

FINAL PROGRAM

**4th International Symposium on
SiAlONs and Non-oxides**

ISSNOX4

May 25 – 28, 2014
Nagahama Royal Hotel, Shiga, Japan



Co-Sponsored by
Engineering Ceramics Division, the Ceramic Society of Japan
JSPS 124th Committee on Advanced Ceramics

Organizing Committee

Chairs:

J. Tatami, Yokohama National Univ., Japan
T. Ohji, AIST, Japan

Members:

Y.B. Cheng, Monash Univ., Australia
I.-W. Chen, Univ. of Pennsylvania, U.S.A.
T. Goto, Tohoku Univ., Japan
S. Hampshire, Univ. of Limerick, Ireland
M.J. Hoffmann, Univ. of Karlsruhe, Germany
S. Kikkawa, Hokkaido Univ., Japan
H. D. Kim, KIMS, Korea
H.T.Lin, Oak Ridge National Laboratory, U.S.A.
H. Mandal, Sabanci Univ., Turkey
M. Naito, Osaka Univ., Japan
P. Sajgalik, Slovak Academy of Sciences, Slovakia
Y. Sakka, NIMS, Japan
M. Singh, OAI, NASA Glenn Research Center, U.S.A

Under the Patronage of:

The Murata Science Foundation
Shiga Prefecture
Izumi Science and Technology Foundation
Research Foundation for the Electrotechnology of Chubu.
Engineering Ceramics Division, the Ceramic Society of Japan

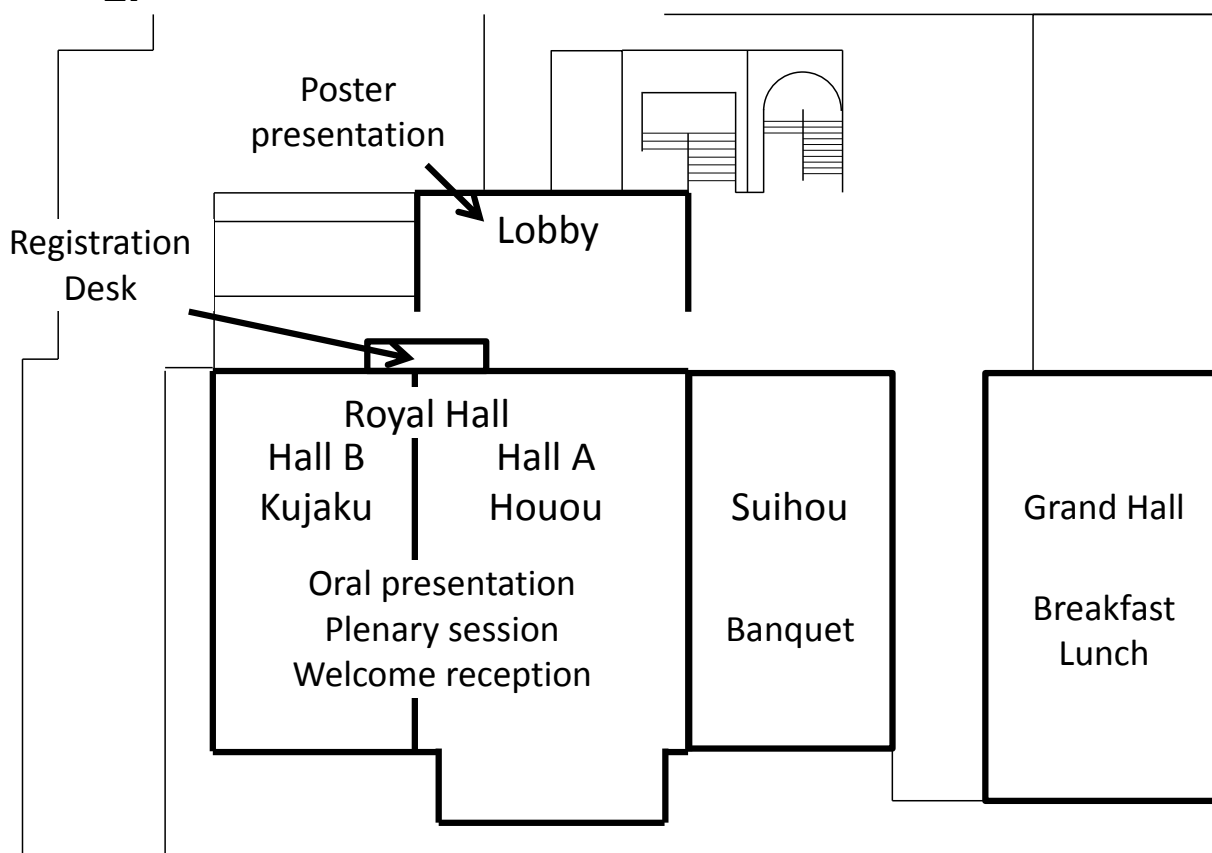
Endorsed by

The Ceramic Society of Japan
The American Ceramic Society
The European Ceramic Society
The Korean Ceramic Society
The Australian Ceramic Society
The Indian Ceramic Society
The Chinese Ceramic Society
World Academy of Ceramics
Yokohama National University

Schedule of Events

May 25 (Sun)	16:00 - 19:00	Registration
	18:00 - 20:00	Welcome Reception
May 26 (Mon)	8:00 - 18:00	Registration
	9:00 - 12:00	Plenary Session
	13:20 - 18:00	Oral Presentation
May 27 (Tue)	8:00 - 18:00	Registration
	8:30 - 12:00	Oral Presentation
	13:20 - 15:10	Oral Presentation
	15:20 - 17:00	Poster Presentation
	18:00 - 20:00	Banquet
May 28 (Wed)	8:00 - 11:00	Registration
	8:30 - 12:00	Oral Presentation
	12:00	Conference close

Floor Map 2F



Note to Presenters

For Oral Presentation

Time allocated for oral presentations is 20 min for contributed papers, 25 min for invited lectures, and 40 min for plenary lectures. Oral presenters are required to allow at least 3 min within the allotted presentation time for discussion and presentation change. Presentation rooms will be equipped with an LCD video projector and a screen. You are kindly requested to bring your own personal computer.

For Poster Presentation

Poster session will be held from 15:20 to 17:00, Tuesday, May 27 (room to be announced). The height and width of the board that each poster presentation can use are 180 cm and 85 cm, respectively. The posters can be mounted from 13:00, Tuesday, May 27, and must be removed by 17:30 of the same day. Those left after this time will be subjected to disposal. (The presenters are encouraged to remove immediately after the poster session.)

Program at a glance

Date	am / pm	Room	Session	Page Number	
				Program	
May 26	am	Hall A	Plenary Session	5	
	pm		SiAlON Phospor	5	
			SiAlON Glass and Grain Boundary	6	
			Powder Processing I	6	
	pm	Hall B	Silicon Carbide I	6	
			Silicon Carbide II	7	
May 27	am	Hall A	Thermal Properties	9	
			Powder Processing II	9	
	pm		Powder Processing III	10	
	am	Hall B	Non-Oxides for Extreme Environments	10	
			pm	Porous Materials	11
			Poster Session	12	
May 28	am	Hall A	Applications	15	
			Polymer-Derived Process	15	
		Hall B	Synthesis	16	
			Mechanical Properties	17	

Monday, May 26

Plenary Session

9:00 – 12:00, May 26 (Mon), Hall A (Royal Hall Houou)

9:00 – 9:10

Opening Remarks

Junichi Tatami, Yokohama National Univ., Japan

(Plenary Lectures)

9:10 – 9:50

PL-1: Electrical Transitions in Metal-doped Amorphous Silicon Nitride and SiAlON

I-Wei Chen, University of Pennsylvania, USA

9:50 – 10:30

PL-2: An Unique Material—Silicon Carbide

Dongliang Jiang*, and Jingxian Zhang, Shanghai Institute of Ceramics, Chinese Academy of Sciences, P.R. China

10:30 – 11:10

PL-3: Solute Atoms and Grain Boundary Segregated Atoms in Nitride Ceramics

Yuichi Ikuhara, The University of Tokyo, Japan, Japan Fine Ceramic Center, Japan & Tohoku University, Japan

11:10 – 11:50

PL-4: Polymer-Derived Non-Oxide Ceramics for Energy Applications

Ralf Riedel*, Emanuel Ionescu and Magdalena Graczyk-Zajac, Technische Universität Darmstadt, Germany

SiAlON Phosphor

13:20 – 15:35, May 26 (Mon), Hall A (Royal Hall Houou)

13:20 - 13:45

A1-1: Cathodoluminescence and Applications of Nitride Phosphors (Invited)

Rong-Jun Xie*, N. Hirotsaki, T. Takeda, T. Suehiro, B. Dierre and T. Sekiguchi, National Institute for Materials Science (NIMS), Japan

13:45 - 14:10

A1-2: Synthesis and Photoluminescence Properties of Sialon Phosphors for White LEDs (Invited)

Suzuya Yamada*, Hideyuki Emoto, and Masayoshi Ichikawa, Denki Kagaku Kogyo K.K., Japan

14:10 - 14:35

A1-3: Fluorescence and Color Emissions in Silicon Nitride Based Materials (Invited)

X.W. Zhu, A.Sawada, Y. Masubuchi, and S. Kikkawa*, Hokkaido University, Japan

14:35 - 14:55

A1-4: Optical Properties Tunneling of SiAlON Composite Films

Guanghui Liu*, Qian Liu, Zhenzhen Zhou, Qinhuai Wei, and Hua Yang, Shanghai Institute of Ceramics, Chinese Academy of Sciences, P.R. China

Monday, May 26

14:55 - 15:15

A1-5: Influence of Rare Earth Dopant and N/O Substitution on the Electronic Structure and Luminescent Properties of Oxynitride Phosphors

Z. Lenčėš*, M. Hrabalov, I. Ibrahim, L. Benco, and P. Šajgalk, Institute of Inorganic Chemistry, Slovak Academy of Sciences, Slovakia

15:15 - 15:35

A1-6: The Blue Excited Oxynitride Phosphor $Y_{6+(x/3)-y}Ca_ySi_{11}N_{20+x-y}O_{1-x+y}:Ce$

Takatoshi Seto, Takamasa Izawa*, and Yuji Masubuchi, Samsung Japan Reserch Institute, Japan; Shinichi Kikkawa, Hokkaido University, Japan

15:35 - 15:50

Break

SiAlON Glass and Grain Boundary

15:50 – 16:35, May 26 (Mon), Hall A (Royal Hall Houou)

15:50 - 16:10

A1-7: Intergranular Glassy Phases to Dictate Phase Relations in SiAlON

Hui Gu, Shanghai Institute of Ceramics, Chinese Academy of Sciences, P.R. China

Powder Processing I

16:10 – 17:15, May 26 (Mon), Hall A (Royal Hall Houou)

16:10 - 16:35

A1-8: Evaluation of Sintering Stress From 3D-Visualization of Microstructure by Synchrotron X-Ray Microtomography (Invited)

Fumihiko Wakai*, Tokyo Institute of Technology, Japan; Olivier Guillon, Friedrich Schiller University of Jena, Germany

16:35 - 16:55

A1-9: Tailoring the Electrical Resistivity of Si_3N_4 -SiC-Based Composites

Eveline Zschippang*, Hagen Klemm, Mathias Herrmann, Ulrich Guth, and Alexander Michaelis, Fraunhofer IKTS, Germany

16:55 - 17:15

A1-11: Functionalized Polyethyleneimine for Controlling the dispersion Stability of Non-Oxide Fine Particles in Various Solvent

Motoyuki Iijima*, Yokohama National University, Japan; Yosuke Nomura and Hidehiro Kamiya, Tokyo University of Agriculture and Technology, Japan; Junichi Tatami, Yokohama National University, Japan

Silicon Carbide I

13:20 – 15:30, May 26 (Mon), Hall B (Royal Hall Kujaku)

13:20 - 13:45

B1-1: Easy Machinable SiC Ceramics With High Electrical Conductivity (Invited)

P. Šajgalk, M. Hnatko, Z. Lenčėš, and A. Kovalcikova, Institute of Inorganic Chemistry, Slovak Academy of Sciences, Slovakia

Monday, May 26

13:45 - 14:10

B1-2: Polymer Derived, SiC-Based Fibers (Invited)

Toshihiro Ishikawa, Ube Industries, Ltd., Japan

14:10 - 14:30

B1-3: Flexural Strength of Alkaline Earth-Modified SiOC-Bonded SiC Ceramics

Jung-Hye Eom* and Young-Wook Kim, The University of Seoul, Korea

14:30 - 14:50

B1-4: Influence of Y₂O₃ Addition on Thermal-Electrical Properties of SiC Ceramics

Byung-Koog Jang* and Toshiyuki Nishimura, National Institute for Materials Science; Young-Wook Kim, The University of Seoul, Korea

14:50 - 15:10

B1-5: Fabrication of Silicon Carbide Ceramics with Al₂O₃-TiO₂ Additives by Hot-Pressing

Katsumi Yoshida* and Yutaka Shinoda, Tokyo Institute of Technology, Japan; Yoshikazu Suzuki, University of Tsukuba, Japan

15:10 - 15:30

B1-6: Sintering Behavior of SiC Ceramics Using B and C As the Sintering Additives

Jingxian Zhang*, Dongliang Jiang, Qingling Lin, Zhongming Chen and Zhengren Huang, Shanghai Institute of Ceramics, Chinese Academy of Sciences, P.R. China

15:30 - 15:45

Break

Silicon Carbide II

15:45 – 17:40, May 26 (Mon), Hall B (Royal Hall Kujaku)

15:45 - 16:10

B1-7: Formation of SiC Nanowires by Thermal Evaporation Method and Application as a Reinforcement for Alumina Matrix Composites (Invited)

Toyohiko Yano*, Noppasint Jiraborvornpongsa and Katsumi Yoshida, Tokyo Institute of Technology, Japan

16:10 - 16:30

B1-8: Evaluation of High Temperature Stability of White Si-O-C(-H) Ceramics in an Inert Atmosphere

Masaki Narisawa*, Guangyu. Ma, Hiroki Hokazono and Akihiro Iwase, Osaka Prefecture University, Japan; Chihiro Yogi, Masahiro Ogawa and Toshiaki Ohta, Ritsumeikan University, Japan

16:30 - 16:50

B1-9: Electrical and Mechanical Properties of Liquid-Phase Sintered SiC Ceramics with a Small Amount of Additives

Kwang-Young Lim* and Young-Wook Kim, The University of Seoul, Korea

16:50 - 17:15

B1-10: Development of High-Temperature Thermal Storage Technology for Hydrogen Electric Power Storage System (Invited)

Shoko Suyama*, S. Kasai, M. Takahashi, H. Watanabe, R. Yoshimura, M. Yoshino, R. Inuzuka, T. Kameda and M. Yamada, Toshiba Corporation, Japan

Monday, May 26

17:15 - 17:40

B1-11: New Technology With SiC Porous Materials; Progress in the Development of the Diesel Vehicle Technology (Invited)

Kazushige Ohno*, IBIDEN Co.,Ltd, Japan

Tuesday, May 27

Thermal Properties

8:30 – 10:15, May 27 (Tue), Hall A (Royal Hall Houou)

8:30 - 8:55

A2-1: Development of High Thermal Conductivity Silicon Nitrides for Semiconductor Power Modules (Invited)

Kiyoshi Hirao*, You Zhou, Hideki Hyuga, and Norimitsu Murayama, National Institute of Advanced Industrial Science and Technology (AIST), Japan; Dai Kusano and Mutsuo Sando, Fine Ceramics Research Association (FCRA), Japan

8:55 - 9:15

A2-2: High-Thermal-Conductivity Silicon Nitride Ceramics Prepared from Si₃N₄ and Si Starting Powders

You Zhou*, Hideki Hyuga, Yu-ichi Yoshizawa, Tatsuki Ohji, and Kiyoshi Hirao, National Institute of Advanced Industrial Science and Technology (AIST), Japan

9:15 - 9:35

A2-3: High Thermal Conductivity Silicon Nitride Ceramic Fabricated by Using a Magnetic Field Orientation Method

Takuma Takahashi*, Kanagawa Academy of Science and Technology, Japan; Junichi Tatami, Yokohama National University, Japan; Satoshi Tanaka, Nagaoka University of Technology, Japan

9:35 - 9:55

A2-4: Enhanced thermal Conductivity of Epoxy Composite With Silicon Nitride Filler

Akihiro Shimamura*, Hideki Hyuga, Yuji Hotta, Naoki Kondo, and Kiyoshi Hirao, National Institute of Advanced Industrial Science and Technology (AIST), Japan

9:55 - 10:15

A2-5: Thermal Analysis of Silicon Nitride Ceramics Up to 1700°C

Kouichi Yasuda*, Tokyo Institute of Technology, Japan; Keizo Hiraishi and Kiyoteru Isiko, NETZSCH Japan, Japan; Takumi Takahashi and Junichi Tatami, Yokohama National University, Japan

Powder Processing II

10:15 – 11:40, May 27 (Tue), Hall A (Royal Hall Houou)

10:15 - 10:40

A2-6: Fabrication of Highly Textured β -Si₃N₄ and β -SiAlON by Slip Casting in a Strong Magnetic Field and Reaction-Sintering (Invited)

Yoshio Sakka*, XinWen Zhu, and Thoru S. Suzuki, National Institute for Materials Science (NIMS), Japan

10:40 - 11:00

A2-7: Pressureless Sintering of Hafnium Carbide-Based Ceramics

Ji-Xuan Liu* and Guo-Jun Zhang, Shanghai Institute of Ceramics, Chinese Academy of Sciences, P.R. China

11:00 - 11:20

A2-8: Low Temperature (1600°C) Sintering of β -SiAlON Powder

Naoki Kondo*, Mikinori Hotta and Tatsuki Ohji, National Institute of Advanced Industrial Science and Technology (AIST) Japan

Tuesday, May 27

11:20 - 11:40

A2-9: Evaluation of Internal Coarse Defects and Their Influence on Strength in Silicon Nitride Ceramics

Satoshi Tanaka, Nagaoka University of Technology, Japan

Powder Processing III

13:20 – 15:10, May 27 (Tue), Hall A (Royal Hall Houou)

13:20 - 13:45

A2-10: Strategies for Controlling Grain Growth Behavior During Liquid Phase Sintering (Invited)

Suk-Joong L. Kang, Korea Advanced Institute of Science and Technology, Korea

13:45 - 14:10

A2-11: High-Strength AlN Ceramics by Low-Temperature Sintering With CaZrO₃-Y₂O₃ Co-Additives (Invited)

Hyun Min Lee and Do Kyung Kim*, Korea Advanced Institute of Science and Technology, Korea

14:10 - 14:30

A2-12: Control of Orientation in Aluminum Nitride Prepared by Slip Casting in a Strong Magnetic Field

Tohru S. Suzuki, Kento Imai, Tetsuo Uchikoshi, and Yoshio Sakka, National Institute for Materials Science (NIMS), Japan

14:30 - 14:50

A2-13: Spark Plasma Sintering of AlN Ceramics With Y₂O₃-CaO Based Low-Temperature Sintering Additives

Ryota Kobayashi*, Katsuyoshi Oh-ishi, Takashi Goto, and Rong Tu, Chuo University, Japan

14:50 - 15:10

A2-14: SPS of cBN Incorporated Ceramic Matrix Composites

Ufuk Akkasoglu*, MDA Advanced Ceramics, Turkey; Ferhat Kara, Servet Turan and Alpagut Kara, Anadolu University, Turkey; Hasan Mandal, Sabancı University, Turkey

Non-Oxides for Extreme Environments

8:30 – 11:35, May 27 (Tue), Hall B (Royal Hall Kujaku)

8:30 - 8:55

B2-1: Rod-like Boride-Carbide-Nitride Eutectic Composites by Arc-Melting (Invited)

Takashi Goto*, Eric Jianfeng Cheng and Hirokazu Katsui, Tohoku University, Japan

8:55 - 9:20

B2-2: Recent Advances on Reactive Synthesis of Non-Oxide Ceramics (Invited)

Guo-Jun Zhang*, Shanghai Institute of Ceramics, Chinese Academy of Sciences, P.R. China

Tuesday, May 27

9:20 - 9:45

B2-3: Sol-Gel Processing of Ultra-High Temperature Ceramics and Composites for Applications in Extreme Environments (Invited)

Yi-Bing Cheng, Monash University, Australia

9:45 - 10:10

B2-4: Single-Source-Precursor Synthesis and Properties of Hf-Containing Ultrahigh-Temperature Ceramic Nanocomposites (UHTC-NCs) (Invited)

Jia Yuan, Qingbo Wen, Ralf Riedel and Emanuel Ionescu*, Technische Universität Darmstadt, Germany

10:10 - 10:30

B2-5: Sintering Behaviors and Microstructures of ZrC-Based Ceramics for Extreme Environment Applications

Xin-Gang Wang* and Guo-Jun Zhang, Shanghai Institute of Ceramics, Chinese Academy of Sciences, P.R. China

10:30 - 10:50

B2-6: Superplasticity of Carbide Ceramics Composite

Yutaka Shinoda*, Takashi Akatsu and Fumihiko Wakai, Tokyo Institute of Technology, Japan

10:50 - 11:10

B2-7: Joining of Ultra High Temperature Ceramics Using Metallic Interlayers

Noritaka Saito* and Kunihiro Nakashima, Kyushu University, Japan; Laura Esposito, Laura Silvestroni, and Diletta Sciti, CNR-ISTEC, Italy; Stefano Guicciardi, CNR-ISMAR, Italy; Andreas M. Glaeser, University of California Berkeley, USA

11:10 - 11:35

B2-8: Novel Hard Coatings of Chromium-Oxynitride-Based Compounds (Invited)

Hisayuki Suematsu*, K. Suzuki, T. Suzuki, T. Nakayama and K. Niihara, Nagaoka University of Technology, Japan

Porous Materials

13:20 – 14:50, May 27 (Tue), Hall B (Royal Hall Kujaku)

13:20 - 13:45

B2-9: Porous Silicon Nitride and SiAlON Prepared by Reaction Sintering Method (Invited)

Hai-Doo Kim, Korea Institute of Materials Science, Korea

13:45 - 14:10

B2-10: Processing of Polysiloxane-Derived Macroporous Silicon Carbide Ceramics (Invited)

Young-Wook Kim* and Jung-Hye Eom, The University of Seoul, Korea

14:10 - 14:30

B2-11: Processing of Macroporous Silicon Carbide Ceramics With Tailored Porosities

Manabu Fukushima*, Paolo Colombo, You Zhou, Tatsuki Ohji and Yu-ichi Yoshizawa, National Institute of Advanced Industrial Science and Technology (AIST), Japan

Tuesday, May 27

14:30 - 14:50

B2-12: The Influence of Rare-earth Oxides on the Flexural strength of Porous SRBSN (Sintered Reaction Bonded Silicon Nitride)

Ha-Neul Kim*, Jae-Woong Ko, Jin-Myung Kim, Young-Jo Park and Hai-Doo Kim, Korea Institute of Materials Science, Korea; Seung-Jun Lee, Seung-Soo Baek and Eul-Son Kang, Agency for Defence Development, Korea

Poster Session

15:20 – 17:00, May 27 (Tue)

P-1: Salt-Assisted Combustion Synthesis of β -SiAlON

Jing Niu*, Hokkaido University, Japan; Kazuto Harada and Isao Nakatsugawa, Combustion Synthesis Co. Ltd., Japan; Tomohiro Akiyama, Hokkaido University, Japan

P-2: Growth of Pt Particles Supported on Ce-Doped β -SiAlON

Yo Aketagawa*, Junichi Tatami, and Motoyuki Iijima, Yokohama National University, Japan; Akira Obuchi and Junko Uchisawa, National Institute of Advanced Industrial Science and Technology (AIST), Japan; Risa Katayama, Kubota Corporation, Japan

P-3: Cyclic CIP of Si_3N_4 Microgranules

Shiori Sueyasu*, Junichi Tatami, and Motoyuki Iijima, Yokohama National University, Japan; Takuma Takahashi, Kanagawa Academy of Science and Technology, Japan

P-4: Fabrication of Post-Reaction Sintered Si_3N_4 Ceramics Using Waste Si Sludge

Hiroimi Sasano*, Junichi Tatami, Motoyuki Iijima, Yokohama National University, Japan; Takuma Takahashi, Kanagawa Academy of Science and Technology, Japan

P-5: The Microstructural Control of (Ca,RE)- α -SiAlON Ceramics by Two Step Pressureless Sintering

Young-Jo Park*, Jin-Myung Kim, Jae-Wook Lee, Haneul Kim, Jae-Woong Ko and Hai-Doo Kim, Korea Institute of Materials Science, Korea

P-6: Synthesis and Characterization of SiAlON Ceramics From Polymer Precursors

Li Ye *, Weijian Han, Wenfeng Qiu, Yuanchao Li, Yan Lu*, Tong Zhao*, Institute of Chemistry, Chinese Academy of Sciences, P.R. China

P-7: Influence of the Added Rare Earth Oxide on Volume Resistivity at High Temperatures of Silicon Nitride Ceramics

Daisuke Kawai*, Junichi Tatami, and Motoyuki Iijima, Yokohama National University, Japan; Takuma Takahashi, Kanagawa Academy of Science and Technology, Japan

P-8: Preparation of Transparent Fluorescent β -SiAlON Bulk by Adding HfO_2

Takehiro Tanaka*, Junichi Tatami, and Motoyuki Iijima, Yokohama National University, Japan; Takuma Takahashi, Kanagawa Academy of Science and Technology, Japan

P-9: Tribo-Luminescence of Mn Doped AlN ceramics

K. Iwai*, R. Fujimi, J. Tatami, and M. Iijima, Yokohama National University, Japan

P-10: Effect of microstructural Development and the Change in Chemistry of Glassy Phase on Superplastics Flow Behavior of Si_3N_4 Ceramics

Raayaa Wananuruksawong*, Yutaka Shinoda, Takashi Akatsu and Fumihiro Wakai, Tokyo Institute of Technology, Japan

Tuesday, May 27

P-11: Influence of the Rare-Earth Oxide Addition on Growth of Elongated Grains in Porous Si₃N₄

Yousuke Mukai*, Junichi Tatami, and Motoyuki Iijima, Yokohama National University, Japan; Masaaki Uemura, Kubota Corporation, Japan

P-12: Nitridation of Si-Y₂O₃-Al₂O₃ Nanocomposite Particles Prepared by Mechanical Treatment

K. J. Jeong*, J. Tatami, and M. Iijima, Yokohama National University, Japan; T. Takahashi, Kanagawa Academy of Science and Technology, Japan

P-13: Synthesis of Gallium Nitride Nanowires by NH₃ Nitridation of Gallium Oxide With Nickel Catalysis

Masatoshi Chindo*, Naoto Yahata and Hajime Kiyono, Shibaura Institute of Technology, Japan; Daisuke Maruoka and Makoto Nanko, Nagaoka University of Technology, Japan

P-14: Synthesis and Characterization of Luminescent Properties of Siliconcarbonitrides Derived From Polysilylcarbodiimides

Yohei Shimokawa* and Akikazu Fujiwara, Nagoya Institute of Technology, Japan; Emanuel Ionescu and Gabriela Mera, Technische Universität Darmstadt, Germany; Sawao Honda and Yuji Iwamoto, Nagoya Institute of Technology, Japan ; Ralf Riedel, Technische Universität Darmstadt, Germany

P-15: Effect of Pulverized Particles on Crystallographic Orientation in AlN Prepared by Slip Casting in a Strong Magnetic Field

Kento Imai*, Tohru S. Suzuki, Hajime Kiyono, and Yoshio Sakka, National Institute for Materials Science (NIMS), Japan

P-16: Effect of Aluminum Content on Mechanical Properties and Thermal Conductivities of Sintered Reaction-Bonded Silicon Nitride

Dai Kusano*, Fine Ceramics Research Association, Japan; Hideki Hyuga, You Zhou, and Kiyoshi Hirao, Fine Ceramics Research Association, Japan & National Institute of Advanced Industrial Science and Technology (AIST), Japan

P-17: Synthesis of Coarser h-BN From Coarser B₄C by Adding BaCO₃

M. Sotokawa*, J. Tatami, and K. Mine, Yokohama National University, Japan; J. Suzuki, S. Yamada, and H. Hirotsuru, Denki Kagaku Kogyo K. K., Japan

P-18: Fabrication of Rod-Like β-Si₃N₄ Particles by Gas Pressure Sintering followed by rinsing away added sintering aids

Nanako Sugimoto*, Junichi Tatami, and Motoyuki Iijima, Yokohama National University, Japan; Takuma Takahashi, Kanagawa Academy of Science and Technology, Japan

P-19: Local Mechanical Properties of non-Oxide Ceramics Measured by Micro-Cantilever Beam Specimens

Junichi Tatami* and Masaki Katayama, Yokohama National University, Japan; Takuma Takahashi and Tsukahara Yahagi, Kanagawa Academy of Science and Technology, Japan; Takahiro Horiuchi and Masahiro Yokouchi, Kanagawa Industrial Technology Center, Japan; Yasuda Kouichi, Tokyo Institute of Technology, Japan

P-20: Preparation of Transparent α-SiAlON Phosphor Bulk Ceramics

Junichi Tatami* and Yuki Sano, Yokohama National University, Japan; Takuma Takahashi, Kanagawa Academy of Science and Technology, Japan; Masahiro Yokouchi, Kanagawa Industrial Technology Center, Japan

Tuesday, May 27

P-21: Sintering Behavior of Si₃N₄ Ceramics Prepared from Si-Si₃N₄ Mixture

Shoji Iwakiri*, Fine Ceramics Research Association, Japan; Hideki Hyuga, You Zhou, and Kiyoshi Hirao, Fine Ceramics Research Association and National Institute of Advanced Industrial Science and Technology (AIST), Japan

Wednesday, May 28

Applications

8:30 – 10:05, May 28 (Wed), Hall A (Royal Hall Houou)

8:30 - 8:55

A3-1: SiAlON Ceramics for Structural Applications What is Next? - Challenges and Potentials- (Invited)

Hasan Mandal, Sabanci University, Turkey & MDA Advanced Ceramics Ltd., Turkey; Ferhat Kara, Servet Turan, and Alpagut Kara, Anadolu University, Turkey & MDA Advanced Ceramics Ltd. Turkey

8:55 - 9:20

A3-2: Si-Based Ceramics and Composites for Clean and Efficient Energy Technologies (Invited)

Hua-Tay Lin, Materials Science and Technology Division Oak Ridge National Laboratory, USA

9:20 - 9:45

A3-3: Development of AlN Powder and Ceramics for High Thermal Conductivity Parts (Invited)

Yukihiro Kanechika*, Ken Sugawara, Saiko Fujii, Yuki Chikashige, Yutaka Fukunaga and Meng Wan, Tokuyama Corporation, Japan

9:45 - 10:05

A3-4: Fabrication of Long Silicon Nitride Pipes by Local Heat-Joining Technique for High-Temperature Applications

Mikinori Hotta*, Naoki Kondo, Hideki Kita and Tatsuki Ohji, National Institute of Advanced Industrial Science and Technology (AIST), Japan

Polymer-Derived Process

10:05 – 11:50, May 28 (Wed), Hall A (Royal Hall Houou)

10:05 - 10:30

A3-5: Conversion of Polysilazanes Into Ceramics and Ceramic-Based Hybrid Materials (Invited)

Yoshiyuki Sugahara, Waseda University, Japan

10:30 - 10:50

A3-6: Formation of Aluminum Nitride From Metal-Organic Precursors Synthesized by Reacting Aluminum Tri-Chloride With Bis(Trimethylsilyl)Carbodiimide

Yohei Shimokawa* and Akikazu Fujiwara, Nagoya Institute of Technology, Japan; Emanuel Ionescu and Gabriela Mera, Technische Universität Darmstadt, Germany; Sawao Honda and Yuji Iwamoto, Nagoya Institute of Technology, Japan ; Ralf Riedel, Technische Universität Darmstadt, Germany

10:50 - 11:10

A3-7: Elaboration of Ceramic Matrix Composite From a preceramic Polymer Including Inert Fillers

Brice Taillet*, René Pailler, and Francis Teyssandier, Laboratoire des Composites ThermoStructuraux (LCTS), France

Wednesday, May 28

11:10 - 11:30

A3-8: Ab initio Computations of Electronic, Mechanical, Lattice Dynamical and Thermal Properties of ZrP_2O_7

Huimin Xiang*, Zhihai Feng and Yanchun Zhou, Aerospace research Institute of Materials and Processing Technology, P.R. China

11:30 - 11:50

A3-9: Synthesis of Lithium Orthosilicate and Fabrication of Pebbles by Solid State Reaction Process

D. Mandal*, Bhabha Atomic Research Centre, India

Synthesis

8:30 – 10:55, May 28 (Wed), Hall A (Royal Hall Houou)

8:30 - 8:55

B3-1: One-step Mechanical Processing to Create Composite Particles for Advanced Materials (Invited)

Makio Naito*, Akira Kondo, Takahiro Kozawa, Eri Nakamura and Hiroya Abe, Osaka University, Japan

8:55 - 9:15

B3-2: Preparation of Silicon Nitride via Catalytic Nitridation

Haijun Zhang*, Yajun Gu, Faliang Li, Lilin Lu, and Shaowei Zhang*, Wuhan University of Science and Technology, P.R. China

9:15 - 9:35

B3-3: Na-flux Synthesis and Crystal Structure Analysis of Alkaline-Earth Silicon Nitrides

Hisanori Yamane* and Morito Haruhiko, Tohoku University, Japan

9:35 - 9:55

B3-4: Thermogravimetric Analysis on the Formation of Indium Nitride From the Reaction between Indium Oxide and Ammonia

Takashi Miyahara and Hajime Kiyono*, Shibaura Institute of Technology, Japan

9:55 - 10:15

B3-5: Low Temperature Molten Salt Synthesis of Non-Oxide Ceramics

Matthana Khangkhamano, University of Exeter, UK; Haijun Zhang, Wuhan University of Science and Technology, P.R. China; H. Aygul Yeprem, Yildiz Technical University, Turkey; Shaowei Zhang*, University of Exeter, UK & Wuhan University of Science and Technology, P.R. China

10:15 - 10:35

B3-6: β -SiAlON Ceramic Hollow Fibers for Membrane Distillation

Xin Xu*, Jun-Wei Wang, Jiang-Wei Zhang, and Chu-Sheng Chen, University of Science and Technology of China, P.R. China

10:35 - 10:55

B3-7: Si_3N_4 , AlN, and SiAlON Ceramic Fibers Derived From Facile Electrospinning

Qian Liu*, Qi Lu, Guanghui Liu, and Qinhuai Wei, Shanghai Institute of Ceramics, Chinese Academy of Sciences, P.R. China

Wednesday, May 28

Mechanical Properties

10:55 – 11:55, May 28 (Wed), Hall B (Royal Hall Kujaku)

10:55 - 11:15

B3-8: International Round-Robin on Indentation Fracture Resistance of Major Structural Ceramics Using Powerful Optics

Hiroyuki Miyazaki* and Yu-ichi Yoshizawa, National Institute of Advanced Industrial Science and Technology (AIST), Japan

11:15 - 11:35

B3-9: Evaluation of Fracture Toughness of Nano-Polycrystalline Stishovite Using Micro Cantilever Specimens

Kimiko Yoshida*, F. Wakai, Y. Shinoda, T. Akatsu and M. Sone, Tokyo Institute of Technology, Japan; N. Nishiyama, Deutsches Elektronen-Synchrotron, Germany

11:35 - 11:55

B3-10: Measurements of Fracture Toughness of Ceramic Thin Plates for Power Modules

Hiroyuki Miyazaki*, Yu-ichi Yoshizawa, Kiyoshi Hirao and Tatsuki Ohji, National Institute of Advanced Industrial Science and Technology (AIST), Japan