

# The 33<sup>rd</sup> Ceramic Research Conference of Kanto Branch, The Ceramic Society of Japan

Monday, September 4, 2017

## Oral Session

Speakers in oral session will have 8 minutes for presentation and 3 minutes for Q&A, totally 12 minutes.

Room A (2F, Zuiun)

13 : 40~14 : 28

Session Chair: Takahiro Takei (University of Yamanashi, Japan)

[1A01] Evaluation of porous structure of filter for cell separation prepared from glass beads

Takuma Hirata, Takashi Yoshida, Kenichiro Iwasaki, Naoyuki Aikawa, Shin Aoki, and Atsuo Yasumori

*Tokyo University of Science, Japan*

[1A02] Effect of water vapor on CO<sub>2</sub> absorption property of NaFeO<sub>2</sub>

Shuhei Onozawa, Ikuo Yanase, and Hidehiko Kobayashi

*Saitama University, Japan*

[1A03] CO<sub>2</sub> absorption of Li<sub>4</sub>SiO<sub>4</sub> at room temperature under water vapor

Kento Sato, Ikuo Yanase, and Hidehiko Kobayashi

*Saitama University, Japan*

[1A04] Control of TiO<sub>2</sub>-electrode structure for DSSC using d-camphor

Shimpei Tachi and Osami Abe

*Ibaraki University, Japan*

14 : 28~15 : 34

Session Chair: Ikuo Yanase (Saitama University, Japan)

[1A05] Influence of crystal structure on afterglow property of Zr containing silicates

Yuta Iida, Kenichiro Iwasaki, and Atsuo Yasumori

*Tokyo University of Science, Japan*

[1A06] Effect of alkali metal ions on formation of titania thin film on glass substrate

Takehiro Suzuki, Kenichiro Iwasaki, and Atsuo Yasumori

*Tokyo University of Science, Japan*

Coffee Break (14 : 52~15 : 10)

[1A07] Influence of strontium addition on crystallization and mechanical properties of transparent lithium mica glass-ceramics

Haruka Tanaka, Tomohiko Yamakami, Tomohiro Yamaguchi, and Seiichi Taruta

*Shinshu University, Japan*

[1A08] Luminescence properties of phosphate phosphors encapsulated into sintered  $\text{Li}_2\text{O-ZnO-B}_2\text{O}_3\text{-P}_2\text{O}_5\text{-CaF}_2$  glass body

Nanako Akiyama<sup>1</sup>, Hideki Kuwahara<sup>1</sup>, Haruhiko Kuroe<sup>1</sup>, Hubertus T. Hintzen<sup>2</sup>, and Kiyoshi Itatani<sup>1</sup>

<sup>1</sup>*Sophia University, Japan,* <sup>2</sup>*Delft University of Technology, Netherland*

15 : 34~16 : 22

Session Chair: Shigeharu Ito (National Institute of Technology, Tsuruoka College, Japan)

[1A09] Synthesis of W-substituted  $\text{CeO}_2$  and its  $\text{CO}_2$  adsorption property

Kensuke Suzuki, Ikuo Yanase, and Hidehiko Kobayashi

*Saitama University, Japan*

[1A10] Low temperature synthesis of sodium iron oxides from chelate complexes

Taisetsu Takeuchi, Ikuo Yanase, and Hidehiko Kobayashi

*Saitama University, Japan*

[1A11] Preparation of titanium oxides by hydrothermal reaction with lepidocrocite-type layered titanate

K. Makise, S. Yanagida, T. Takei, and N. Kumada

*University of Yamanashi, Japan*

[1A12] Preparation of layered zirconium phosphate –azo compounds hybrids and evaluation of its cation adsorption property

Syuto Fujimoto, Takahiro Takei, Sayaka Yanagida, and Nobuhiro Kumada

*University of Yamanashi, Japan*

16 : 40~17 : 28

Session Chair: Tetsuo Umegaki (Nihon University, Japan)

[1A13] Relationship between strengths of a grain boundary and a bulk body of porous SiC

Yumi Imoto<sup>1</sup>, Jun-ichi Tatami<sup>1</sup>, Motoyuki Iijima<sup>1</sup>, Takuma Takahashi<sup>2</sup>, Tsukahara Yahagi<sup>2</sup>, Takahiro Horiuchi<sup>2</sup>, Masahiro Yokouchi<sup>2</sup>, Toshiyuki Kondo<sup>2</sup>

<sup>1</sup>*Yokohama National University, Japan*, <sup>2</sup>*Kanagawa Institute of Industrial Science and Technology, Japan*

[1A14] Fabrication of high-density  $\beta$ -silicon nitride sintered body from powder prepared by combustion synthesis and microstructural changes -Effect of  $\alpha$ -silicon nitride addition-

Satoshi Ono<sup>1</sup>, I. J. Davies<sup>2</sup>, S. Cho<sup>3</sup>, Kiyoshi Itatani<sup>1</sup>

<sup>1</sup>*Sophia University, Japan*, <sup>2</sup>*Curtin University, Australia*, <sup>3</sup>*Combustion Synthesis Co. Ltd., Japan*

[1A15] New solution process enabling fabrication of substituted ferrite nano-sheet

Nami Mizushima, Yuki Kamei, Tetsuo Kishi, Tetsuji Yano, Nobuhiro Matsushita

*Tokyo Institute of Technology, Japan*

[1A16] One-pot synthesis of Fe<sub>3</sub>O<sub>4</sub> nanoparticles modified with dodecylphosphonic acid

Atsuo Kamura<sup>1</sup>, Masahiko Ozaki<sup>1</sup>, Naokazu Idota<sup>2</sup>, Yoshiyuki Sugahara<sup>1,3</sup>

<sup>1</sup>*Waseda University, Japan*, <sup>2</sup>*Hosei University, Japan*, <sup>3</sup>*Kagami Memorial Research Institute for Materials Science and Technology, Waseda University, Japan*

Room B (2F, Baika )

13 : 40~14 : 28

Session Chair: Miwa Saito (Kanagawa University, Japan)

[1B01] Structure of (Ba,Ca)ZrO<sub>3</sub> film samples formed by rf magnetron sputtering

Miho Ako, Jun-ichi Fujisawa, and Minoru Hanaya

*Gunma University, Japan*

[1B02] DC electroluminescent properties of  $\text{Ca}_{0.6}\text{Sr}_{0.4}\text{TiO}_3:\text{Pr}$  red phosphor thin films

Kohei Aramaki and Toru Kyomen

*Gunma University, Japan*

[1B03] Effect of process parameter on film thickness of PZT thin film by CSD method

Akiyoshi Konagaya, Takahiko Kawaguchi, Naonori Sakamoto, Naoki Wakiya, and Hisao Suzuki

*Shizuoka University, Japan*

[1B04] Effect of substrate and composition on electrical properties of  $\text{Ba}(\text{Zr}_x, \text{Ti}_{1-x})\text{O}_3$  thin films deposited by CSD method

Takaaki Katayama, Takahiko Kawaguchi, Naonori Sakamoto, Naoki Wakiya, and Hisao Suzuki

*Shizuoka University, Japan*

14 : 28 ~ 15 : 34

Session Chair: Toru Kyomen (Gunma University, Japan)

[1B05] Epitaxial growth of  $\text{Sn}_2\text{Nb}_2\text{O}_7$  by pulsed laser deposition and its n-type conduction

Shunichi Suzuki<sup>1</sup>, Naoto Kikuchi<sup>2</sup>, Yoshihiro Aiura<sup>2</sup>, and Keishi Nishio<sup>1</sup>

<sup>1</sup>*Tokyo University of Science, Japan*, <sup>2</sup>*National Institute of Advanced Industrial Science and Technology, Japan*

[1B06] Effect of W-doping on electrical properties for wide gap, p-type  $\text{Sn}_2\text{Nb}_2\text{O}_7$

Shinya Nagata<sup>1</sup>, Akane Samizo<sup>1</sup>, Naoto Kikuchi<sup>2</sup>, Yoshihiro Aiura<sup>2</sup>, Kyoko Bando<sup>2</sup>, and Keishi Nishio<sup>1</sup>

<sup>1</sup>*Tokyo University of Science, Japan*, <sup>2</sup>*National Institute of Advanced Industrial Science and Technology, Japan*

Coffee Break (14 : 52 ~ 15 : 10)

[1B07] Fabrication of non sintered Li-ion conductive inorganic-organic composite solid electrolyte thick film

Kazuhiro Sugiyama, Jeevan Kumar Padarti, Mamoru Senna, Naonori Sakamoto, Takahiko

Kawaguchi, Naoki Wakiya, and Hisao Suzuki

*Shizuoka University, Japan*

[1B08] Hydrothermal syntheses of perovskite-type niobium oxides

Nozomi Tominaga, Miwa Saito, and Teruki Motohashi

*Kanagawa University, Japan*

15 : 34~16 : 22

Session Chair: Toshiyuki Nishimura (National Institute for Materials Science, Japan)

[1B09] Influence of Bi base binder glass phase on grain boundary stability of ZnO varistor

Akira Honjo<sup>1</sup>, Junitiro Miyake<sup>2</sup>, Koiti Tsuda<sup>2</sup>, and Osami Abe<sup>1</sup>

<sup>1</sup>Ibaraki University, Japan, <sup>2</sup>Hitachi, Ltd., Japan

[1B10] Fabrication of Porous Silicon / Cu hybrid structure

Akira Sato<sup>1</sup>, Takahiko Kawaguchi<sup>1</sup>, Naonori Sakamoto<sup>1</sup>, Kazuo Shinozaki<sup>2</sup>, Hisao Suzuki<sup>1</sup>, and Naoki Wakiya<sup>1</sup>

<sup>1</sup>Shizuoka University, Japan, <sup>2</sup>Tokyo Institute of Technology, Japan

[1B11] Fabrication and evaluation of  $\text{Li}_x\text{Na}_y\text{Co}_{1-z}\text{Cu}_z\text{O}_2$  for thermoelectric material

Kazuhiro Tsunemoto, Kenjiro Fujimoto, Akihisa Aimi, Kazuki Murai, and Keishi Nishio

*Tokyo University of Science, Japan*

[1B12] Fabrication of  $\text{CuY}_{1-x}\text{Ca}_x\text{O}_2$  for thermoelectric material using SPS method

Yosuke Seki, Kenjiro Fujimoto, Akihisa Aimi, Kazuki Murai, and Keishi Nishio

*Tokyo University of Science, Japan*

16 : 40~17 : 40

Session Chair: Naonori Sakamoto (Shizuoka University, Japan)

[1B13] Preparation and electrical characteristics of Lithium zinc silicate by liquid phase synthesis

Seiji Ono, Orasa Mungkoet, Masashi Sato, Yasunobu Akiyama, and Masashi Higuchi

*Tokai University, Japan*

[1B14] Improved oxygen adsorption / desorption characteristics of  $\text{YBaCo}_4\text{O}_{7+\delta}$  prepared by low-temperature synthesis

Erina Endo, Kaihei Komiyama, Miwa Saito, and Teruki Motohashi

*Kanagawa University, Japan*

[1B15] Elucidation of high-temperature oxidation behavior of graphite at constant temperatures by thermogravimetry

Jun Mikami and Takaya Akashi

*Hosei University, Japan*

[1B16] Electrocaloric effects of (Ba,Sr)TiO<sub>3</sub> ceramics

Yuki Oba, Yoshifumi Kinoshita, and Hiroshi Maiwa

*Shonan Institute of Technology, Japan*

[1B17] Electrical characterization of perovskite-type Ba(Zn, Nb)O<sub>3-δ</sub> (0 ≤ δ ≤ 0.5)

Kenji Arai, Miwa Saito, and Teruki Motohashi

*Kanagawa University, Japan*

Room C (2F, Tachibana )

13 : 40 ~ 14 : 28

Session Chair: Naofumi Uekawa (Chiba University, Japan)

[1C01] Effect of Impurity on Characters of Calcium Oxide Sintered Body

Hiroyuki Fukuda, Tetsuo Umegaki, and Yoshiyuki Kojima

*Nihon University, Japan*

[1C02] Effect of addition of various C-S-H on formation of tobermorite

Sei Tamura, Tetsuo Umegaki, and Yoshiyuki Kojima

*Nihon University, Japan*

[1C03] Deposition of zirconia on graphene nanosheets using zirconium alkoxide and its thermal transformation

Kou Tsuzuki, Tomohiro Yamakami, Tomohiro Yamaguchi, and Seiichi Taruta

*Shinshu University, Japan*

[1C04] Crystal growth of Sr<sub>3</sub>Zr<sub>2</sub>O<sub>7</sub> by flux method

Ikuya Fukasawa, Masanori Nagao, Satoshi Watauchi, and Isao Tanaka

*University of Yamanashi, Japan*

14 : 28 ~ 15 : 34

Session Chair: Masashi Ookawa (National Institute of Technology, Numazu College, Japan)

[1C05] Formation of the magnesium carbonate trihydrate hardened body

Takahiro Yajima, Tetsuo Umegaki, and Yoshiyuki Kojima

*Nihon University, Japan*

[1C06] Control of Li concentration in LiCoO<sub>2</sub> crystal on TSFZ growth

Shigenobu Nakamura, Masanori Nagao, Satoshi Watauchi, and Isao Tanaka

*University of Yamanashi, Japan*

Coffee Break (14 : 52 ~ 15 : 10)

[1C07] Synthesis of calcium carbonate using atomized droplets

Mitsuaki Kogo, Tetsuo Umegaki, and Yoshiyuki Kojima

*Nihon University, Japan*

[1C08] Synthesis of sol of Zn-Al layered double hydroxide (LDH) and ZnO nanoparticles using high concentration sugar aqueous solution and application of thin film preparation

Takahiro Muto, Naofumi Uekawa, and Takashi Kojima

*Chiba University, Japan*

15 : 34 ~ 16 : 22

Session Chair: Motoyuki Iijima (Yokohama National University)

[1C09] Phase Conversion of Transition Metal-Included Layered Double Hydroxide by Solvothermal Treatment with Load of Potential and It's Electrochemical Property

Noriki Takeda, Takahiro Takei, Sayaka Yanagida, and Nobuhiro Kumada

*University of Yamanashi, Japan*

[1C10] Synthesis of spherical mesoporous silica using mixed micelles

Jawad Sarwar, Tamayo Watanabe, Takashi Asaka, and Masashi Higuchi

*Tokai University, Japan*

[1C11] Relationship between synthesis temperature and property of mesoporous silica prepared with triblock copolymers

Masayuki Sakai, Koichi Niwa, and Yasuro Ikuma

*Kanagawa Institute of Technology, Japan*

[1C12] Development of novel solution process with low environmental load and fabrication of zinc oxide thin film

Aoi Omura, Yuta Kubota, Tetsuo Kishi, Tetsuji Yano, and Nobuhiro Matsushita  
*Tokyo Institute of Technology, Japan*

16 : 40~17 : 40

Session Chair: Seiichi Taruta (Shinshu University, Japan)

[1C13] Synthesis of cerium oxide nanoparticles using glycol solution and examination of photochromism

Minoru Kobayashi, Kosuke Yoshida, Takashi Kojima, and Naofumi Uekawa  
*Chiba University, Japan*

[1C14] Preparation of TiO<sub>2</sub> films by using titanate compound sol with peroxy group and investigation of effect of aggregated structure in films on their optical transparency

Ryota Itami, Wen Chunming, Takashi Kojima, and Naofumi Uekawa  
*Chiba University, Japan*

[1C15] Preparation of organically modified kaolinite via a reaction between methoxy-modified kaolinite and trimethyl phosphate

Shingo Machida<sup>1</sup>, Naokazu Idota<sup>2</sup>, Yoshiyuki Sugahara<sup>1, 3</sup>

<sup>1</sup>Waseda University, Japan, <sup>2</sup>Hosei University, Japan, <sup>3</sup>Kagami Memorial Research Institute for Materials Science and Technology, Waseda University, Japan

[1C16] The effect of mechanical treatment of silica porous particles with high shear and compressive stress on their surface microstructures

Masahiro Hayakawa, Motoyuki Iijima, and Jun-ichi Tatami  
*Yokohama National University, Japan*

[1C17] Pioneering low-temperature calcination process adding oleic acid for SOFC cathode material

Sena Komuro, Tetsuo Kishi, Tetsuji Yano, and Nobuhiro Matsushita  
*Tokyo Institute of Technology, Japan*



Tuesday, September 5, 2017

## Poster Session

9 : 00~10 : 30

[2P01] Photochromism of rare-earth doped barium magnesium silicate phosphor

Sayaka Matsumoto and Yoshinori Yonezaki

*University of Yamanashi, Japan*

[2P02] Degradation of o-salicylic acid by ultraviolet-irradiated titanium oxide

Taro Okada, Daiki Itou, Yasuro Ikuma, and Koichi Niwa

*Kanagawa Institute of Technology, Japan*

[2P03] Degradation of 3-hydroxybenzoic acid by titanium oxide irradiated with ultraviolet rays

Fuka Onodera, Kyosuke Kusunoki, Koichi Niwa, and Yasuro Ikuma

*Kanagawa Institute of Technology, Japan*

[2P04] Contact angle of liquid on rutile titanium oxide before and after ultraviolet irradiation

Hiroataka Suzuki, Daiki Hokari, Takemi Maruyama, Yasuro Ikuma, and Koichi Niwa

*Kanagawa Institute of Technology, Japan*

[2P05] Degradation of linoleic acid by titanium oxide irradiated with UV rays

Mizuki Sugie, Ryohei Ishita, Hiroshi Morikawa, Koichi Niwa, and Yasuro Ikuma

*Kanagawa Institute of Technology, Japan*

[2P06] Development of Mn-based oxide catalyst supports for the dry reforming reaction

Takayuki Sakamoto, Tomoki Kariya, Miwa Saito, and Teruki Motohashi

*Kanagawa University, Japan*

[2P07] The effect of small amount of mixed conducting brownmillerite type compound addition to anode layer of IT-SOFC and Frenkel defect association cluster formation associated with it on the improvement of anode activity at three phase boundaries

Shigeharu Ito<sup>1</sup>, Takaya Sato<sup>1</sup>, Akira Suzuki<sup>2</sup>, Andrii Rednyk<sup>2</sup>, Noriko Isaka<sup>2</sup>, Toshiyuki Mori<sup>2</sup>

<sup>1</sup>National Institute of Technology, Tsuruoka College, Japan, <sup>2</sup>National Institute for Materials Science, Japan

[2P08] Influence of CeO<sub>2</sub> addition on performance of PEFC electrode

Mutsumi Minakawa, Ryosuke Miura, Yasuro Ikuma, and Koichi Niwa

*Kanagawa Institute of Technology, Japan*

[2P09] Oxidation reaction of acetaldehyde in ethanol fuel cell

Tetuya Imamura, Syungo Imai, Yasuro Ikuma, and Koichi Niwa

*Kanagawa Institute of Technology, Japan*

[2P10] Preparation and properties of the multi-colored film on ceramic substrate using organic-inorganic hybrid, latent pigments and photo-irradiation

Natsuki Morita and Tomoji Ohishi

*Shibaura Institute of Technology, Japan*

[2P11] Development of facile patterning method of silica hybrid film with benzyl group containing latent pigments by microwave irradiation and photo-acid-generator for high performance color filter of LCD

Yu Kimura and Tomoji Ohishi

*Shibaura Institute of Technology, Japan*

[2P12] Morphology control of hydroxyapatite with rare earth metal cation and its effect for fluorescence property

Hitomi Shiga, Miku Kawai, Takahiro Takei, Sayaka Yanagida, and Nobuhiro Kumada

*University of Yamanashi, Japan*

[2P13] Synthesis of Ge-imogolite containing heavy Fe<sup>3+</sup> ions

Seina Sakabe, Seina Hirabayashi, Anna Yamatake, Miwa Yamada, Momoko Ishida,

Daisuke Funatsu, and Masashi Ookawa

*National Institute of Technology, Numazu College, Japan*

[2P14] Synthesis of imogolite and Ge-imogolite containing Cr<sup>3+</sup> ions

Anna Yamatake, Seina Sakabe, Seina Hirabayashi, Miwa Yamada, Daisuke Funatsu,

Takashi Arai, and Masashi Ookawa

*National Institute of Technology, Numazu College, Japan*

[2P15] UV-VIS study on formation process of Ge-imogolite containing Fe<sup>3+</sup> ions

Seina Hirabayashi, Anna Yamatake, Seina Sakabe, Miwa Yamada, Eiji Kato, Minami

Watanabe, Kaho Osada, and Masashi Ookawa

*National Institute of Technology, Numazu College, Japan*

[2P16] Deposition conditions of gallium nitride on substrates using gallium oxide powder

Yasuyuki Matsuo, Takuto Mise, Yuka Kuboki, and Hajime Kiyono

*Shibaura Institute of Technology, Japan*

[2P17] Preparation of needle-like titanium nitride particles by ammonia nitridation of titanate nanofiber

Mayu Oishi and Hajime Kiyono

*Shibaura Institute of Technology, Japan*

[2P18] Relationship between thickness of zinc stannate film as photoelectrode material and photovoltaic properties of dye sensitized solar cell

Rei Takeuchi, Kazuki Takahashi, and Minoru Takemoto

*Kanagawa Institute of Technology, Japan*

[2P19] Dye sensitized solar cell employing Zn-Sn-O amorphous oxide as photoelectrode

Shota Kubota, Shohei Hisatome, and Minoru Takemoto

*Kanagawa Institute of Technology, Japan*

[2P20] Synthesis and fluorescent properties of titanium-doped calcium tin aluminate

Yuta Koshiishi, Tomoyuki Hachiya, and Minoru Takemoto

*Kanagawa Institute of Technology, Japan*

[2P21] Synthesis of novel phosphors of doped calcium aluminate sulfide

Yudai Nishina, Daiki Katagiri, and Minoru Takemoto

*Kanagawa Institute of Technology, Japan*

[2P22] Electrochemical characteristics of sodium manganese oxide as a cathode material for aqueous sodium-ion battery

Saki Shinomiya, Takumi Sato, Tomohiro Tamura, Yasunobu Akiyama, and Masashi Higuchi

*Tokai University, Japan*

[2P23] Silver ion exchange of mica glass-ceramics and their parent glasses and thermal transformation of ion-exchangers

Gunasegaran Archanna Darshini, Tomohiko Yamakami, Tomohiro Yamaguchi, and Seiichi Taruta

*Shinshu University, Japan*

Invited lecture (10 : 40~11 : 30)

Session Chair: Yasuro Ikuma (Kanagawa Institute of Technology, Japan)

On the design of lithium titanate anode and the lithium-rich layered composite cathode for lithium ion batteries

Shih-Kang Lin

*National Cheng Kung University, Taiwan*