design of Novel Function for Biomaterials in Biomedical and Dental Engineering**

**(9:00) (Session Chairs: 林 幸彦朗·白木 翔大)**

- 3A01 Release of phosphate species from organically modified layered zirconium phosphate (Nagoya University) ○Kozaki Ryohei·(Kyushu Institute of Technology) Nakamura Jin·(Kansai University) Fujimoto Kazushi·(Nagoya University) Suzuki Kazumasa·Ohtsuki Chikara\*
- 3A02 Evaluation of apatite particles containing Mg(II) ions synthesized in the presence of different amounts of chitosan (Okayama University) ○NISHIZAKI Wataru·YASUHIRA Yuhi·KATAOKA Takuya·YOSHIOKA Tomohiko·(Industrial Technology Center of Okayama Prefecture) FUJII Eiji·(Okayama University) HAYAKAWA Satoshi\*

**(9:40) (Session Chairs: 吉岡 朋彦·小崎 稔平)**

- 3A03 Silica mineralization in biomolecular ionic liquid acting as solvent and catalyst (Shinshu University) ○MURAI Kazuki·Hayashi Hiroka·(Hokkaido University) Nonoyama Takayuki
- 3A04 Osteogenesis ability of sericin/brushite composite in modified biomimetic solutions (Nagoya University) ○SUZUKI Kazumasa·MISHRA Anushka·(Kyushu Institute of Technology) NAKAMURA Jin·(Nagoya University) OHTSUKI Chikara
- 3A05 Fabrication and fluorescence evaluation of calcium phosphate particles immobilizing gold nanoclusters (National Institute of Advanced Industrial Science and Technology) ○Inose Tomoya·Nakamura Maki·Oyane Ayako

**(10:40) Break**

**(11:00) (Session Chairs: 林 幸彦朗)**

- 3A07 ★ Low-temperature Sintering Process of Bioglass and Bioceramics via Biomineralization (Osaka University) ○SEO Yeongjun·Goto Tomoyo·Cho Sunghun·Sekino Tohru
- 3A09 総合討論

**(13:20) (Session Chairs: 小幡 亜希子·杉浦 悠紀)**

- 3A14 Porous Titanium implant with Gradient Pores Releasing Iodine Ions: Balancing Antibacterial and Osseointegration Activities (Department of Biomedical Sciences, College of Life and Health Sciences, Chubu University) ○Gallab Mahmoud\*·Minh Le Phuc Thi·Shintani Seine A.·Takadama Hiroaki·Ito Morihiko·Matsushita Tomiharu·Yamaguchi Seiji·(Kyoto University) Honda Shintaro·Yaichiro Okuzu·Fujibayashi Shunsuke·(Osaka Yakin Kogyo Co., Ltd.) Kitagaki Hisashi
- 3A15 Role of ceramic fillers in the biological properties of 3D printed composite materials (Kyoto Institute of Technology·Kyoto prefectural university of medicine·Udine University (Italy)·N/A) ○Marin Elia

**(14:00) (Session Chairs: 藪塚 武史·西崎 航)**

- 3A16 Fabrication of transformable carbonate apatite chains for bone regeneration (Kyushu University) ○HAYASHI Koichiro·Kishida Ryo·Tsuchiya Akira·Ishikawa Kunio
- 3A17 Regulation of growth factor localization and evaluation of osteoblastic activity on the surface of octacalcium phosphate modified with polysaccharide (Tohoku University) ○HAMAI Ryo·TSUCHIYA Kaori·SUZUKI Osamu
- 3A18 Osteoblast response to soluble ionic species released from alkyl-modified calcium silicate (Kyushu Institute of Technology) ○NAKAMURA Jin·(Nagoya University) HIROMICHI Yusuke·SUZUKI Kazumasa·(Kansai University) FUJIMOTO Kazushi·(Nagoya University) OHTSUKI Chikara

**(15:00) Break**

**(15:20) (Session Chairs: 中村 仁·神戸 佑也)**

- 3A20 Calcium phosphate-nanocarbon composites containing bisphosphonate -Effect on osteoclast differentiation- (National Institute of Advanced Industrial Science and Technology) ○NAKAMURA Maki·YAMAMOTO Yumiko·ZHANG Minfang·(Shinshu University) UEDA Katsuya·AOKI Kaoru·SAITO Naoto·(National Institute of Advanced Industrial Science and Technology·Meijo University) YUDASAKA Masako
- 3A21 Structure of boron-containing phosphate invert glasses (National Institute of Advanced Industrial Science and Technology (AIST)) ○Lee Sungho·Nagata Fukue·(Nagoya Institute of Technology) Kasuga Toshihiro

**(16:00) (Session Chairs: 中村 仁·木田 俊太郎)**

- 3A22 Preparation of β-TCP / ACP composite particles by a mechanochemical method (Nagoya Institute of Technology) ○KASUGA Toshihiro·Matsubara Takashi·Mabuchi Megumi·Obata Akiko·(ORTHOREBIRTH Co. Ltd.) Kumano Masahiro·Nishikawa Yasutoshi
- 3A23 Effects of sodium silicates on the activity of enzymes (Okayama University) ○YOSHIOKA Tomohiko·NAKAYAMA NANAMI·(Kyushu Institute of Technology) SHIROSAKI Yuki·(Okayama University) KATAOKA Takuya·HAYAKAWA Satoshi

**(16:40) (Session Chairs: 中村 仁)**

- 3A24 総合討論

**■■September 08 (Fri) (Room B) ■■**

**08. Materials science of inorganic compounds utilizing elemental/structural diversities**

**(9:00) (Session Chairs: 藤井 孝太郎)**

- 3B01 Synthesis and structural analysis of a new material SrBi<sub>3</sub>O<sub>5</sub>F (Kindai University) ○SAWADA Kohei·NOMA Naoki·OKA Kengo\*·IWASAKI Mitunobu\*

## イオン伝導

### (9:20) (Session Chairs: 藤井 孝太郎)

- 3B02 Synthesis and chloride ion conductivity of a new oxychloride (Hokkaido University・National Institute for Materials Science)  
○MENG Yu・(Osaka University) NUNOTANI Naoyoshi・IMANAKA Nobuhito・(National Institute for Materials Science)  
MATSUSHITA Yoshitaka・(Hokkaido University)・National Institute for Materials Science) YAMAURA Kazunari・TSUJIMOTO  
Yoshihiro\*
- 3B03 Synthesis of Fluoride-ion Solid Electrolytes  $\text{La}_2\text{SrF}_{4+x}\text{S}_{2-x}\text{Cl}_x$  (Ritsumeikan University) ○Shintomi Yu・Tachibana Shintaro・Zhong  
Chengchao\*・Orikasa Yuki\*
- 3B04 Exploration of unconventional proton-conducting oxides driven by high-throughput first-principles calculations (Osaka University・  
Japan Fine Ceramics Center) FUJII Susumu・(Kyushu University) SHIMIZU Yuta・Hyodo Junji・YAMAZAKI Yoshihiro・(Japan Fine  
Ceramics Center) ○KUWABARA Akihide

### (10:20) Break

## 誘電体

### (10:40) (Session Chairs: 上田 純平)

- 3B06 Ferroelectric property in  $\text{PbBiTi}_4\text{O}_{10}\text{F}$  (Kindai University) ○OKA Kengo・Yamada Kosei・Muramoto Kanaru・Noma Naoki・Iwasaki  
Mitsunobu
- 3B07 Study on substitutional solid solution formations of  $\text{BaZrO}_3$  and  $\text{Ba}_2\text{ZrO}_4$  with Mn (Murata Manufacturing Co., Ltd.) ○HOSONO  
Akira・Watanabe Kentaro・Minamiyama Tatsuto・Oyama Takashi・Sato Hideto
- 3B08 ★ Site-selective doping and site-dependent luminescence of lanthanide ions in perovskite-type oxides (Kyushu Institute of Technology)  
○UEDA Kazushige

## 新規酸化物

### (13:20) (Session Chairs: 稲熊 宜之)

- 3B14 ★ Synthesis and characterization of novel oxides with high oxidation-state cations (Utsunomiya University) ○SHAN Yue Jin

## 酸素吸収放出

### (14:00) (Session Chairs: 八尋 秀典)

- 3B16 Dynamic behaviors during oxygen intake and release in Melilite-type cerium oxides (Kanagawa University) ○Aoki Misato・Ohishi  
Kosaku・Ogawa Satoshi・Saito Miwa・(Kyoto Institute of Technology) Hosokawa Saburo・(Kanagawa University) Motohashi Teruki\*
- 3B17 Changes in oxygen desorption behaviors of  $\text{SrFeO}_{3-\delta}$  by A-site substitution (Kochi University) ○KATAYAMA Nami・FUJISHIRO  
Fumito\*
- 3B18 Advanced analysis of the reaction in  $\text{SrCrO}_{3-\delta}$  by time-resolved XRD and Bayesian inference (Tokyo Institute of Technology)  
○KOSUGE Taiki・(Japan Synchrotron Radiation Research Institute) KAWAGUCHI Shogo・KOBAYASHI Shintaro・YOKOYAMA  
Yuichi・(Kumamoto University) MIZUMAKI Masaichiro・(Kyoto Institute of Technology) HOSOKAWA Saburo・(Tokyo Institute of  
Technology・Kanagawa Institute of Industrial Science and Technology) AZUMA Masaki・(Tokyo Institute of Technology)  
YAMAMOTO Takafumi\*

### (15:00) Break

## ペロブスカイト

### (15:20) (Session Chairs: 細川 三郎)

- 3B20 Preparation of Ce-substituted perovskite-type oxide by thermal decomposition of heteronuclear metal cyano complex precursors  
(Ehime University) ○YAMAGUCHI Noa・MUKAI Seiya・TABARA Hinano・YAMAURA Hiroyuki・YAMAGUCHI Syuhei・  
YAHIRO Hidenori\*・(Tohoku University) TSUJI Hiroto・NINOMIYA Kakeru・NISHIBORI Maiko
- 3B21 Synthesis mechanism of Ce-containing perovskite-type  $\text{LaFeO}_3$  by cyano-complex pyrolysis method. (Tohoku University) ○TSUJI  
Hiroto・NINOMIYA Kakeru・(Ehime University) TABARA Hinano・YAMAGUCHI Shuhei・(Tohoku University) YIN Zhong・(Ehime  
University) YAHIRO Hidenori・(Tohoku University) NISHIBORI Maiko\*

## カルコゲナイド

### (16:00) (Session Chairs: 萩野 拓)

- 3B22 Synthesis, characterization and physical property of cation-ordered perovskite  $\text{SrV}_{0.3}\text{Fe}_{0.7}\text{O}_3$  (Tokyo Institute of Technology)  
○NAGASE Teppei・(Kanagawa Institute of Industrial Science and Technology・Tokyo Institute of Technology) NISHIKUBO  
Takumi・SAKAI Yuki・(Tokyo Institute of Technology・Kanagawa Institute of Industrial Science and Technology) SHIGEMATSU  
Kei・AZUMA Masaki・(Tokyo Institute of Technology) YAMAMOTO Takafumi\*

## ペロブスカイト

### (16:20) (Session Chairs: 萩野 拓)

- 3B23 Synthesis and structural analysis of perovskite-type oxides  $\text{Ba}_6\text{Na}_2\text{Ta}_2\text{X}_2\text{O}_{17}$  ( $X = \text{P}, \text{V}$ ) with  $(111)_p$  oxygen-deficient planes (Tokyo  
Institute of Technology) ○Otsubo Yuya・Nagase Teppei・(Tokyo Institute of Technology・Kanagawa Institute of Industrial Science  
and Technology) Azuma Masaki・(Tokyo Institute of Technology) Yamamoto Takafumi\*
- 3B24 Crystal structure of  $\text{Ba}_2\text{YAlO}_5$  and  $\alpha/\beta$ - $\text{Ba}_6\text{Y}_2\text{Al}_4\text{O}_{15}$  (Tohoku University) ○Simura Rayko・Suzuki Yamato・Yamane Hisanori

## ■■September 08 (Fri) (Room C) ■■

## 06. Fundamental Research and Applied Development of Ceramic Materials for Energy Conversion, Storage and Transportation

## 理論計算・解析

### (9:00) (Session Chairs: 谷端 直人)

- 3C01 High ionic conductivity by introduction of dislocations in single-crystal solid electrolytes (National Institute of Advanced Industrial  
Science and Technology) ○YASUI Kyuichi・HAMAMOTO Koichi
- 3C02 Theoretical Modeling of Cation Configurations and Li-Ion Diffusion in Solid Electrolyte LLTO (Japan Fine Ceramics Center)  
○FISHER Craig・IKUHARA Yumi・KUWABARA Akihide・MORIWAKE Hiroki・(Japan Fine Ceramics Center・The University of  
Tokyo) IKUHARA Yuichi

## Na 電池

**(9:40) (Session Chairs: 寺西 貴志)**

- 3C03 Phase purification of a positive active material  $\text{Na}_4\text{Ni}_3(\text{PO}_4)_2\text{P}_2\text{O}_7$  in a wet-chemical process (Toshima Manufacturing Co., Ltd.)  
 ○SAKAI Joe·OKABE Yuna·YODA Koji·NAKAMURA Toru·TOKUDA Yuichiro·(Central Research Institute of Electric Power Industry) KOBAYASHI Takeshi·(Kogakuin University) SEKI Shiro·(Japan Fine Ceramics Center) YAMAMOTO Kazuo·KATO Takeharu
- 3C04 Adhesion of tin iron silicate glass anode to solid electrolyte by laser irradiation (Nagaoka University of Technology) ○Sato Fumitaka·Honma Tsuyoshi\*

**F 電池****(10:20) (Session Chairs: 寺西 貴志)**

- 3C05 Charge/discharge property and mechanism of alloy anodes for fluoride-ion batteries (The University of Tokyo) ○SASANO Shun·ISHIKAWA Ryo·KAWAHARA Kazuaki·(The University of Tokyo·Japan Fine Ceramics Center) SHIBATA Naoya·IKUHARA Yuichi

**(10:40) Break****コンバージョン****(11:00) (Session Chairs: 小林 剛)**

- 3C07 ★ Approach to Reconversion Reaction by Composite Cathode with Sacrificial Salt (Kyushu University) ○OKADA Shigetō

**全固体 Li 電池****(13:20) (Session Chairs: 森 大輔)**

- 3C14 Design guideline for deformability by shear modulus in chloride materials for all-solid-state lithium-ion batteries (Nagoya Institute of Technology) ○TANIBATA Naoto·AIZU Shin·TAKEDA Hayami·NAKAYAMA Masanobu·KOBAYASHI Ryo
- 3C15 Liquid-phase synthesis and electrochemical characterization of halide antiperovskite solid electrolytes (Toyoashi University of Technology) ○YONEDA Takuto·HIKIMA Kazuhiro·MATSUDA Atsunori\*
- 3C16 Electrochemical property of  $\text{Li}_{10}\text{GeP}_2\text{S}_{12}$  Solid Electrolytes synthesized by Rapid Solution Method (Toyoashi University of Technology) ○Hikima Kazuhiro·Ogawa Kaito·Kusaba Ikuyo·Gamo Hirotaada·Matsuda Atsunori
- 3C17 Preparation of lithium oxide having layered rock salt type structure cathode composite by infiltration method and evaluation of all solid-state battery characteristics (Toyoashi University of Technology) ○NAGAI Ryota·HIKIMA Kazuhiro·MATSUDA Atsunori\*

**(14:40) Break****(15:00) (Session Chairs: 引間 和浩)**

- 3C19 Dendrite suppression effect on the garnet-type solid electrolyte by the modification of grain boundary (Mie University) ○MORI Daisuke·KATSU Ryota·WADA Takuya·TAMINATO Sou·IMANISHI NOBUYUKI·(Tokyo Institute of Technology) SUZUKI Kouta·HIRAYAMA Masaaki
- 3C20 Improvement of electrolyte-supported oxide-based all-solid state batteries assembled in air (Okayama University·Tokyo Institute of Technology) ○TERANISHI Takashi·(Okayama University) HAMADA Kashu·HIGUCHI Takumi·MOTOBAYASHI Hidefumi·(Tokyo Institute of Technology) YASUHARA Sou·YASUI Shintaro·(Okayama University) KONDO Shinya·KISHIMOTO Akira
- 3C21 Mechanical property of composite positive electrode of all-solid-state lithium-ion secondary batteries (Tokushima University) ○kurotatsu shinnosuke·MURAKAMI RYUSEI·(Nihon University) Iguchi Fumitada·(Tokushima University) Oishi Masatsugu\*
- 3C22 Synthesis and M(Mn, V, Mo) Substitution Dependence of Conductivity, Average and Electronic Structures of NASICON-type  $\text{Li}_{1.5}\text{Al}_{0.5}\text{Ge}_{1.5-x}\text{M}_x(\text{PO}_4)_3$  (Tokyo University of Science) ○Masuda Yuta·Ishibashi Chiaki·Kitamura Naoto·Idemoto Yasushi\*·(DOWA ELECTRONICS MATERIALS Co., Ltd.) Tanoue Kohji·Abe Daisuke

**■■September 08 (Fri) (Room D) ■■****18. Advanced science of engineering ceramics -New development of structural and interfacial control and analytical techniques-****CMC・耐環境性****(9:20) (Session Chairs: 北岡 諭)**

- 3D02 Fabrication of C/UHTCMC by melt Infiltration of ternary alloys and evaluation of degradation by arc wind tunnel tests (Tokyo University of Science) ○KOIDE Noriatsu·ARAI Yutaro·INOUE Ryo\*
- 3D03 Molecular dynamics analysis of wetting and infiltration phenomena at the interface between Si and carbon (Tokyo University of Science) ○KOIZUMI Taketo·MATSUBARA Daichi·ARAI Yutaro·(Japan Aerospace Exploration Agency) AOKI Takuya·(Tokyo University of Science) INOUE Ryo\*

**(10:00) (Session Chairs: 且井 宏和)**

- 3D04 Design of EBCs to mitigate CMAS attack (Japan Fine Ceramics Center) ○KITAOKA Satoshi·TANAKA Makoto·KAWASHIMA Naoki·HASHIMOTO Soma·ITO Taishi·(IHI) YAMAZAKI Naoki·HOSOYA Nagisa·NAKAMURA Takeshi
- 3D05 Crystal structure control of  $R_2\text{TiO}_5$  by entropy stabilization (Japan Fine Ceramics Center) ○TANAKA Makoto·KAWASHIMA Naoki·OGAWA Takafumi·ITO Taishi·KATO Takeharu·KITAOKA Satoshi
- 3D06 Oxidation of  $\text{Al}_4\text{SiC}_4/\text{SiC}$  Ceramics and Their Corrosion Behavior against Molten CMAS at 1350°C (Tokyo Institute of Technology) ○TANAKA Atsuko·GUBAREVICH Anna·(National Institute for Materials Science) NISHIMURA Toshiyuki·(Tokyo Institute of Technology) YOSHIDA Katsumi\*

**(11:00) (Session Chairs: 宮崎 広行)**

- 3D07 Preparation of composite films with high hardness and lowered elastic modulus by chemical vapor deposition of silicon carbide and tantalum carbonitride (National Institute of Advanced Industrial Science and Technology (AIST)) ○KATSUI Hirokazu·(National Institute for Materials Science (NIMS)) SHIMODA Kazuya·(National Institute of Advanced Industrial Science and Technology (AIST)) HOTTA Mikinori
- 3D08 Evaluation of erosion resistance of SiC-TaCN hybrid coating layer by chemical vapor deposition method (National Institute for Materials Science) ○SHIMODA Kazuya·(Agency of Industrial Science and Technology) KATSUI Hirokazu

**■■September 08 (Fri) (Room E) ■■**

## 23. Measurement and Visualization Technology for Trans-scale Analysis and Process Informatics of Ceramics

### プロセス中の可視化Ⅱ

(9:00) (Session Chairs: 岡元 智一郎)

- 3E01 ★ Wishing to know what's going on inside the furnace (National Institute for Materials Science•Tokyo Institute of Technology•Kyushu University) ○OHASHI Naoki•(National Institute for Materials Science•Tokyo Institute of Technology) SEGAWA Hiroyo•(National Institute for Materials Science) Ohsawa Takeo•(National Institute for Materials Science•Kyushu University) SAKAGUCHI Isao
- 3E03 Internal structure diagnosis measurement of electric waveforms by applied nanosecond pulse electric filed at sintering body (Nagaoka University of Technology) ○SAITO Hiroyuki•NISHIDA Keisuke•SHEN Zhiming•MITA Wataru•(National Institute of Technology, Oyama College) NAGAO Kazuki•(Nagaoka University of Technology) FURUNO Hideto•TAKIMOTO Yuya•NIIHARA Koichi•NAKAYAMA Tadachika\*
- 3E04 Internal structure evolution of Al<sub>2</sub>O<sub>3</sub> slurry during slip casting process visualized by OCT in situ observation - Effect of the amount of dispersant (Yokohama National University) ○IZAWA MIZUKI•TATAMI Junichi\*•Iijima Motoyuki•(Kanagawa Institute of Industrial Science and Technology) TAKAHASHI Takuma

### 先端計測Ⅲ

(10:20) (Session Chairs: 多々見 純一)

- 3E05 Multiscale observation of silicon nitride ceramics and their effects on mechanical properties (Nagaoka University of Technology) ○TANAKA Satoshi
- 3E06 Composite structure and properties of sintered porous ceramics /hybrid material composites (Nagoya Institute of Technology) ○HONDA Sawao•KUBOTA Ryosuke•HASHIMOTO Shinobu•IWAMOTO Yuji
- 3E07 Study on improvement of oxygen absorption-desorption properties of Ca<sub>2</sub>AlMnO<sub>5+δ</sub>-based ceramics (Nagaoka University of Technology) ○ABE Shunya•Okamoto Tomoichiro\*
- 3E08 Effect of co-doping on the luminescence properties of Ca<sub>2</sub>Al<sub>2</sub>SiO<sub>7</sub>: Pr (Nagaoka University of Technology) ○Sasaki Taiga•Okamoto Tomoichiro\*

## ■■September 08 (Fri) (Room G) ■■

## 22. Frontier of next generation environmental ceramic materials

### 合成プロセス

(9:00) (Session Chairs: 西本 俊介)

- 3G01 ★ Synthesis of environmental materials with two-dimensional and crystalline nanostructures by aqueous solution process (Gifu University) ○BAN Takayuki

### 層状化合物

(9:40) (Session Chairs: 西本 俊介)

- 3G03 Observation of layered double hydroxide precipitated inside porous glass by X-ray computed tomography (Tokyo University of Science•TUSSSI•WaTUS) ○MACHIDA Shingo•Katsumata Ken-ichi•(Tokyo University of Science) Yasumori Atsuo
- 3G04 Formation of the moth-eye structures on a particulate silicon (Shinshu University) ○Nakauchi Yuki•Okada Tomohiko\*

(10:20) Break

(10:40) (Session Chairs: 前田 浩孝)

- 3G06 Relationship between Luminescence Properties and Crystal Structure of Tb<sup>3+</sup>-doped Layered Double Hydroxides (Hiroshima University) ○Makishima Kohei•Moriyoshi Chikako\*•(Shimane University) Ota Kaoru•Fujimura Takuya•Sasai Ryo
- 3G07 Nitrate-Detection Ability of Tb<sup>3+</sup>-Doped Layered Double Hydroxide with Different Metal Composition (Shimane University) ○OTA Kaoru•FUJIMURA Takuya•(Hiroshima University) MAKISHIMA Kohei•MORIYOSHI Chikako•(Shimane University) SASAI Ryo\*

### 金属-有機構造体

(11:20) (Session Chairs: 藤村 卓也)

- 3G08 ★ Crystal-liquid-glass transitions of metal-organic frameworks, MOFs (Kyoto University) ○HORIKE Satoshi

### 吸着

(13:20) (Session Chairs: 井野川 人姿)

- 3G14 Gas adsorption properties of ferric oxyhydroxide compounds (Okayama University) ○KAMESHIMA Yoshikazu•Nishimoto Shunsuke

### 濡れ性

(13:40) (Session Chairs: 井野川 人姿)

- 3G15 Effect of ultrasonic treatment on wettability of superhydrophilic photocatalysts (Okayama University) ○MORI Yuki•NISHIMOTO Shunsuke\*•KAMESHIMA Yoshikazu\*
- 3G16 Stability in wettability and durability against water of sol-gel-derived sodium silicate thin films (Kansai University) ○TAMURA Naoki•MIYAO Yuta•KOZUKA Hiromitsu\*

### 構造材料

(14:20) (Session Chairs: 井野川 人姿)

- 3G17 Analysis and Mechanical Properties of Flexible Calcium Carbonate Structure in door snails (Gastropoda: Clausiliidae) (Keio University) ○KURIHARA Yuri•(Keio University•The University Museum, The University Tokyo•The University of Tokyo) YOSHIMURA Taro•(The University of Tokyo) UESHIMA Rei•(Keio University) KISHIMOTO Takuto•ONO Nozomi•TAKAHASHI Hidetoshi•WATANABE Hiroto•OAKI Yuya•IMAI Hiroaki\*

## ■■September 08 (Fri) (Room H) ■■

## 12. Hyper-Ordered Structure Science

(9:00) (Session Chairs: 北村 尚斗)

- 3H01 Structural analysis of alkali silicate glasses by element-specific quantum beam measurements (Kyoto University) ○ONODERA Yohei·FUJITA Susumu·(AIST) MASAI Hirokazu
- 3H02 Defect structures in functional inorganic materials reproduced by molecular dynamics simulations (Yamagata University) ○MATSUSHIMA Yuta·HAYASAKA Ryusei·SATO Shogo
- 3H03 Crystallization molecular dynamics simulation of neutron-irradiated quartz and glass (Chiba University) ○MIYAGAWA Taisei·OHKUBO Takahiro\*

**(10:00) (Session Chiars: 小野寺 陽平)**

- 3H04 An identification method of glass and ceramics structures from molecular simulation data (Chiba university) ○OHKUBO Takahiro·FUKUDA KAZUKI
- 3H05 ★ Development of synchrotron instrument for advancing hyper-ordered structure science (JASRI) ○TAJIRI Hiroo

**(11:00) (Session Chiars: 伊與木 健太)**

- 3H07 Composition dependence of the optical absorption in Co<sup>2+</sup>-doped sodium borosilicate glass melts (The University of Shiga Prefecture) ○ASANO Kodai·YAMADA Akihiro·MATSUOKA Jun\*
- 3H08 Thermal conduction of sodium borate glasses around the glass transition temperature (The University of Shiga Prefecture) ○ISHITA Kazuki·YAMADA Akihiro·MATSUOKA Jun\*
- 3H09 Electric conduction of vanadium borate melts (The University of Shiga prefecture) ○KATO Haruka·HAYASHI Yuki·YAMADA Akihiro·YAMAMOTO Shigeru·MATSUOKA Jun\*

**(13:20) (Session Chiars: 増野 敦信)**

- 3H14 Composition dependencies of conduction properties and cation arrangements of Li<sub>x</sub>La<sub>(1-x)3</sub>NbO<sub>3</sub> with A-site deficient perovskite structure (Tokyo University of Science) ○TANG YIZHONG·KITAMURA NAOTO\*·ISHIBASHI CHIAKI·IDEMOTO YASUSHI
- 3H15 Effects of electrode preparation process on positive electrode properties, average and local structures of Li<sub>1.3</sub>Nb<sub>0.3</sub>Fe<sub>0.4</sub>O<sub>2</sub>-based materials (Tokyo University of Science) ○Hayashi Yuna·Kitamura Naoto\*·Ishibashi Chiaki·Idemoto Yasushi
- 3H16 Thermal Treatment Effects on Structure and Properties of Topochemically Synthesized Li<sub>x</sub>CoF<sub>3</sub> (Kyushu University) ○Yamada Juko·Matsuo Yumi·Matsukawa Yuko·Ohno Saneyuki·Hayashi Katsuro·Akamatsu Hirofumi\*·(Kyoto University) Fujita Koji·Onodera Yohei
- 3H17 Crystal structure and piezoelectricity of Sr-substituted akermanite (Saitama University) ○TAKEDA Hiroaki·(Tokyo University of Science) KITAMURA Naoto·(Saitama University) UEHARA Takumi·KODAMA Shohei·YANASE Ikuo
- 3H18 Anisotropy in borosilicate glass and the structural modification of the glass network (The University of Shiga Prefecture) ○TANIGUCHI Shingo·YAMADA Akihiro\*·(Ritsumeikan University SR Center) SHIBATA Daisuke·(The University of Shiga Prefecture) MATSUOKA Jun

**(15:00) Break**

**(15:20) (Session Chiars: 小野寺 陽平)**

- 3H20 Atomic and electronic structures of Ag zeolite having an antibacterial property (Kumamoto University) ○HOSOKAWA Shinya
- 3H21 Revealing the Amorphous-to-Crystalline Transformation in Zeolite Synthesis Using *In Situ* High-Energy X-ray Total Scattering Measurement (The University of Tokyo) ○HU Peidong·MINAMI Ayano·SADA Yuki·(Japan Synchrotron Radiation Research Institute) YAMADA Hiroki·OHARA Koji·(The University of Tokyo) OKUBO Tatsuya·WAKIHARA Toru
- 3H22 Adsorption behavior of low-concentration nitrous oxide on natural mordenite zeolite (The University of Tokyo) ○YAMAGUCHI Saeko·HU Peidong·(Quantum Materials Simulation Group, Quantum Materials Field, Reseach Center for Materials Nanoarchitectonics·National Institute for Materials Science) NAKATA Ayako·(The University of Tokyo) TANGE Kotaro·TONOKURA Kenichi·TAKEMOTO Masanori·YONEZAWA Yasuo·IYOKI Kenta·OKUBO Tatsuya·WAKIHARA Toru\*
- 3H23 Effect of defect-healing treatment on cross-linked layered silicates (The University of Tokyo) ITO Yoshiaki·WAKIHARA Toru·OKUBO Tatsuya·(The University of Tokyo·JST PRESTO) ○IYOKI Kenta

■■September 08 (Fri) (Room J) ■■

**04. Random Materials –Function and Physical Property Correlated with the Structure-**

**レーザープロセス**

**(9:20) (Session Chiars: 岸 哲生)**

- 3J02 ★ Metal sphere manipulation by laser irradiation in glass (Chiba University) ○HIDAI Hirofumi
- 3J04 Morphological change and crystallization of sodium iron phosphate glass by laser irradiation (Nagaoka University of Technology) ○akuzawa tomoya·honma tsuyoshi\*

**結晶化**

**(10:20) (Session Chiars: 岸 哲生)**

- 3J05 Exploring The Crystallization Mechanism and Sodium Ion Conductivity Characteristics of Na<sub>2</sub>O-ZrO<sub>2</sub>-P<sub>2</sub>O<sub>5</sub>-SiO<sub>2</sub> Glass (Osaka University) ○Sakaeda Kento·(Osaka University·National Institute of Advanced Industrial Science and Technology) SHINOZAKI Kenji\*·(National Institute of Advanced Industrial Science and Technology) KITTA Mitsunori·(Tohoku University) SUKENAGA Sohei·(Nagaoka University of Technology) HONMA Tsuyoshi

**(10:40) Break**

**(11:00) (Session Chiars: 富田 夏奈)**

- 3J07 Nonlinear optical glass-ceramic fiber: characterization and future prospects (Tohoku University) ○NAKAMURA Takuma·TERAKADO Nobuaki·TAKAHASHI Yoshihiro·FUJIWARA Takumi\*
- 3J08 Evaluation of mechanical properties of glass-ceramics with different compositions and same microstructures (Tokyo University of Science·TUSSSI·WaTUS) ○MACHIDA Shingo·(Tokyo University of Science) Saito Daigo·(Tokyo University of Science·TUSSSI·WaTUS) Katsumata Ken-ichi·(Tokyo University of Science) Yasumori Atsuo
- 3J09 interlaminar crack propagation behavior of layered compounds dispersed in (Tokyo University of Science) ○YAMAGUCHI Takuma·MACHIDA Shingo·ARAI Yutaro·(National Institute for Materials Science) OKUMA Gaku·(Tokyo University of Science) KATSUMATA Ken-ichi·YASUMORI Atsuo\*

**(13:20) (Session Chiars: 坂本 明彦)**

3J14 ★ The colorless transparent zero thermal expansion glass ceramic (Nippon Electric Glass Co., Ltd.) ○YOKOTA Yuki

#### 酸化還元

(14:00) (Session Chairs: 坂本 明彦)

3J16 Amber coloration of soda-lime silicate glasses using rice husk ash as silica source (Kyoto Institute of Technology) ○SAKAGUCHI Koichi·TAGURO Natsuki·WAKASUGI Takashi·KADONO Kohei·(Nihon Yamamura Glass Co., Ltd.) HORI Shiori·YAMAMOTO Hashira

(14:20) (Session Chairs: 町田 慎悟)

3J17 Glass structure and state of silver of in Ag<sup>+</sup>/Ag-doped zinc aluminophosphate glass prepared by melt-quenching method with various conditions (National Institute of Technology, Suzuka College) ○TOBIOKA Yuma·WADA Noriyuki\*·(Ritsumeikan University) KOJIMA Kazuo

(14:40) Break

#### ガラス構造

(15:00) (Session Chairs: 町田 慎悟)

3J19 The effect of additive transition metal ion on phase separation behavior of low-alkali borosilicate glass (Tokyo Institute of Technology) ○Tomita Kana·Kishi Tetsuo\*·Yano Tetsuji\*

3J20 Analysis based on heterogeneous elasticity theory for boson peaks and medium range order in silica glass and glycerol (University of Tsukuba) ○KYOTANI Dan·OH Soo Han·(Tokyo Institute of Technology) KITANI Suguru·(Ritsumeikan University) FUJII Yasuhiro·(National Institute for Materials Science) KOHARA Shinji·(University of Tsukuba) MORI Tatsuya\*

(15:40) (Session Chairs: 篠崎 健二)

3J21 ★ From Atomistic Modeling to Structural and Physical Properties Analysis for Ionic-Covalent Bonding Multi-Component Glasses (Kitasato University) ○ISHII Yoshiki

3J23 Chemically strengthened glass and its compressive stress: Derivation of a "stuffing" model involving entropic terms (Tohoku University) ○TERAKADO Nobuaki·MATSUMOTO Kota·MURAI Daichi·SASAKI Ryusei·TAKAHASHI Yoshihiro·FUJIWARA Takumi

3J24 総合討論

## ■■September 08 (Fri) (Room L) ■■

### 15. Carbon-neutral in ceramics field

#### カーボンニュートラルとセラミックス

(9:00) (Session Chairs: 藤原 忍)

3L01 ◆ Carbon neutral commitments in the ceramics field (Hokkaido University) ○TADANAGA Kiyoharu

3L02 Adsorption of nitrogen molecules on nanoparticles of inorganic oxide materials under reduced pressure and the conversion to ammonium nitrate by reaction with water (Yamagata University) ○SATO Masashi·OHNO Hiroto·CHIBA Honoka·MATSUSHIMA Yuta\*·(Shizuoka University) KOMINAMI Hiroko·HARA Kazuhiko

3L03 Application of ceramics for radiation cooling (Mitsubishi Heavy Industries, Ltd.) ○TAKEDA Yasunari·OKAJIMA Yoshifumi·YAMASHITA TAISEI·YANASE Yuta·MITSUI Hiroyuki

#### マテリアルリサイクル

(10:00) (Session Chairs: 藤原 忍)

3L04 Basic research for recycling of photovoltaic panel glass (Hokkaido research organization) ○INANO Hiroyuki·Akemoto Yasuhiro·Asakura Ken

(10:20) Break

(10:40) (Session Chairs: 忠永 清治)

3L06 ★ Development of separation technology to achieve both carbon neutrality and resource circulation (Waseda University·The University of Tokyo) ○TOKORO Chiharu

3L08 Lithium Separation for Heat-treated Waste Lithium-ion Batteries (Ehime University) ○SEGUCHI Ryotaro·TANAKA Soma·AONO Hiromichi\*·(EGS,Co.,Ltd) TSUGITA Yasuhiro·(Ehime University·EGS,Co.,Ltd) KONDO Jiro·(Oono Associates Co. Ltd.) SHIBA Ryota

3L09 Separation mechanism of nickel and cobalt using a chelating resin in solution from waste lithium-ion batteries (Ehime University) ○KUNIMUNE Yuma·AONO Hiromichi\*·(EGS,Co.,Ltd) TSUGITA Yasuhiro·(Ehime University·EGS,Co.,Ltd) KONDO Jiro

#### カーボンニュートラルとセラミックス

(13:20) (Session Chairs: 中島 靖)

3L14 ★ Efforts to Achieve Carbon Neutral in AIST (National Institute of Advanced Industrial Science and Technology) ○ENDO Akira

#### 電気化学デバイスとカーボンニュートラル

(14:00) (Session Chairs: 中島 靖)

3L16 Effect of electrode surface structure on sustainability of CO<sub>2</sub> capture by seawater electrolysis (Shizuoka University) ○MACHIDA Shunsuke·SUDA Seiichi\*

3L17 Synthesis of antiperovskite-type Li<sub>2</sub>FeSO cathode active materials for all-solid-state batteries (Toyohashi University of Technology) ○NISHIMOTO Maro·HIKIMA Kazuhiro·MATSUDA Atsunori\*

(14:40) Break

#### 触媒・電極触媒とカーボンニュートラル

(15:00) (Session Chairs: 松田 厚範)

3L19 ★ Development of inorganic nanomaterials to promote catalytic processes for effective use of renewable energy (Kyushu University) ○YAMAUCHI Miho

3L21 Production of Methane from Carbon Dioxide Using Zirconium-Tin Oxide Based Catalysts (Osaka University) ○OGINO Yuki·NUNOTANI Naoyosi·IMANAKA Nobuhito\*

(16:00) (Session Chairs: 布谷 直義)

- 3L22 Preparation of high entropy oxide and its photocatalytic property (Toyohashi University of Technology) ○Deguchi Hiroki·Kanetsuki Yoshiro·Tsubota Hanzo·Tan Wai Kian·Muto Hiroyuki·Matsuda Atsunori·Kawamura Go\*
- 3L23 Electrochemical CO<sub>2</sub> reduction by Zn-containing layered double hydroxides (Hokkaido University) NAKAZATO Ryosuke·Matsumoto Keeko·YAMAGUCHI Noboru·(Hokkaido University·Consejo Superior de Investigaciones Científicas) Rosero-Navarro Nataly Carolina·(Hokkaido University) MIURA Akira·○TADANAGA Kiyoharu

**総合討論**

**(16:40) (Session Chairs: 忠永 清治)**

- 3L24 総合討論

**■■September 08 (Fri) (Room N) ■■**

**02. Hybrid materials and emergent chemical/physical properties**

**(10:00) (Session Chairs: 神戸 徹也)**

- 3N04 ★ Synthesis of inorganic nano-materials within nano-space of organic cage molecules (University of Tsukuba) ○NIHEI Masayuki

**(10:40) (Session Chairs: 塚田 学)**

- 3N06 Fast Hybrid Ion Conduction and its Mechanism of Hybrid Materials consisting of Palmierite and 12R Perovskite Layers (Tokyo Institute of Technology) ○SAKUDA Yuichi·(Tokyo Institute of Technology·Australian Nuclear Science and Technology Organization·The University of Sydney) AVDEEV Maxim·(Tokyo Institute of Technology) FUJII Kotaro·YASUI Yuta·(Australian Nuclear Science and Technology Organization) HESTER James R·(High Energy Accelerator Research Organization) HAGIHARA Masato·(Tokyo Institute of Technology) YASHIMA Masatomo\*

- 3N07 Preparation of polysiloxane brushes with surface hydroxyl groups as starting points (Nagoya University) ○Furukawa Tōi·Hara Mitsuo\*·Takeoka Yukikazu·Seki Takahiro

**(11:20) (Session Chairs: 石田 康博)**

- 3N08 Effect of particle surface treatment on elongation properties of biocompatible polymer PMEA composed of silica particles (Nagoya University) ○SAKAMOTO Moe·HARA Mitsuo\*·(Tokyo Institute of Technology) LIANG Xiaobin·NAKAJIMA Ken·(Tohoku University) HOSHINO Taiki·(Kyushu University) TANAKA Masaru·(Nagoya University) TAKEOKA Yukikazu

- 3N09 Gas barrier properties of Inorganic-organic hybrid gas barrier membranes prepared by atmospheric pressure plasma chemical vapor deposition (Kobe University) ○KURAOKA Koji·NISHIMAKI Riku

**(13:20) (Session Chairs: 神戸 徹也)**

- 3N14 ★ Introduction of Molecular Technologies for Thermocells and TREC's (The University of Tokyo) ○YAMADA Teppei·ZHOU Hongyao

**(14:00) (Session Chairs: 白幡 直人)**

- 3N16 Synthesis and Characterization of Furan Resin/Porous Porcelain Composites (Saga University) ○FURUSHO Shimon·NISHIMURA Takefumi·ISONO Kenichi·(Saga Ceramics Research Laboratory) KAMOCHI Nobuaki·(Saga University) ICHINOSE Hiromichi·YADA Mitsunori\*

- 3N17 Development of Water-Resistant Sheets by Compounding Cellulose Nanofibers and Inorganic Nanoparticles (Keio University) ○Suzuki Kyosuke·Watanabe Hiroto·(Tokyo University) Ishioka Shun·(Keio University) Oaki Yuuya·(Tokyo University) Saitou Tsuguyuki·(Keio University) Imai Hiroaki\*

- 3N18 Thiophene oligomer/Elucidation of physical properties of iron-containing microparticle composites (Chiba University) ○Kashiwagi Kiho·Hoshino Katsuyoshi·Tsukada Satoru\*

**(15:00) Break**

**(15:20) (Session Chairs: 蔵岡 孝治)**

- 3N20 Colloidal synthesis of double perovskite nanocrystals for self-powered photodiodes (National Institute for Materials Science·Hokkaido University) HUANG Xiaoyu·(National Institute for Materials Science·Hokkaido University·Chuo University) ○SHIRAHATA NAOTO\*

- 3N21 Controlled InP/ZnS core/shell structure for enhanced optoelectronic performances (National Institute for Materials Science·Hokkaido University) NEMOTO Kazuhiro·(National Institute for Materials Science·Hokkaido University·Chuo University) ○SHIRAHATA Naoto

- 3N22 Advanced Evaluation Technique for Filler Dispersion in Resin Composites with High Carbon Nanotube Content (National Institute of Advanced Industrial Science and Technology) ○MATSUMOTO Naoyuki·NAKAJIMA Hideaki·MORIMOTO Takahiro·OKAZAKI Toshiya·HATA Kenji·KOKUBO Ken

**■■September 08 (Fri) (Room Q) ■■**

**14. The frontier of dielectric materials II ~Creation of functional materials and their applications towards a sustainable society~**

**ドメイン・トポロジカル欠陥**

**(9:00) (Session Chairs: 江原 祥隆)**

- 3Q01 Domain structure and phase transition in tensile-strained (Pb<sub>x</sub>Sr<sub>1-x</sub>)TiO<sub>3</sub> ultra-thin films (Nagoya University·Tokyo Institute of Technology) ○YAMADA Tomoaki·(Nagoya University) Yuan Xueyou·Ota Yuto·(National Institute for Materials Science) Shimizu Takao·(Tokyo Institute of Technology) Okamoto Kazuki·(Nagoya University) Yoshino Masahito·(Tokyo Institute of Technology) Funakubo Hiroshi·(Nagoya University) Nagasaki Takanori

- 3Q02 Domain Switching Behavior of Bulk BaTiO<sub>3</sub> Crystals at Room Temperature (Osaka University) ○SHIBAMOTO Takeshi·LI Yan·(Kyoto University) KASAI KOTA·(Osaka University·National Institute of Advanced Industrial Science and Technology) SHINOZAKI Kenji·(Osaka Electro-Communication University) TANIGAKI Kenichi·(Osaka University) HORIKAWA Keitaro·(Kyoto University) SHIMADA Takahiro·(Osaka University) NAKAMURA Atsutomo\*

- 3Q03 Electrocaloric effect in (Ba, Sr)TiO<sub>3</sub> near the ferroelectric phase transition temperature (Okayama University) ○Tanaka Yukiya·Teranishi Takashi\*·(National Institute for Materials Science) Iguchi Ryo·Uchida Ken-ichi·(Okayama University) Kondo Shinya·Kishimoto Akira



3Q04 ★ Frontier Ferroelectric Functions at the Nano- and Atomic Scales via Strain/Defect Engineering -Multiferroics to Polar Skyrmions (Kyoto University) ○SHIMADA Takahiro

**(10:40) Break**

**微構造解析**

**(11:00) (Session Chairs: 萩原 学)**

- 3Q07 Incommensurate structure and positive DC-bias characteristics in tetragonal tungsten bronze  $K_2(\text{La,Pr})\text{Nb}_5\text{O}_{15}$  (Murata Manufacturing Co., Ltd.) ○MURATA Tomoki (Nagoya Institute of Technology) URUSHIHARA Daisuke • ASAKA Toru • (Murata Manufacturing Co., Ltd.) HIROSE Sakyō
- 3Q08 ★ Atomic displacement in dielectric materials observed by X-ray fluorescence holography (Nagoya Institute of Technology) ○KIMURA Koji

**非鉛圧電応用**

**(13:20) (Session Chairs: 池田 潤)**

- 3Q14 Vibration energy harvesting and finite element analysis of  $(\text{Ba,Ca})(\text{Zr,Ti})\text{O}_3$  using piezoelectric and pyroelectric effects (Nagoya Institute of Technology) ○YAMAMOTO Ryota • (Friedrich-Alexander-Universität Erlangen-Nürnberg) SHCWARZ Michael • MERGHEIM Julia • (Nagoya Institute of Technology) KAKIMOTO Ken-ichi\*
- 3Q15  $(\text{Li,Na,K})\text{NbO}_3$  ceramic with core-shell structure and their application to multilayered piezoelectric acoustic elements. (TAIYO YUDEN CO., LTD) ○HATANO Keiichi • TSUKAGOSHI Koichi • ISHII SHIGEO • HAMADA Hiroshi

**MLCC・誘電材料**

**(14:00) (Session Chairs: 金田 和巳)**

- 3Q16 Methods for Controlling Dielectric Properties of  $(\text{Bi,Na})\text{TiO}_3$ - $\text{CaTiO}_3$  System (Murata Manufacturing Co., Ltd.) ○NOMURA Keisuke • HABU Daiki • IKEDA Jun • TANAKA Nobuhiko
- 3Q17 Morphotropic Phase Boundary of Ca-Doped Bismuth Sodium Titanate Ferroelectrics with Suppressed Bi Deficiency (Yamaguchi University • Keio University) ○FUJIMORI Hirotsuka\* • (Yamaguchi University) MICHIKATA Koki • YOSHIDA Keishiro
- 3Q18 ★ Development of Sustainable and Higher Functional Dielectric Materials for Multilayer Ceramic Capacitors (Murata Manufacturing Co., Ltd.) ○SUZUKI SHOICHIRO

■■September 08 (Fri) (Room R) ■■

**10. Material Design and Processing Design**

**合成プロセス**

**(9:00) (Session Chairs: 林 大和)**

- 3R01 ★ Quantitative Analysis on the Branching Structure of Polycarbosilane and its Effect on the Resulted SiC Fiber (Kureha Corporation) ○IUCHI Ryo • NAITO Ryota • SAITO Junki • GOTO Tatsuru • (Kureha America Inc.) YAMAKAWA Koji
- 3R03 Controlled Mechanochemical Process for Silicon Quantum Dots with Wavelength-tunable Photoluminescence (Nagoya Institute of Technology) ○XU Yuping • XIN Yunzi • KATO Kunihiko • SHIRAI Takashi\*
- 3R04 Design of integrated composite particles for compositional control of aerosol-deposited composite films. (Toyohashi university of technology) ○NAKAZONO Taisei • (National Institute of Technology, Numazu College) YOKOI Atsushi • (Toyohashi university of technology) Tan Wai Kian • KAWAMURA Go • MATSUDA Atsunori • MUTO Hiroyuki\*

**(10:20) Break**

**単結晶**

**(10:40) (Session Chairs: 木村 禎一)**

- 3R06 ★ Novel Single Crystal Growth Processing (Osaka University) ○IMANAKA Nobuhito

**3D プリンタ**

**(11:20) (Session Chairs: 木村 禎一)**

- 3R08 Exploration and observation of dissimilar metal joining processes by nanosecond pulsed power (Nagaoka University of Technology) ○MITA Wataru • FURUNO Hideto • SAITO Hiroyuki • SHEN Zhiming • NIIHARA Koichi • NAKAYMA Tadachika\*
- 3R09 Development of silica-based materials compatible with selective laser melting methods (Canon Inc.) ○Yoshioka Takuya • Oshima Kanako • Shimizu Yasushi • Yasui Nobuhiro

**層状化合物**

**(13:20) (Session Chairs: 笹井 亮)**

- 3R14 ★ Knoevenagel Condensation Reaction Using Acetate-intercalated Layered Yttrium Hydroxide Catalyst With Rapid Lift-up Property by Water (Chiba University) ○HARA Takayoshi

**薄膜(液相)**

**(14:00) (Session Chairs: 笹井 亮)**

- 3R16 Sol-gel coating of zirconia thin films on substrates with different thermal expansion coefficients and their magnetic properties (Keio University) ○NSHIDE Yutaro • (Daiichi Kigenso Kagaku Kogyo Co. Ltd.) ITOH Masahiro • KAMO Takahiro • NAKAJIMA Yasushi • (Keio University) FUJIHARA Shinobu • HAGIWARA Manabu\*

**触媒・ナノ粒子**

**(14:20) (Session Chairs: 笹井 亮)**

- 3R17 Investigation of Synthetic Conditions for Carbon-Supported Niobium Oxide Nanoparticle Catalysts to Improve Oxygen Reduction Reaction Activity (Osaka University) ○HASEGAWA Yuta • SEINO Satoshi\* • SHINYOSHI Naoki • UETAKE Yuta • (Yokohama National University) NAGAI Takaaki • MONDEN Ryuji • ISHIIHARA Akimitsu • (Osaka University) NAKAGAWA Takashi\*

**(14:40) Break**

**層状化合物**

**(15:00) (Session Chairs: 小島 隆)**

- 3R19 ★ Functional Design of Ion-Exchangeable Layered Inorganic Compounds for Specific Molecules/Ion Species Detection (Shimane University) ○SASAI Ryo

**液相・包摂****(15:40) (Session Chiars: 小島 隆)**

3R21 Synthesis of Si-doped C12A7 mayenite: Effect of anion encapsulation (Kyushu University) ○TAKIISHI Kanta・INADA Miki\*

**薄膜(スパッタ)****(16:00) (Session Chiars: 小島 隆)**

3R22 Preparation of Al-O/Fe multi-layered structure by PLD method (Nagasaki University) ○Kaku Hibiki・Yamashita Akihiro・Yanai Takeshi・Nakano Masaki\*・Fukunaga Hirotochi

3R23 Formation of copper oxide thin film by sputtering method using Cu<sub>2</sub>O target and change of target surface (Ishinomaki Senshu University) ○EHARA Takashi

3R24 総合討論

**■■September 08 (Fri) (Room T) ■■****05. Photoceramics - Synthesis, Functions and Applications of Optical and Colorful Ceramics-****カーボンドット****(13:20) (Session Chiars: 藤本 裕)**

3T14 Synthesis of Photoluminescent Apatite Particles through Thermochemical Reactions of Citric Acid (Nagaoka University of Technology) ○SHI Wanyu・(Nagaoka University of Technology・JSPS Research Fellow DC) NODA Daichi・(Nagaoka University of Technology) TAGAYA Motohiro\*

3T15 Effect of starting materials on fluorescent properties of carbon dots using simple microwave heating method (Kanto Gakuin University) ○SHIMIZU Yuto・HAMAGAMI Jun-ichi\*

**ガラス****(14:00) (Session Chiars: 藤本 裕)**3T16 Effect of Na<sup>+</sup> doping on the broadband NIR luminescence of Cr<sub>2</sub>O<sub>3</sub>-CaO-GeO<sub>2</sub> glass-ceramics phosphor (National Defense Academy) ○Satake Yutaro・(National Defense Academy) Nanai Yasushi\*・(National Defense Academy) Kitazawa Nobuaki\*3T17 Structural, mechanical and optical characterizations of Nd<sup>3+</sup>-doped TeO<sub>2</sub>-ZnO-Na<sub>2</sub>O glasses (Nagoya Institute of Technology) ○OHASHI JUN・HAYAKAWA TOMOKATU\*・(Limoges University) Le Masson Solal・Colas Maggy・Thomas Philippe**(14:40) Break****光熱変換****(15:00) (Session Chiars: 濱上 寿一)**

3T19 Optical absorption spectrum measurement of scattering samples using a photothermal spectroscopy method (Tohoku University) ○FUJIMOTO Yutaka・KAWAMOTO Hiroki・ASAI Keisuke

3T20 Photothermal conversion properties of W<sub>18</sub>O<sub>49</sub> nanoparticles with infrared absorption ability (Tohoku University) ○SHIMODA Takashi・HASEGAWA Takuya・OKAWA Ayahisa・YIN Shu\***■■September 08 (Fri) (Room U) ■■****07. Ceramic Sensors and Transducers -Device design for functional expression and process advancement and applications-****(9:20) (Session Chiars: 田村 真治)**

3U02 Modification of carbon nanotubes using nanosheet-type tin oxide and gas sensing properties. (National Institute of Advanced Industrial Science and Technology) ○CHOI Pil Gyu・MASUDA Yoshitake・TSURUTA Akihiro

3U03 Fe-site Partial Substitution Effect on VOC Selectivity of SmFeO<sub>3</sub> Semiconducting Sensor (Ehime University) ○MURAKI Masashi・MORI Masami・AONO Hiromichi・ITAGAKI Yoshiteru\*

3U04 Discrimination method for simulated food odors using semiconductive gas sensor array (National Institute of Advanced Industrial Science and Technology (AIST)) ○ITOH Toshio・CHOI Pil-Gyu・MASUDA Yoshitake・(Hokkaido Industrial Technology Center) YOSHIOKA Takeya・OGATA Yumi・SUGAWARA Tomoaki

**(10:20) Break****(10:40) (Session Chiars: 齋藤 紀子)**3U06 Catalytic Combustion-type H<sub>2</sub> Gas Sensor Applied Cerium Oxide Supported Europium Silicate (Osaka University) ○Sakurai Asuki・Tamura Shinji\*・Imanaka Nobuhito\*

3U07 Improvement in Sensing Properties of Solid-Electrolyte VOC Sensors by Structural Optimization of Ceria-based Sensing Electrodes (Nagasaki University) ○HAYASHI Hirofumi・UEDA Taro・HYODO Takeo\*・SHIMIZU Yasuhiro

3U08 Impedance Spectroscopy of (Ba,Ca)(Zr,Ti)O<sub>3</sub> - ZrO<sub>2</sub> composites (Nagoya Institute of Technology) ○Martin Alexander・Kato Naho・(Friedrich-Alexander-Universität Erlangen-Nürnberg) Webber Kyle G.・(Nagoya Institute of Technology) Kakimoto Ken-ichi

3U09 Effect of Interface Modification on Carbon Monoxide Detection Using Solid Electrolyte Gas Sensors (Kyushu University) ○NAKASHIMA KEISUKE・WATANABE KEN\*・MIKATA KENTO・SUEMATSU KOICHI・(MITSUI MINING &amp; SMELTING CO.) IDE SHINGO・(Kyushu University) SHIMANO KENGO

**■■September 08 (Fri) (Room V) ■■****13. Advanced Materials Synthesis Based on Aqueous Solution****層状物質****(9:00) (Session Chiars: 坂牛 健)**3V01 Alkaline hydrothermal synthesis of seaweed-like sodium titanate and its Cr<sup>3+</sup> sorption properties (Osaka University) ○GOTO Tomoyo・KONDO Yoshifumi・SEKINO Tohru

- 3V02 Wet chemical synthesis and fluorescent property evaluation of octacalcium phosphate with incorporated aromatic carboxylate ions (Tokyo Medical and Dental University) ○YOKOI Taishi (Osaka University) GOTO Tomoyo (Osaka University) SEKINO Tohru (Tokyo Medical and Dental University) SHIMABUKURO Masaya (Osaka University) KAWASHITA Masakazu

**(9:40) (Session Chairs: 岡田 健司)**

- 3V03 Nanostructure control and sorption properties of potassium titanates by hydrothermal synthesis (Osaka University) ○UMEMURA Takumu (Osaka University) GOTO Tomoyo (Osaka University) KONDO Yoshifumi (Osaka University) SEO Yeongjun (Osaka University) CHO Sung Hun (Osaka University) SEKINO Tohru (Osaka University)
- 3V04 Formation of zirconium phosphate film on zirconium metal by ionic liquid-containing phosphoric acid treatment (Kyushu Institute of Technology) ○MOMOTA Fuka (Kyushu Institute of Technology) NAKAMURA Jin (Kyushu Institute of Technology) MIYAZAKI Toshiki (Kyushu Institute of Technology)

**(10:20) Break**

**ナノシート**

**(10:40) (Session Chairs: 中村 仁)**

- 3V06 Bottom-up synthesis of titanate nanosheets with a euheedral shape by aqueous solution process (Gifu University) HIROSE Seiya (Gifu University) KONISHI Karin (Gifu University) NAKAGAWA Takuya (Gifu University) TAKAI-YAMASHITA Chika (Gifu University) OHYA Yutaka (Gifu University) ○BAN Takayuki (Gifu University)
- 3V07 Preparation and luminescent properties of exfoliated graphite nanosheet by acid-base reaction with Graphite Intercalation Compound (GIC) (Kobe University) ○SHIRAKI Hodaka (Kobe University) UCHINO Takashi (National Institute for Materials Science) ADACHI Yutaka (National Institute for Materials Science)

**(11:20) (Session Chairs: 坂牛 健)**

- 3V08 ★ Exploration of battery materials based on peculiar functionality of water (The University of Tokyo) ○YAMADA ATSUO (The University of Tokyo)

**(13:20) (Session Chairs: 後藤 知代)**

- 3V14 ★ Development of ceramic nanostructures using crystal growth in aqueous solution (National Institute of Advanced Industrial Science and Technology (AIST)) ○MASUDA Yoshitake (National Institute of Advanced Industrial Science and Technology (AIST))

**ナノ粒子**

**(14:00) (Session Chairs: 後藤 知代)**

- 3V16 Fabrication of Structured Metals and Ceramics by Stereolithography Using Concentrated Dispersions of Hybrid Nanoparticles (Hiroshima University) ○ASANOME Miki (Hiroshima University) TARUTANI Naoki (Osaka Metropolitan University) OKADA Kenji (Hiroshima University) TAKAHASHI Masahide (Hiroshima University) KATAGIRI Kiyofumi (Hiroshima University) INUMARU Kei (Hiroshima University)

**(14:20) (Session Chairs: 横井 太史)**

- 3V17 Control of photoluminescence characteristics of ZnO sol by photodissolution with UV light irradiation (Chiba University) ○ECHIGO Morio (Chiba University) KOJIMA Takashi (Chiba University) UEKAWA Naofumi (Chiba University)
- 3V18 Synthesis of nanocrystal dispersion of layered magnesium hydroxides and its evaluation of spinnability. (Osaka Metropolitan University) ○Amimoto Ayaka (Osaka Metropolitan University) Tokudome Yasuaki (Nagoya Institute of Technology) Ibayashi Shuta (Osaka Metropolitan University) Obata Akiko (Hiroshima University) Tarutani Naoki (Osaka Metropolitan University) Murata Hidenobu (Osaka Metropolitan University) Nakahira Atsushi (Osaka Metropolitan University)
- 3V19 Size control of Cu<sub>3</sub>VS<sub>4</sub> quantum dots by heating-up method (Hosei University) ○KOYASU Satoshi (Hosei University) OKUMURA Taichi (Hosei University) ISHIGAKI Takamasa (Hosei University)

**(15:20) Break**

**(15:40) (Session Chairs: 小安 智士)**

- 3V21 Synthesis of metals and inorganic compounds through thermal conversion of metal hydroxide salt nanoparticles. (Hiroshima University) ○TARUTANI Naoki (Hiroshima University) HIRAGI Yuka (Hiroshima University) AKASHI Kengo (Hiroshima University) KATAGIRI Kiyofumi (Hiroshima University) INUMARU Kei (Hiroshima University)

**配向・膜**

**(16:00) (Session Chairs: 小安 智士)**

- 3V22 Preparation of ZnO thin film with oriented crystallites using Zn<sup>2+</sup>-M<sup>3+</sup> layered double hydroxide sol (Chiba university) ○Okada Yuya (Chiba University) Mitsuhashi Hiroki (Chiba University) Kojima Takashi (Chiba University) Uekawa Naofumi (Chiba University)

**(16:20) (Session Chairs: 樽谷 直紀)**

- 3V23 Macro- and microscale structural control of oriented aragonite sheets by a polyamine method. (Keio University) ○TAKASHINA Kohei (Keio University) YASUMOTO Ko (Keio University) WATANABE HIROTO (Keio University) OAKI Yuya (Keio University) IMAI Hiroaki (Keio University)
- 3V24 Fabrication of metal-organic framework (MOF)-based separation membranes by modulator-assisted morphological control (Osaka Metropolitan University) ○TANIMOTO Yutaka (Osaka Metropolitan University) OKADA Kenji (Osaka Metropolitan University) FUKATSU Arisa (Osaka Metropolitan University) TAKAHASHI Masahide (Osaka Metropolitan University)

**■■September 06 (Wed) (Room P) ■■**

**14:00-16:00**

**06. Fundamental Research and Applied Development of Ceramic Materials for Energy Conversion, Storage and Transportation**

- 1PC01pm Discovery of novel perovskite type material and super proton conduction within Norby Gap (Tokyo Institute of Technology) ○Saito Kei (Tokyo Institute of Technology) Yashima Masatomo (Tokyo Institute of Technology)
- 1PC02pm Approach to single phase synthesis of proton-conducting BaZr<sub>0.4</sub>Ce<sub>0.4</sub>Y<sub>0.1</sub>Yb<sub>0.1</sub>O<sub>3</sub> (Tokushima University) ○INUI Yuta (Tokushima University) UDA Ren (Tokushima University) MURAI Kei-ichiro (Tokushima University) MORIGA Toshihiro (Central Research Institute of Electric Power Industry) MORI Masashi (Central Research Institute of Electric Power Industry) MATSUDA Malik Ryuma (Central Research Institute of Electric Power Industry)
- 1PC03pm Effect of Ni content on SOEC cathode properties of Ni-GDC (Ehime University) ○KAKUDA Shion (Ehime University) AONO Hiromichi (Ehime University) ITAGAKI Yoshiteru (Ehime University)
- 1PC04pm Synthesis of λ-Ti<sub>3</sub>O<sub>5</sub> using Titanium Chloride as Starting Material (University of Tsukuba) ○Fadilla Akhmad Fadel (University of Tsukuba) Fujisawa Akito (University of Tsukuba) Jia Fangda (University of Tsukuba) Ohkoshi Shin-ichi (University of Tsukuba) Tokoro Hiroko (University of Tsukuba)
- 1PC05pm Thermoelectric properties on the effect of mixing ratio of SrLaTiO<sub>3</sub> and BiNaTiO<sub>3</sub> (Chiba University) ○KASHIWAGI So (Chiba University) NISHIYAMA Shin (Chiba University)
- 1PC06pm Preparation of lithium silicate-coated graphite and evaluation of battery characteristics (Osaka Research Institute of Industrial Science and Technology) ○SONOMURA Hirosuke (Osaka Research Institute of Industrial Science and Technology) Ozaki Tomoatsu (Osaka Research Institute of Industrial Science and Technology) Hasegawa Yasunori (Osaka Research Institute of Industrial Science and Technology) Sakurai Yoshiaki (Osaka Research Institute of Industrial Science and Technology)
- 1PC07pm Effect of Zr substitution for the properties of garnet-type solid electrolyte Li<sub>6</sub>SrLa<sub>2</sub>Bi<sub>2</sub>O<sub>12</sub> (Toyohashi University of Technology) ○AKIMOTO Keigo (Toyohashi University of Technology) MURAMOTO Yuta (Toyohashi University of Technology) HORI Akio (Toyohashi University of Technology) INADA Ryoji (Toyohashi University of Technology)

- 1PC08pm Characterization of  $\text{Li}_{1.5}\text{Al}_{0.5}\text{Ge}_{1.5}(\text{PO}_4)_3$  solid electrolyte fabricated by cold sintering process (Toyohashi University of Technology) ○Kurahashi Kaito·Oizumi Kanta·Inada Ryoji\*
- 1PC09pm The effect of multiple elemental substitution on the charge-discharge reaction mechanism of spinel-type  $\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$  (Shinshu University) ○NARUMI Shunsuke·NAGAMINE Masayuki·ZETTSU Nobuyuki\*

### 23. Measurement and Visualization Technology for Trans-scale Analysis and Process Informatics of Ceramics

- 1PE01pm Characterization of  $\text{Li-M-Ti-O:Mn}^{4+}$  ( $M = \text{Ta}$  or  $\text{Nb}$ ) phosphor under various sintering atmospheres by XAFS (Toyohashi University of Technology) ○SHIRAKAWA Fumiki·NAKANO Hiromi\*
- 1PE02pm Effect of MgO and CaO addition on sintering and mechanical properties of 3Y-TZP (Shinshu University) ○ASAKRA Yukihide·TARUTA Seichi\*
- 1PE03pm Effect of dispersibility of sintering aid on microstructure of silicon nitride sheet body (Nagaoka National College of Technology) ○Okubo Taketo·Tanaka Satoshi\*
- 1PE04pm Effect of powder mixture on both low temperature sintering and microstructure of garnet-type solid electrolyte ceramics (Nagaoka University of Technology) ○HIRATA Takahiro·TANAKA Satoshi\*

### 04. Random Materials –Function and Physical Property Correlated with the Structure-

- 1PJ01pm Spectroscopic study of the interaction between boson peak dynamics and terahertz light in hydrogen-bonded glass former glycerol (University of Tsukuba) ○KYOTANI Dan·OH Soo Han·(Tokyo Institute of Technology) KITANI Suguru·(Ritsumeikan University) FUJII Yasuhiro·(University of Tsukuba) MORI Tatsuya\*
- 1PJ02pm Thin film formation and glass / anode assembly evaluation of high-concentration phosphate glasses (Nagoya Institute of Technology) ○SEKIGUCHI Yoshiki·ANZAWA Nobutake·KONDO Haruka·DAIKO Yusuke\*
- 1PJ03pm  $\text{Na}^+/\text{H}^+$  ion exchange in high-concentration phosphate glass and structural evaluation (Nagoya Institute of Technology) ○HATTORI Kakeru·Anzawa Nobutake·KonKondo Haruka·Daiko Yusuke\*·(Kyoto University) Shimizu Masahiro
- 1PJ04pm Data Analysis of Low-Melting Phosphate Glasses Using Database (National Institute of Advanced Industrial Science and Technology) ○MASAI Hirokazu·MIHARA Toshiyuki·KINTAKA Kenji
- 1PJ05pm Repetitive afterglow by pulsed near-infrared irradiation toward biological temperature sensing (Tohoku University) OHASHI Masaharu·○TAKAHASHI Yoshihiro·TERAKADO Nobuaki·(Sendai Medical Center) ONOUE Noriko·SHINOZAKI Tsuyoshi·(Tohoku University) FUJIWARA Takumi
- 1PJ06pm The effect of rapid heating and cooling by laser scanning on the homogenization behavior of phase-separated  $\text{Na}_2\text{O-B}_2\text{O}_3\text{-SiO}_2$  glass plate (Tokyo Institute of Technology) ○Tomita Kana\*·Kishi Tetsuo·Yano Tetsuji
- 1PJ07pm Evaluation of adhesion strength of Ag and glass and consideration of adhesion mechanism (Kyoto Institute of Technology) ○TEHARA Takuma·WAKASUGI Takashi\*
- 1PJ08pm Glaze Blackening Phenomenon Using Low Melting Glass (Kyoto Institute of Technology) ○NODA Yuuki·WAKASUGI Takashi\*

### 14. The frontier of dielectric materials II ~Creation of functional materials and their applications towards a sustainable society~

- 1PQ01pm Fabrication of  $\text{BiFeO}_3\text{-(Bi}_{1/2}\text{K}_{1/2})\text{TiO}_3$  lead-free piezoelectric ceramics via low-temperature reactive sintering of solution-processed nanoparticles (Keio University) ○HASHIMOTO Tomoki·FUJIHARA Shinobu·HAGIWARA Manabu\*
- 1PQ02pm Effect of (Al + Nb) co-doping on dielectric properties of  $\text{TiO}_2$  ceramics (Keio University) ○Kawasaki Mitsuha·(Nagoya University) Kuwano Taro·Taniguchi Hiroki·(Keio University) Fujihara Shinobu·Hagiwara Manabu\*
- 1PQ03pm Impact of chemical pressure on electric-field-induced phase transition in antiferroelectric  $\text{NaNbO}_3$  (Kumamoto University) ○ASO Seiyu·MATSUO Hiroki·NOGUCHI Yuji\*·(Japan Atomic Energy Agency) YONEDA Yasuhiro
- 1PQ04pm Fabrication conditions of KNN-based piezoelectric single crystals by solid-state crystal growth method (University of Yamanashi) ○AMIKURA Takuto·FUJII Ichiro\*·UENO Shintaro·WADA Satoshi
- 1PQ06pm Stabilization of orthorhombic phase with ferroelectricity on CSD-derived zirconium oxide films (Sophia University) ○KURIBAYASHI Yuta·YOKOTA Yuki\*·UCHIDA Hiroshi\*
- 1PQ07pm Phase-field simulation of polar skyrmion lattice and its lattice defect structures in  $\text{PbTiO}_3$  nano-thin film (Kyoto University) ○KASAI Kohta·NOJIMA Takashi·ITANO Toya·MINAMI Susumu·SHIMADA Takahiro\*
- 1PQ08pm First-principles Study of the Mechanical Deformation Behavior of Ferroelectric  $\text{PbTiO}_3$  under Finite Electric Field (Kyoto University) ○NAKAYAMA Tomohiro·MINAMI Susumu\*·SHIMADA Takahiro\*
- 1PQ09pm Analysis of phase transition behavior in  $\text{Hf}_{0.5}\text{Zr}_{0.5}\text{O}_2$  nanoparticles (Kyushu University) NOGUCHI Daichi·MITANI Kaito\*·(Kumamoto University) ○SATO Yukio
- 1PQ10pm Effects of starting material  $\text{Nb}_2\text{O}_5$  for sinterability of  $(\text{K}_{0.5}\text{Na}_{0.5})\text{NbO}_3$  ceramics (Tokyo University of Science) ○SHOJI Takuma·TAKAGI Yuka·NAGATA Hajime\*

### 10. Material Design and Processing Design

- 1PR01pm Structure-directing synthesis of  $\text{CuO/SiO}_2$  composites using carbon nitride (Okayama University) ○TAKEUCHI Yuki·OHKUBO Takahiro\*
- 1PR03pm Preparation of dense ceramic thin films on plastic substrates: mesoporous release layers in the sol-gel transfer technique (Kansai University) ○YAMAMOTO Yushi·KOZUKA Hiromitsu\*
- 1PR04pm Properties and adhesion of organic-inorganic hybrid films prepared on glass substrates (Kansai University) ○MIYOSHI Ryota·KOZUKA Hiromitsu\*
- 1PR05pm Effects of hybridization with hydroxypropyl cellulose on the optical, mechanical and chemical properties and uncracking critical thickness of titania gel films (Kansai University) ○KITA Yuki·KOZUKA Hiromitsu\*
- 1PR06pm Luminescence properties of  $\text{ScAlMgO}_4$  crystal grown by the floating zone method (NAIST) ○YANAGIDA Takayuki·(Shizuoka University) Koshimizu Masanori·(NAIST) Kato Takumi·Nakauchi Daisuke·Kawaguchi Noriaki
- 1PR07pm Tb-doped  $\text{CaHfO}_3$  Single Crystals Synthesized by the FZ Method and Evaluation of Radioluminescence Properties (Nara Institute of Science and Technology) ○ENDO Yusuke·ICHIBA Kensei·NAKAUCHI Daisuke·KATO Takumi·KAWAGUCHI Noriaki·YANAGIDA Takayuki\*·(National Institute of Technology, Fukui College) FUKUSHIMA Hiroyuki·(Kyusyu University) WATANABE Kenichi

- 1PR08pm Near Infrared Scintillation Properties of Yb-doped Bi<sub>4</sub>Si<sub>3</sub>O<sub>12</sub> Single Crystals Synthesized by Floating Zone Method (Nara Institute of Science and Technology) ○ICHIBA Kensei•OKAZAKI Kai•KATO Takumi•NAKUCHI Daisuke•KAWAGUCHI Noriaki•YANAGIDA Takayuki\*
- 1PR09pm Preparation of LiCa<sub>3</sub>MgV<sub>3</sub>O<sub>12</sub> and LiCa<sub>3</sub>ZnV<sub>3</sub>O<sub>12</sub> ceramics and evaluation of their radioluminescence properties (Nara Institute of Science and Technology) ○KAWAGUCHI Noriaki•OKAZAKI Kai•KATO Takumi•NAKAUCHI Daisuke•YANAGIDA Takayuki
- 1PR10pm Scintillation properties of BaCl<sub>2</sub>:Ce transparent ceramics prepared by the SPS method (Nara Institute of Science and Technology) ○Otake Shota•Sakaguchi Hiroataka•Yoshikawa Yuta•Kato Takumi•Nakauchi Daisuke•Kawaguchi Noriaki•Yanagida Takayuki\*
- 1PR11pm Synthesis and scintillation property of APb<sub>2</sub>Cl<sub>5</sub> (A=K, Rb) (Nara Institute of Science and Technology) ○MIYAZAKI Keiichiro•NAKAUCHI Daisuke•KATO Takumi•KAWAGUCHI Noriaki•YANAGIDA Takayuki\*
- 1PR12pm Radiation-induced scintillation properties of (K,Rb)<sub>2</sub>CuBr<sub>3</sub> single crystal (Nara Institute of Science and Technology) ○Yamabayashi Keishi•Okazaki Kai•Nakauchi Daisuke•Kato Takumi•Kawaguchi Noriaki•Yanagida Takayuki\*
- 1PR13pm Radiation-induced luminescence properties of Nd-doped CsI single crystals synthesized by the vertical Bridgman-Stockbarger method (Nara Institute of Science and Technology) ○TAKASE Shunta•MIYAZAKI Keiichiro•NAKAUCHI Daisuke•KATO Takumi•KAWAGUCHI Noriaki•YANAGIDA Takayuki\*
- 1PR14pm Thermoluminescence properties in Tb doped Na<sub>2</sub>O-B<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub> glasses prepared by melt quenching method (Nara Institute of Science and Technology) ○RIM Shiyu•NISHIKAWA Akihiro•KATO Takumi•NAKAUCHI Daisuke•KAWAGUCHI Noriaki•YANAGIDA Takayuki\*
- 1PR15pm Evaluation of Radiation-induced Luminescence Properties of Ba<sub>3</sub>Y(PO<sub>4</sub>)<sub>3</sub>:Tb Single Crystals Synthesized by FZ Method (NAIST) ○EZAWA Haruaki•TAKEBUCHI Yuma•KATO Takumi•NAKAUCHI Daisuke•KAWAGUCHI Noriaki•YANAGIDA Takayuki\*
- 1PR16pm Radio-photoluminescence properties in Ag-doped Cs<sub>2</sub>O-BaO-Al<sub>2</sub>O<sub>3</sub>-P<sub>2</sub>O<sub>5</sub> glasses (Nara Institute of Science and Technology) ○Nishikawa Akihiro•(Tokyo University of Science) Shiratori Daiki•(Nara Institute of Science and Technology) Kato Takumi•Nakauchi Daisuke•Kawaguchi Noriaki•Yanagida Takayuki\*
- 1PR17pm High Thermal Conductivity of β-Si<sub>3</sub>N<sub>4</sub>/poly-vinylidene fluoride Composites by Multifracal Material texture (Tokyo City University) ○OGIYA Taito•KONEMURA Ryo•(Tokyo Institute of Technology) KITANI Suguru•(Tokyo City University) SATO Yoshihiro•(Tokyo Institute of Technology) KAWAJI Hitoshi•(Tokyo City University) MUNAKATA Fumio\*

## ■ ■ September 07 (Thu) (Room P) ■ ■

10:00-12:00

### 03. Fundamental science and new developments in ceramic-based biomaterials - Design of Novel Function for Biomaterials in Biomedical and Dental Engineering

- 2PA01am Property of HAP with TiSi<sub>2</sub> ceramics (Tokai University) ○Wei Suliang•Matsushita Junichi\*

### 18. Advanced science of engineering ceramics -New development of structural and interfacial control and analytical techniques-

- 2PD01am Investigation of Insert Metal Elements in Liquid Phase Diffusion Bonding of SiC Ceramics (Osaka Research Institute of Industrial Science and Technology) ○OZAKI Tomoatsu•(Osaka Metropolitan University) TSUDA Hiroshi•MORI Shigeo
- 2PD02am Observation of Crystallization and Formation Process of Secondary Amorphous Phase in Mullite Fiber Using TEM (Tohoku University) ○SHOJI Masaya•NIKAIDO Yuto•YOSHIMI Kyosuke\*(MAFTEC Co., Ltd) SASAKI Toshiaki•KOBAYASHI Tomoyuki•HATA Yusaku
- 2PD03am Melting and solidification of Al<sub>2</sub>O<sub>3</sub> by electron-beam irradiation for powder-bed fusion type additive manufacturing process. (Osaka University) ○KAMENO Wataru•(Osaka University•Osaka University AM Center) OKUGAWA Masayuki\*(Osaka University•Osaka University Research Center for Ultra-High Voltage Electron Microscopy) SATO Kazuhisa•(Osaka University•Osaka University AM Center) KOIZUMI Yuichiro\*•NAKANO Takayoshi
- 2PD04am Pressureless rapid sintering of non-oxide ceramics assisted with electromagnetic induction (Tokyo Institute of Technology) ○Gubarevich Anna•Homma Gen•Yoshida Alin•Yoshida Katsumi
- 2PD05am Fabrication and Characterization of Thin Films on Powder by Atmospheric Pressure Plasma and Spiral Flow (Creative Coatings) ○Miyamoto So•Sakamoto Hitoshi•Sato Eiji
- 2PD06am Electrochemical Reaction Mechanism of TiC Ceramics and Their Crack Healing at Room Temperature (Osaka University) ○LIU Jinyu•SEO Yeongjun•CHO Sung Hun•GOTO Tomoyo•KONDO Yoshifumi•SEKINO Tohru\*

### 22. Frontier of next generation environmental ceramic materials

- 2PG01am Preparation of Bentonite-Porous Silica Composite and Observation of its Pores (Nikon Corporation) ○SUZUKI Ryoko
- 2PG02am Synthesis of Ni-Co bimetallic nanoparticles derived from direct growth of a phyllosilicate on silica surfaces (Shinshu University) ○Nakamura Ryuunosuke•Okada Tomohiko\*
- 2PG03am Fabrication of iron oxide nanostructures and evaluation of photoelectrochemical and Cr(VI) removal performance (Toyohashi University of Technology) ○Taniguchi Yuri•Tan Wai Kian•Muto Hiroyuki•Matsuda Atsunori•Kawamura Go\*

### 13. Advanced Materials Synthesis Based on Aquesou Solution

- 2PV01am Investigation of zinc oxide nanostructures formation process for controlling photoelectrode properties (Toyohashi University of Technology) ○KATO Akito•ABOUELELA Marwa•(National Institute for Materials Science) OZBILGIN Irem Nur Gamze•SUZUKI Tohru•UCHIKOSHI Tetsuo•(Toyohashi University of Technology) TAN Wai Kian•MUTO Hiroyuki•MATSUDA Atsunori•KAWAMURA Go\*
- 2PV02am Enhancement of visible light sensitivity by Cu<sup>2+</sup> adsorption on peroxo-modified nanostructured titania (Osaka University) ○NISHIDA Hisataka•PARK Hyunsu•HAN Do Hyung•KONDO Yoshifumi•CHO Sunghun•GOTO Tomoyo•SEKINO Tohru
- 2PV03am Rapid Synthesis of Cerium Oxide Nanoparticles using a Microwave-Assisted Hydrothermal Process (Sophia University) ○JIN XIN•Yokota Yukie•Uchida Hiroshi\*
- 2PV04am Polarization properties in a magnetic field of hexaferrites synthesized by polymerizable complex method (University of Hyogo) ○KIKUCHI Takeyuki•KOBUNE Masafumi•(Okayama University) NAKANISHI Makoto•FUJII Tatsuo

14:00-16:00

### 08. Materials science of inorganic compounds utilizing elemental/structural diversities

- 2PB01pm Electrical transport properties of rock-salt structured Nb(O, N) epitaxial thin films (Tohoku University) ○CHO Yasumichi·KAMINAGA Kenichi\*·MARUYAMA Shingo\*·MATSUMOTO Yuji\*
- 2PB02pm KSbF<sub>4</sub> solid-state synthesis route conversion by KF milling (Hokkaido University) ○HISASUE Ryuku·MIURA Akira\*·(Tokyo Metropolitan University) YAMASHITA Aichi·MIZUGUCHI Yoshikazu·(Hiroshima University) MORIYOSHI Chikako·(Hokkaido University) TADANAGA Kiyoharu\*
- 2PB03pm Emergence of superconductivity induced via lattice relaxation in rock-salt structured thin film NbO (Tohoku University) ○Kimura Rintaro·Cho Yasumichi·Kaminaga Kenichi\*·Maruyama Shingo\*·Matsumoto Yuji\*
- 2PB04pm Negative thermal expansion mechanism of ZnNCN (Hokkaido University) ○NAGAI Taichi·MASUBUCHI Yuji\*·HIGUCHI Mikio·MIURA Akira·(Tokyo Institute of Technology) YAMAMOTO Takafumi
- 2PB05pm Catalyst activity of perovskite-type oxynitrides for electrochemical nitrogen reduction reaction (Hokkaido University) ○KUSANO Haruka·MASUBUCHI Yuji\*·HIGUCHI Mikio
- 2PB06pm Pressure-induced structural phase transition of (Ba<sub>0.9</sub>M<sub>0.1</sub>)NCN (M = Ca, Sr) (Hokkaido University) ○YAMAMOTO Yuzuki·MASUBUCHI Yuji\*·SHINOZAKI Ayako·HIGUCHI Mikio
- 2PB07pm The rare-earth substitution, crystal structure, and magnetic properties of one-dimensional PbMn<sub>2</sub>Ni<sub>6</sub>Te<sub>3</sub>O<sub>18</sub>-related compounds (Toho University) ○DOI Yoshihiro·Suzuki Kento·(Hokkaido University) Uchida Yu
- 2PB08pm Crystal structure and fluoride ion conduction of Bi<sub>0.9</sub>Pb<sub>0.1</sub>SF<sub>0.9</sub> (Ritsumeikan University) ○ITO Yukino·ZHONG Chengchao·Tachibana Shintaro·Orikasa Yuki\*
- 2PB09pm The magnetic properties of ordered perovskite manganite NdBa(Mn<sub>1-x</sub>Cr<sub>x</sub>)<sub>2</sub>O<sub>6</sub> (Toho University) SHIMIZU Kanta·HITOMI Rika·MIYAZAKI Syusuke·○AKAHOSHI Daisuke
- 2PB10pm Crystal structure analysis and ionic conduction property evaluation of Ba<sub>4</sub>Bi<sub>3</sub>F<sub>17</sub> (Ritsumeikan University) ○HIRAKAWA Saya·SHIMODA Keiji\*·ZHONG Chengchao\*·INADA Yasuhiro\*
- 2PB11pm Structural Transformation in LnHS with Coordination Change between an S-Centered Octahedron and Trigonal Prism (Kyoto University) ○Ubuakta Hiroki·Kato Daich·Kitade Shougo·Broux Thibault·Tassel Cedric·(RWTH Aachen University) Schnieders David·(RWTH Aachen University·Shenzhen Polytechnic) Dronsowski Richard·(Kyoto University) Kageyama Hiroshi\*
- 2PB12pm Discovery of New Sillén Oxychloride and High Oxide Ion Conduction (Tokyo Institute of Technology) ○UENO Nachi·YAGUCHI Hiroshi·FUJII Kotaro·YASHIMA Masatomo\*
- 2PB13pm Microstructure and charge-discharge mechanism of a Li<sub>2</sub>S-V<sub>2</sub>S<sub>3</sub>-LiI positive electrode for all-solid-state lithium-ion batteries (Osaka Metropolitan University) ○OHSAKI Masato·TUKASAKI Hirofumi\*·NAKAJIMA Hiroshi\*·SHIGEDOMI Tatsuki·SAKUDA Atsushi·HAYASHI Akitoshi·MORI Shigeo\*
- 2PB14pm Synthesis of Aurivillius-type oxyfluoride Bi<sub>2</sub>MO<sub>3</sub>F(M: Nb, Ta) using amorphous metal complex method (Okayama University of Science) ○Hamada Renge·sato yasushi\*·Osak Yoshiki·(Osaka University) Kakihana Masato
- 2PB15pm Study of synthesis method for gallium substituted tetratitanium heptoxide (The University of Tsukuba) ○KUBOTA Tomoko·SEIKI Riku·FUJISAWA Akito·Akhmad Fadel Fadilla·(The University of Tokyo) OHKOSHI Shin-Ichi·(The University of Tsukuba) TOKORO Hiroko\*
- 2PB16pm Synthesis of chromium substituted tetratitanium heptoxide (The University of Tsukuba) ○SEIKI Riku·KUBOTA Tomoko·FUJISAWA Akito·FADILLA Akhmad Fadel·TOKORO Hiroko\*·(The University of Tokyo) OHKOSHI SHIN-ICHI
- 2PB17pm High-pure synthesis of perovskite oxynitrides LaMO<sub>2</sub>N (M:Zr, Hf) by reductive ammonolysis using active metal and amorphous oxide precursor (Okayama University of Science) ○sakinaga kazuya·fukuda makoto·satou yasusi\*·(Osaka University) kakihana masato·(Hokkaido University) masubuchi yuji

## 17. Advanced Structure Science and Analytical Techniques

- 2PF01pm Preparation of *b*-axis-aligned CaAl<sub>4</sub>O<sub>7</sub> polycrystal by slip casting in a high magnetic field and microtexture analysis by EBSD (Nagoya Institute of Technology) ○MIYASAWA Aya·NAKAJIMA Fumiya·URUSHIHARA Daisuke·ASAKA Toru·FUKUDA Koichiro\*·(National Institute for Materials Science) SUZUKI Tohru
- 2PF02pm Accurate determination of atomic structure and chemical composition of single crystal using the Information criterion (National Institute of Advanced Industrial Science and Technology) ○GOTOH Yoshito·FUJIHISA Hiroshi
- 2PF03pm Mechanism elucidation of negative thermal expansion in monoclinic Cu<sub>2</sub>P<sub>2</sub>O<sub>7</sub>: A first-principles lattice-dynamics study (Tokyo Institute of Technology) ○NAGAMATSU Kaede·Mochizuki Yasuhide\*·Koiso Hiroki·Isobe Toshihiro·Nakajima Akira
- 2PF04pm Stable surface structure exploration and the band positions of diamond structures from first principles (Tokyo Institute of Technology) ○Miyako Yuki·Mochizuki yasuhide\*·Isobe Toshihiro·nakajima Akira
- 2PF05pm O K-edge simulations of Yb silicates and related materials (Japan Fine Ceramics Center) ○OGAWA Takafumi·(University of Tokyo) Miao Bin·Wei Jiake·Feng Bin·Shibata Naoya·(Japan Fine Ceramics Center) Matsudaira Tsuneaki·Kitaoka Satoshi
- 2PF06pm Effect and Crystal Structure Analysis of Fluorine Incorporation into Perovskite OER Catalysts (Ritsumeikan University) ○SUGIMURA Ayane·SIBATA Daisuke·MORIMOTO Mayu·INADA Yasuhiro·Zhong Chengchao·SHIMODA Keiji·OKAZAKI Ken-ichi·ORIKASA Yuki\*
- 2PF07pm Electrical and structural properties of Bi<sub>3</sub>GaSb<sub>2</sub>O<sub>11</sub> at high temperatures (Tokyo Institute of Technology) ○Matsuzaki Kohei·Zhang Wenrui·Fujii Kotaro·Saito Kei·Yashima Masatomo\*
- 2PF08pm Asynchronous and synchronous serial communication and other tips for diffractometer control (Comprehensive Research Organization for Science and Society) ○SAKAKURA Terutoshi·(High Energy Accelerator Research Organization) SAGAYAMA Hajime

## 01. informatics applications in ceramic research

- 2PJ01pm Enhancement of flow process development for ceramic nanoparticle synthesis using machine learning (National Institute of Advanced Industrial Science and Technology) ○ONO Takumi·TAKEBAYASHI Yoshihiro·SUE Kiwamu

## 24. Crystal Science - New development of crystal growth technology and materials research -

- 2PK01pm Fabrication of Gallium Oxyhydroxide Films by CBD Method with (NH<sub>4</sub>)<sub>3</sub>GaF<sub>6</sub> and Their Conversion to Gallium Oxide Films by Heat Treatment (Meiji University) ○SAITO Takeru·WAGATA Hajime\*
- 2PK02pm Fabrication of ZnO Films by Non-Seed CBD with Two-Step Concentration Control and Investigation of Effects of Ammonia Concentration on Their Film Structures (Meiji University) ○ISHIZAWA NAOKI·(Meiji University) WAGATA HAJIME\*
- 2PK03pm Correlation between crystallographic properties and water-splitting performance of (oxy)nitrides by machine learning analyses using spectral feature values (Shinshu University) ○YAMADA Musashi·YAMADA Tetsuya·HAYASHI Fumitaka·TESHIMA Katsuya\*

## 19. Green Processing – Innovation of Functional Ceramics for Realization of the SDGs

- 2PM01pm Synthesis and Magnetic Properties of Ferrite Silica Composite (Nagoya Institute of Technology) ○oyabu reiichiro•adachi nobuyasu\*
- 2PM02pm Adsorption of Polystyrene Particles on MgAl type Layered Double Hydroxide (LDH) Film (Ehime University) ○Fukugaichi Satoru•Kurusu Shion•Yamashita Natsuki•Yamada Taisei•Aono Hiromichi
- 2PM03pm Preparation of Fe complex- encapsulated mesoporous zeolite active for benzene oxidation (Ehime University) ○YAMAGUCHI Syuhei•ISHIDA Yuito•KOGA Hitomu•YAHIRO Hidenori
- 2PM04pm Improvement of Tunneling Magneto-Resistance effect for Co-Ta<sub>2</sub>O<sub>5</sub> nano-composite films by annealing after deposition (Tohoku University) ○CHEN Yu-Ting•(Tohoku University (TDK Co.)) KIMURA Moe•(Tohoku University•DENJIKEN) OHNUMA Shigehiro•(DENJIKEN) KOBAYASHI Nobukiyo•(Tohoku University) MASUMOTO Hiroshi\*
- 2PM05pm Chemical vapor deposition of free-standing hafnium dioxide thick-film phosphor (Yokohama National University) ○Hashimoto Yuka•Ito Akihiko\*
- 2PM07pm Synthesis and Characterization of Ferrite-Silica Aerogel Composite Porous Materials (Nagoya Institute of Technology) ○NAGAYA Kantaro•ADACHI Nobuyasu\*

## 16. Multidisciplinary development of oxoate materials science and technology

- 2PU01pm Effect of pH on the preparation of novel white pigment by sonochemical reaction of zinc oxide and phosphoric acid (Kyoto Prefectural University Graduate School) ○HOTTA YUMA Hotta•Onoda Hiroaki\*
- 2PU02pm Synthesis of novel inorganic phosphate red pigments based on natural ore “Triphylite” composition (Kyoto Prefectural University) ○ONODA Hiroaki•MATSUBARA Mayu
- 2PU03pm Cation adsorption properties of inorganic ion exchanger Ivanyukite 2 (University of Hyogo) ○Harukawa Ryo•Nishioka Hiroshi\*
- 2PU04pm Low-temperature synthesis of lead titanate films using microwave-assisted hydrothermal deposition (Sophia University) ○NOJI Kohei•YOKOTA Yuki•UCHIDA Hiroshi\*
- 2PU05pm Synthesis and evaluation of potassium titanate from industrial waste (University of Hyogo) ○Fukumoto Kenta•Nisioka Hiroshi\*

## ■ ■ September 08 (Fri) (Room P) ■ ■

10:00-12:00

## 11. Evolution of ceramic powder processing: toward the harmony with DX based society

- 3PN01am Characterization of alumina granules prepared by spray freeze granulation equipment implementing ultrasonic nozzles (PRECI CO., LTD.) ○KAWAGUCHI Shinya•KOBAYASHI Yusuke•MISUMI Yuichi•(National Institute of Advanced Industrial Science and Technology) KONDO Naoki•(Yokohama National University) TATAMI Junichi
- 3PN02am Observation of particle size attenuation of granule bodies using time-domain laser diffraction measurements and characterization from the particle disintegration system. (Preci Co., Ltd.) ○MISUMI Yuichi•KAWAGUCHI Shinya•KOBAYASHI Yusuke•(Malvern Panalytical, division of Spectris Co., Ltd.) SASAKURA Daisuke
- 3PN03am Sintered ceramics with hollow structure (Sumitomo Osaka Cement Company, Limited) ○Inui Satoyoshi•Otsuka Takeshi•Ichiyoshi Taku

## 99. General session

- 3PP01am Electrochemically Deposited Nanocomposite Films using Hydrophilized CuInS<sub>2</sub>/ZnS Fluorescent Quantum Dots in a Water System (Keio University) ○MORIMOTO Asshu•ISO Yoshiki\*•ISOBE Tetsuhiko\*

## 05. Photoceramics - Synthesis, Functions and Applications of Optical and Colorful Ceramics-

- 3PT01am Enhancement of photoluminescence intensity by energy transfer of P-doped Ca<sub>2</sub>SiO<sub>4</sub> Phosphor (Toyohashi University of Technology) ○HIGASHIDE Atsushi•NAKANO Hiromi\*
- 3PT02am Thermoluminescence properties of rare earth ion-doped B<sub>2</sub>O<sub>3</sub>-Na<sub>2</sub>O-CaO-P<sub>2</sub>O<sub>5</sub> glasses after neutron irradiation (Tohoku University) ○YAMAGUCHI HIROTO•KAWAMOTO HIROKI•FUJIMOTO YUTAKA•(Shizuoka University) KOSHIMIZU MASANORI•(Kindai University) WAKABAYASHI GENICHIRO•(Tohoku University) ASAI KEISUKE\*
- 3PT03am Effect of Gd substitution on luminescence intensity and emission wavelength of oxide upconversion phosphors (Tokai University) ○TERASHIMA Tomoya•TOMITA Koji\*•(Okayama University of Science) SATO Yasushi•(Nagoya University) KOBAYASHI Makoto•(Tohoku University) YIN Shu•(Osaka University) KAKIHANA Masato
- 3PT04am Control of luminescent properties of lanthanide doped layered double hydroxides through anion exchange (Keio University) ○TAKAHASHI Fumina•HAGIWARA Manabu•FUJIHARA Shinobu\*
- 3PT05am Hydrothermal-assisted synthesis of lanthanum tungstate phosphors and control of photoluminescence properties (Keio University) ○KURODA Koki•HAGIWARA Manabu•FUJIHARA Shinobu\*
- 3PT06am Synthesis of CeO<sub>2</sub>:Sm<sup>3+</sup> films with unique morphology and control of redox-responsive luminescence (Keio University) ○KAMATA Niina•HAGIWARA Manabu•FUJIHARA Shinobu\*
- 3PT07am Design and Synthesis of a Novel Mechanoluminescent Composite Material: CdSiO<sub>3</sub>:Ln<sup>3+</sup>/PDMS (Tohoku University•Northwest Normal University) ZENG WEI•(Tohoku University) OKAWA AYAHISA•HASEGAWA TAKUYA•○YIN SHU
- 3PT08am High-pressure synthesis and photoluminescence properties of a novel europium-activated silicate phosphor SrSi<sub>2</sub>O<sub>5</sub>:Eu<sup>2+</sup> (Nagoya University) ○KITAHARA Takumi•SASAKI Takuya•NIWA Ken•HASEGAWA Masashi\*
- 3PT09am Photoluminescence of Pr<sup>3+</sup>-activated ordered double perovskite Ca(Lu<sub>1/2</sub>Ta<sub>1/2</sub>)O<sub>3</sub> (Okayama University of Science) ○Aguro Megumi•Shibata Mami•Sato Yasushi\*•(Osaka University) Kakihana Masato•(Tohoku University) Hasegawa Takuya•Shu Yin
- 3PT10am Evaluation of scintillation performance in SrFCl:Eu crystals (Tohoku University) ○Nakahata Shotaro•Kawamoto Hiroki\*•Fujimoto Yutaka\*•Asai Keisuke\*
- 3PT11am Photoluminescence and scintillation properties of Ce-doped Al(PO<sub>3</sub>)<sub>3</sub>-Sr(PO<sub>3</sub>)<sub>2</sub>-CsPO<sub>3</sub> glass scintillators (Tohoku University) ○NAKABAYASHI Yusuke•FUJIMOTO Yutaka•(Shizuoka University) KOSHIMIZU Masanori•(Tohoku University) ASAI Keisuke\*

- 3PT12am Development of inorganic phosphate glass scintillator including Tl (Tohoku University) ○Morita Chie•Fujimoto Yutaka•Hasegawa Ko•Nakabayashi Yusuke•Watanabe Akito•Fujimoto Yutaka•Asai Keisuke\*
- 3PT13am Fabrication of the Cs<sub>2</sub>HfCl<sub>6</sub>:Sb scintillator crystals by solution process (Tohoku University) ○Sasaki Haruto•Kawamoto Hiroki•Fujimoto Yutaka•Asai Keisuke\*
- 3PT14am The luminescence and scintillation properties of TICdCl<sub>3</sub>:Y crystal (Tohoku University) ○Ishida Miyu•Watanabe Akito•Kawamoto Hiroki•Fujimoto Yutaka•Asai Keisuke\*
- 3PT15am Scintillation properties of non-hygroscopic Cs<sub>2</sub>ZnI<sub>4</sub> crystals (Tohoku University) ○FURUTA MARINA•ISHIDA MIYU•WATANABE AKITO•KAWAMOTO HIROKI\*•FUJIMOTO YUTAKA\*•ASAI KEISUKE\*
- 3PT16am Luminescence and scintillation properties of Pr<sup>3+</sup> doped Li<sub>2</sub>CO<sub>3</sub>-NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub>-Al(PO<sub>3</sub>)<sub>3</sub> glass (Tohoku Univ.) ○HASEGAWA Ko•NAKABAYASHI Yusuke •WATANABE Akito•FUJIMOTO Yutaka•ASAI Keisuke\*
- 3PT17am Novel orange inorganic pigments with Eu<sup>2+</sup> as a coloring source (Tottori University) ○ADACHI Kaede•OHNISHI Kazuki•YAMAGUCHI Kazuki•MASUI Toshiyuki\*
- 3PT18am Effect of particle size on high chromaticity of bismuth-based inorganic red pigments (Kobe City College of Technology) ○UEYAMA Manami•YASUDA Keisuke\*
- 3PT19am Investigation of synthesis conditions for manganese-based inorganic blue pigments with high chromaticity (Kobe City College of Technology) ○IWAKIRI Hanako•YASUDA Keisuke\*
- 3PT20am Novel red inorganic pigments based on Li<sub>2</sub>MgTiO<sub>4</sub> (Tottori University) ○Saegusa Mizuki•Tanigami Rena•Yamaguchi Kazuki•Masui Toshiyuki\*
- 3PT21am Oxidation Property of Titanium Nitride Ceramics (Tokai University) ○Wang Ye•Matsushita Juniti\*
- 3PT22am Prepare of Ni-(In, Sn)-O electrochromic films by sol-gel method (Kansai University) ○SHIMOSAKO Kaito•UCHIYAMA Hiroaki\*
- 3PT23am Oxidation behavior of TiN with ZrO<sub>2</sub> doped ceramics (Tokai University) ○LI YU•Matsushita Junichi\*
- 3PT24am Electromagnetic field analysis for plasmonic photoelectrode using FDTD method (Toyohashi University of Technology) ○HIRAI Daiki•Matsuda Atsunori•Kawamura Go\*