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# The 26<sup>th</sup> International Japan-Korea Seminar on Ceramics

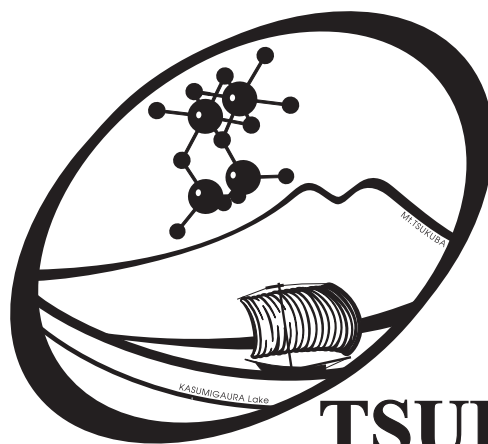
24<sup>th</sup>-26<sup>th</sup>, November, 2009, Tsukuba, Japan

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## Program

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**TSUKUBA**  
2009

Organized by

Organizing Committee of the 26<sup>th</sup> International Japan-Korea Seminar on Ceramics  
Executive Committee of the 26<sup>th</sup> International Japan-Korea Seminar on Ceramics

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# The 26<sup>th</sup> International Japan-Korea Seminar on Ceramics

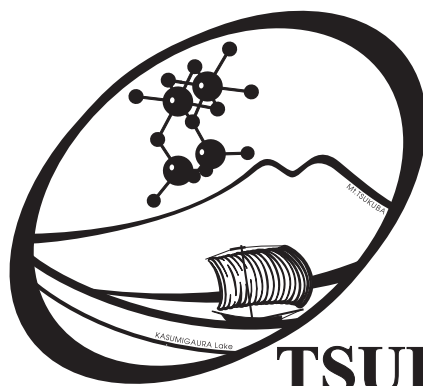
24<sup>th</sup>-26<sup>th</sup>, November, 2009, Tsukuba, Japan

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## Program

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## The 26<sup>th</sup> International Japan-Korea Seminar on Ceramics Schedule Overview

### — Opening Ceremony & Keynote Lectures —

#### 24 November Opening Ceremony and Keynote lectures at Room A “Auditorium”

09:30-09:50	Opening Ceremony Keynote Lectures		
09:50-10:30 Break	1A-1 (Keynote 1)	Prof. Lidong CHEN, Shanghai Institute of Ceramics (Chinese Academy of Sciences), Deputy Director, China	
10:50-11:30	1A-2 (Keynote 2)	Dr. Doh-Yeon KIM, Ulsan University, President, Korea (The Former Minister of Ministry of Education and Science)	
11:30-12:10	1A-3 (Keynote 3)	Dr. Teruo KISHI, NIMS Advisor (The Former President of NIMS), Japan	

### — Technical Presentation —

#### 24 November Oral Session at “Room B, C, D & E”

	Room B	Room C	Room D	Room E
14:30-16:15	Electronic Ceramics (1)	Energy & Ecological Materials (1)	Isotope symposium (1)	Structural Ceramics (1)
	Room B	Room C	Room D	Room E
16:30-18:00	Electronic Ceramics (2)	Energy & Ecological Materials (2)	Isotope symposium (2)	Structural Ceramics (2)

#### 24 November Poster Session at “Multi Purpose Hall”

	Multi Purpose Hall
13:00-14:20	Poster

#### 24 November Banquet at “Multi Purpose Hall”

	Multi Purpose Hall
18:30-	Banquet

#### 25 November Oral Session at “Room B, C, D & E”

	Room B	Room C	Room D	Room E
09:00-10:30	Electronic Ceramics (3)	Energy & Ecological Materials (3)	Nano-crystal Ceramics (1)	Structural Ceramics (3)
10:45-12:00	Electronic Ceramics (4)	Energy & Ecological Materials (4)	Nano-crystal Ceramics (2)	Glass & Opt-Electronic Materials (1)

#### 25 November Oral Session at “Room B, C, D & E”

	Room B	Room C	Room D	Room E
13:00-14:30	Nano-Materials (1)	Synthesis & Processing (1)	Thin films & Layers(1)	Glass & Opt-Electronic Materials (2) & Bio Materials (1)
14:45-16:15	Nano-Materials (2)	Synthesis & Processing (2)	Thin films & Layers(2)	Bio Materials (2)
16:30-18:00	Nano-Materials (3)	Synthesis & Processing (3)		

### — Excursion —

#### 26 November

09:00-18:30	Trip to Tsukuba city and Kasama city (tentative plan)
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## Session Lists

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## PROGRAM

- Keynote Lectures : 40 min
  - Invited Talks : 30 min
  - Oral Presentations : 15 min
- Remark : \_\_\_ Young Ceramist Best Presentation Award candidates

**Opening Ceremony and Keynote Lectures**  
**November 24th, 2009 Auditorium 9:30-12:10**

- 1A-01** **«Keynote Lecture»** [ Chair : Prof. KOUMOTO Kunihito ]  
**Research on Thermoelectric Materials and Devices in China**  
Lidong CHEN  
(Shanghai Institute of Ceramics, Chinese Academy of Sciences)
- 1A-02** **«Keynote Lecture»** [ Chair : Honorary Prof. KIM Byong-Ho ]  
**Innovations in Engineering and Science**  
Doh-Yeon KIM  
(Ulsan University / Former Minister of Ministry of Education and Science)
- 1A-03** **«Keynote Lecture»** [ Chair : Dr. HANEDA Hajime ]  
**Research on Ceramics : Current Status and Future Directions in Japan**  
Teruo KISHI  
(National Institute for Materials Science)

**Oral Session**  
**Electronic Ceramics (1)**  
**November 24th, 2009 Room B 14:30-16:15**  
**[ Chair : Dr. CHOI Si-Young & Prof. WADA Satoshi ]**

- 1B-I\_1** **«Invited»**  
**High Curie Temperature Lead-Free Piezoceramics**  
Richard E EITEL, Serhiy O LEONTSEV  
(University of Kentucky)
- 1B-01** **Domain Research on Lead Free Piezoelectric Ceramics**  
Toshio OGAWA<sup>1</sup>, Mashito FURUKAWA<sup>2</sup>, Takeo TSUKADA<sup>2</sup>  
(1 Shizuoka Institute of Science and Technology, 2 TDK Corporation)
- 1B-02** **High Temperature X-Ray Diffraction and Raman Spectroscopy Study of (K<sub>0.5</sub> Na<sub>0.5</sub>) NbO<sub>3</sub> Ceramics Sintered in Oxidizing and Reducing Atmospheres.**  
John FISHER, Dibyaranjan ROUT, Kyoung-Seok MOON, Suk-Joong L. KANG  
(Korea Advanced Institute of Science and Technology)
- 1B-03** **Raman Spectra of Stoichiometry and Non-Stoichiometry NaNbO<sub>3</sub>.**  
Koichiro TSUZUKU  
(Taiyo Yuden Co., Ltd.)
- 1B-04** **Synthesis and Characterization of (Bi<sub>1/2</sub> Na<sub>1/2</sub>)TiO<sub>3</sub> Nanoparticles by Hydrothermal Process**  
Hyun Ju KIM, Dong-Sik BAE  
(Changwon National University)

**1B-05 Microstructure, Dielectric and Raman Study of Sr Doped Sodium Bismuth Titanate Relaxor Ferroelectrics**

Dibyaranjan ROUT, Kyoung-Seok MOON, Suk-Joong L. KANG  
(Korea Advanced Institute of Science and Technology)

Break (15)

Oral Session

Electronic Ceramics (2)

November 24th, 2009 Room B 16:30-18:00

[ Chair : Prof. EITEL Richard & Prof. SUZUKI Hisao ]

**1B-06 Energy Storage Capability of Weakly Coupled Ferroelectric Thin Films**

Do-Kyun KWON, Min Hyuk LEE  
(Korea Aerospace University)

**1B-07 Resistance Switching and Retention Behaviors in Polycrystalline La-Doped SrTiO<sub>3</sub> Ceramics Chip Devices**

Sakyo HIROSE, Akinori NAKAYAMA, Hideaki NIIMI, Keisuke KAGEYAMA, Hiroshi TAKAGI, Hideharu IEKI  
(Murata Manufacturing Co., Ltd.)

**1B-08 BaTiO<sub>3</sub>-Matrix Polymer Composite Capacitors by Aerosol Deposition Method**

Yoon-Hyun KIM, Song-Min NAM  
(Kwangwoon University)

**1B-09 Crossover of the Cation Vacancy Type in La-Doped Sr<sub>1-x</sub>Ba<sub>x</sub>TiO<sub>3</sub> Perovskite Ceramics**

Lin WANG, Taras KOLODIAZHNYI, Yoshio SAKKA  
(National Institute for Materials Science)

**1B-10 The Effect of Ca and Zr Incorporation Into (Ba<sub>1-x</sub>Ca<sub>x</sub>)<sub>m</sub>(Ti<sub>1-y</sub>Zr<sub>y</sub>)O<sub>3</sub> Ceramics**

Youn Kyu CHOI, Jung Sang HAN, Takuya HOSHINA, Hiroaki TAKEDA, Takaaki TSURUMI  
(Tokyo Institute of Technology)

**1B-11 Dielectric and Thermal Properties of SrO-Al<sub>2</sub>O<sub>3</sub>-B<sub>2</sub>O<sub>3</sub> Glasses for Electronics Devices**

Seongjin HWANG, Yonghyeon YU, Hyunsang JUNG, Hyungsun KIM  
(Inha University)

Oral Session

Energy & Ecological Materials (1)

November 24th, 2009 Room C 14:30-16:15

[ Chair : Dr. SAKAGUCHI Isao & Prof. YOON Soon-Gil ]

**1C-I-1 <<Invited>>**

**Electrophoretic Deposition for the Fabrication of Solid Oxide Fuel Cells**

Enrico TRAVERSA<sup>1,2</sup>  
(1 National Institute for Materials Science, 2 University of Rome Tor Vergata)

**1C-01 Atomic structure of [100]/{210}  $\Sigma = 5$  grain boundary in CeO<sub>2</sub>**

Hajime HOJO<sup>1</sup>, Teruyasu MIZOGUCHI<sup>1</sup>, Hiromichi OHTA<sup>2,3</sup>, Naoya SHIBATA<sup>1,3</sup>, Takahisa YAMAMOTO<sup>1,4</sup>, Yuichi IKUAHRA<sup>1,4,5</sup>

(1 The University of Tokyo, 2 Nagoya University, 3 Japan Science and Technology Agency, 4 Japan Fine Ceramics Center, 5 Tohoku University)

**1C-02 Improved Flatness of Tape-casted and Cofired (NiO-CGO)/ CGO Multi-layers for Anode-Supported Planar Solid Oxide Fuel Cells**

Ravindra K GUPTA, Ik Jin CHOI, Yong Soo CHO  
(Yonsei University)

**1C-03 Effects of Electrolyte Thickness and Cathode Particle Size on Electric Performance of Anode-Supported Gd-Doped Ceria Cell**

Yoshihiro HIRATA<sup>1</sup>, Kenshi MATSUMOTO<sup>1</sup>, Soichiro SAMESHIMA<sup>1</sup>, Naoki MATSUNAGA<sup>1</sup>, Minako NAGAMORI<sup>1</sup>, Taro SHIMONOSONO<sup>2</sup>

(1 Kagoshima University, 2 National Institute for Materials Science)

**1C-04 Effect of Nickel Diffusion on the Microstructures of Gd-doped Ceria (GDC) Electrolyte Film supported by NiO-GDC Cermet Anode**

Yongke YAN, Fei YE, Toshiyuki MORI, Ding Rong OU, Zhipeng LI  
(National Institute for Materials Science)

**1C-05 Improvement of Ionic Conductivity of Gadolinium-Doped Ceria by Microstructure Design**

Fei YE<sup>1</sup>, Toshiyuki MORI<sup>1</sup>, Ding Rong OU<sup>1</sup>, Jin ZOU<sup>2</sup>, John DRENNAN<sup>2</sup>  
(1 National Institute for Materials Science, 2 The University of Queensland)

**Break (15)**

**Oral Session**

**Energy & Ecological Materials (2)**

**November 24th, 2009 Room C 16:30-18:00**

**[ Chair : Prof. TRAVERSA Enrico & Prof. HIRATA Yoshihiro ]**

**1C-06 First principles calculations of defect formation behavior in proton conductive LaNbO<sub>4</sub>.**

Akihide KUWABARA<sup>1</sup>, Reidar HAUGSRUD<sup>2</sup>, Svein STØLEN<sup>2</sup>, Truls NORBY<sup>2</sup>  
(1 Japan Fine Ceramics Center, 2 University of Oslo)

**1C-07 NiO/YSZ-YSZ Nanocomposite Functional Layer for High-Performance SOFC Anodes**

Dae Il YOON, Jong Jin LEE, Sang Hoon HYUN  
(Yonsei University)

**1C-08 Effect of the Grain Size on the Electrical Property for Scandia-stabilized Zirconia**

Taro SHIMONOSONO<sup>1</sup>, Yoshio SAKKA<sup>1,2</sup>  
(1 National Institute for Material Science, 2 World Premier International Center Initiative for Materials Nanoarchitronics)

**1C-09 Fabrication and Performance Evaluation of Electrolyte Combined  $\alpha$ -LiAlO<sub>2</sub> Matrices for MCFCs**

Hyun-Jong CHOI<sup>1</sup>, Jong-Jin LEE<sup>1</sup>, Sang-Hoon HYUN<sup>1</sup>, Hee-Chun LIM<sup>2</sup>  
(1 Yonsei University, 2 Korea Electric Power Research Institute)

**1C-10 Influence of Ionized Pt and Ionized Ce Content on Surface of Pt-CeOX/CB Composites to DMFC Anode Performance**

Hiroataka TOGASAKI<sup>1,3</sup>, Toshiyuki MORI<sup>1,3</sup>, Fei YE<sup>1</sup>, Hideki YOSHIKAWA<sup>2</sup>, Shigenori UEDA<sup>2</sup>, Yoshiyuki YAMASHITA<sup>2</sup>, Keisuke KOBAYASHI<sup>2</sup>, Vladimir MATOLIN<sup>4</sup>, John DRENNAN<sup>5</sup>  
(1 National Institute for Materials Science, 2 Spring—8 National Institute for Materials Science, 3 Hokkaido University Faculty of Science, 4 Charles University, 5 University of Queensland)

**1C-11 Anion-exchange Membrane Fuel Cell using Polysiloxane Based Membrane**

Satoshi SUZUKI, Masayuki NAGAI  
(Tokyo City University)

Oral Session

Isotope Symposium (1)

November 24th, 2009 Room D 14:30-16:15

[ Chair : Dr. OHASHI Naoki ]

**1D-01 Introduction**

Naoki OHASHI  
(National Institute for Materials Science)

**1D-02 <<Invited>>**

**Diffusion Phenomena in Isotopically Controlled Semiconductor Heterostructures**

Hartmut BRACHT  
(University of Muenster)

**1D-03 <<Invited>>**

**Process Monitoring using Silicon Stable Isotopes as Markers**

Kohei. M. ITOH, M. UEMATSU  
(Keio University)

Break (15)

Oral Session

Isotope Symposium (2)

November 24th, 2009 Room D 16:30-18:00

[ Chair : Dr. OHASHI Naoki ]

**1D-04 <<Invited>>**

**Oxygen-isotope Exchange Effect in Ferroelectric Oxides**

Mitsuru ITOH  
(Tokyo Institute of Technology)

**1D-05 Diffusion Behavior and Defect Structure in Isotopic Heterostructural Thin Films with Wurtzite**

H. HANEDA <sup>1,2</sup>, T. OHGAKI, <sup>1</sup>, I. SAKAGUCHI <sup>1</sup>, S. HISHITA <sup>1</sup>, K. MASTUMOTO <sup>1,2</sup> Y. ADACHI <sup>1</sup>, N.OHASHI <sup>1,2</sup>  
(1 National Institute for Materials Science, 2 Kyushu University)

**Oral Session**  
**Structural Ceramics (1)**  
**November 24th, 2009 Room E 14:30-16:15**  
**[ Chair : Prof. KOMEYA Katsutoshi & Prof. KIM Ik-Jin ]**

**1E-I\_1** **«Invited»**

**Engineering Porosity in Silicon Carbide Ceramics**

Young-Wook KIM<sup>1</sup>, Jung-Hye EOM<sup>1</sup>, Su-Ho CHAE<sup>1</sup>, In-Hyuck SONG<sup>2</sup>, Hai-Doo KIM<sup>2</sup>  
*(1 The University of Seoul, 2 Korea Institute of Materials Science)*

**1E-01** **The Carbon Black Effect in Liquid Silicon Infiltration Process for C/C-SiC Composites**

Seyoung KIM<sup>1</sup>, Sangkuk WOO<sup>1</sup>, Insub HAN<sup>1</sup>, Byungkoog JANG<sup>2</sup>  
*(1 Korea Institute of Energy Research, 2 National Institute for Materials Science)*

**1E-02** **Synthesis and Tribological Characterization of Carbon-Based Multi-Layers Derived from SiC-TiC Composite Ceramics**

Heung-Teak BAE<sup>1</sup>, Ji-Hoon JEONG<sup>1</sup>, Hyun-Ju CHOI<sup>2</sup>, Dae-Soon LIM<sup>1</sup>  
*(1 Korea University, 2 University of Central Florida)*

**1E-03** **Characteristics of New SiC-BN Micro-Composite Material**

Seitaro KOBAYASHI, Fumihiko KUROKAWA, Masato NISHIKAWA, Yasuhito FUSHII  
*(DENKI KAGAKU KOGYO CO., LTD.)*

**1E-04** **Effects of TaSi<sub>2</sub> Additive on Sintering, Microstructure and Properties of ZrB<sub>2</sub>-SiC Composites Prepared by Spark Plasma Sintering**

Chunfeng HU<sup>1</sup>, Yoshio SAKKA<sup>1,2</sup>, Hidehiko TANAKA<sup>1</sup>, Toshiyuki NISHIMURA<sup>1</sup>, Shuqi GUO<sup>1</sup>, Salvatore GRASSO<sup>1,2</sup>  
*(1 National Institute for Materials Science, 2 University of Tsukuba)*

**1E-05** **Processing and Properties of ZrB<sub>2</sub>-based Ceramics**

Seongwon KIM<sup>1</sup>, Jung-Min CHAE<sup>1,2</sup>, Sung-Min LEE<sup>1</sup>, Yoon-Suk OH<sup>1</sup>, Hyung-Tae KIM<sup>1</sup>, San NAM<sup>2</sup>  
*(1 Korea Institute of Ceramic Engineering and Technology, 2 Korea University)*

**Break (15)**

**Oral Session**  
**Structural Ceramics (2)**  
**November 24th, 2009 Room E 16:30-18:00**  
**[ Chair : Dr. NARIMATSU Eiichirou & Prof. KIM Young-Wook ]**

**1E-06** **Etching of Surface Native Oxides on Zirconium Diboride Using Dilute Hydrofluoric Acid Solution**

Hyeon-cheol OH<sup>1</sup>, Se-hyuk JUNG<sup>1</sup>, Jin-Young JUNG<sup>1</sup>, Sea-hoon LEE<sup>2</sup>, Sung-churl CHOI<sup>1</sup>  
*(1 Hanyang University, 2 Korea Institute of Materials Science)*

**1E-07** **Nano-sized TiN dispersed Si<sub>3</sub>N<sub>4</sub> ceramics as new bearing balls**

Katsutoshi KOMEYA<sup>1</sup>, Junichi TATAMI<sup>1</sup>, Toru WAKIHARA<sup>1</sup>, Tomohiro YAMAKAWA<sup>1</sup>, Hiroshi KOMORITA<sup>2</sup>, Yoshiyuki FUKUDA<sup>2</sup>, Tomoya HATTORI<sup>3</sup>, Minoru TAKEDA<sup>3</sup>  
*(1 Yokohama National University, 2 Toshiba Materials Co. Ltd., 3 JTEKT Corp)*

**1E-08** **Fabrication and Evaluation of Y<sub>2</sub>O<sub>3</sub>-HfO<sub>2</sub>-SiO<sub>2</sub>-doped Si<sub>3</sub>N<sub>4</sub> Ceramics**

Sayaka HAGIMURA, Junichi TATAMI, Toru WAKIHARA, Katsutoshi KOMEYA, Takeshi MEGURO  
*(Yokohama National University)*

**1E-09 Effect of Re<sub>2</sub>O<sub>3</sub>-MgO Addition on the Microstructure and Mechanical Properties of Hot-Pressed RBSN**

Jae-Woong KO, Sang-Hum YEON, Sea-Hoon LEE, Young-Jo PARK, Hai-Doo KIM  
(Korea Institute of Materials Science)

**1E-10 Development of Electrically Conductive Si<sub>3</sub>N<sub>4</sub> Ceramics by Adding Carbon Nanotubes**

Junichi TATAMI<sup>1</sup>, Tomohiro YAMAKAWA<sup>1</sup>, Sara YOSHIO<sup>1</sup>, Kenji TAKAHASHI<sup>1</sup>, Toru WAKIHARA<sup>1</sup>,  
Katsutoshi KOMIYA<sup>1</sup>, Takeshi MEGURO<sup>1</sup>, Hiromi NAKANO<sup>2</sup>  
(1 Yokohama National University, 2 Toyohashi University of Technology)

**1E-11 Chemical Stability of YF<sub>3</sub> Films Under Fluorine Plasma Condition**

Dae-Min KIM<sup>1,2</sup>, Kwan-young CHOI<sup>1</sup>, Sung-Min LEE<sup>1</sup>, Hyung-Tae KIM<sup>1</sup>, Seong-Won KIM<sup>1</sup>, Yoon-Suk OH<sup>1</sup>, \*Dae-Soon LIM<sup>2</sup>  
(1 Korea Institute of Ceramic Engineering and Technology, 2 Korea University)

**Oral Session**

**Electronic Ceramics (3)**

**November 25th, 2009 Room B 9:00-10:30**

**[ Chair : Prof. SHIN Dong-Chan & Prof. CHO Yong-Soo ]**

**2B-I\_1 <<Invited>>**

**Defects and Doping in Amorphous Oxide Semiconductor Studied by First-Principles Calculations**

Toshio KAMIYA<sup>1,2</sup>, Kenji NOMURA<sup>2</sup>, Hideo HOSONO<sup>1,2</sup>  
(1 Tokyo Institute of Technology, 2 Japan Science and Technology Agency)

**2B-01 Electrical Properties of Al Doped ZnO Multilayer High Transparent Conductive Oxide Films**

Hyun-Jin CHO, Kyung-Woo PARK, Jun-Ku AHN, Nak-Jin SEONG, Soon-Gil YOON  
(Chungnam National University)

**2B-02 The Study of Conducting Materials incorporation into Direct-Patternable SnO<sub>2</sub> Thin Films formed by Photochemical Metal-Organic Deposition**

Hyuncheol KIM<sup>1</sup>, Su Cheol GONG<sup>2</sup>, Ho Jung CHANG<sup>2</sup>, Hyeongtag JEON<sup>3</sup>, Hyung-Ho PARK<sup>1</sup>  
(1 Yonsei University, 2 Dankook University, 3 Hanyang University)

**2B-03 The Effects of Incorporation of ZnO Nanoparticles on MEH-PPV Based Organic-Inorganic Hybrid Solar Cells**

Yong-June CHOI<sup>1</sup>, Hyung-Ho PARK<sup>1</sup>, Stephen GOLLEDGE<sup>2</sup>  
(1 Yonsei University, 2 University of Oregon)

**2B-04 Silicon Purification Through Unidirectional Solidification for Solar Cell**

Kyoon CHOI<sup>1</sup>, Jung-Hyun EUM<sup>1,2</sup>, Hyo-Han KIM<sup>1</sup>, Sahn NAHM<sup>2</sup>  
(1 Korea Institute of Ceramic Engineering & Technology, 2 Korea University)

**Break (15)**

**Oral Session**  
**Electronic Ceramics (4)**  
**November 25th, 2009 Room B 10:45-12:00**  
**[ Chair : Prof. NAM Song-Min & Dr. OKAMOTO Tomoichiro ]**

**2B-I\_2** **«Invited»**

**Possibility of NO<sub>x</sub> Sensing by Using Titania Doped Ferrite Epitaxial Thin Film**

Kazuo SHINOZAKI<sup>1</sup>, Yusuke INABA<sup>1</sup>, Toru HARA<sup>1,2</sup>, Takanori KIGUCHI<sup>3</sup>, Naoki WAKIYA<sup>4</sup>, Jeffrey CROSS<sup>1</sup>, Osamu SAKURAI<sup>1</sup>

*(1 Tokyo Institute of Technology, 2 Taiyo Yuden Co., 3 Tohoku University, 4 Shizuoka University)*

**2B-05 Sensing Characteristics of Zirconia Based Amperometric NO<sub>x</sub> Sensor Using LaSr-Based Perovskite-Type Oxide Sensing Electrode**

Taro UEDA, Takayuki NAGANO, Hajime OKAWA, Seiji TAKAHASHI

*(Japan Fine Ceramics Center)*

**2B-06 Organic Gas Sensing Performance of TiO<sub>2</sub> Nanotube-Based Porous Films**

Min-Hyun SEO<sup>1</sup>, Masayoshi YUASA<sup>2</sup>, Tetsuya KIDA<sup>1</sup>, Jeung-Soo HUH<sup>2</sup>, Noboru YAMAZOE<sup>1</sup>, Kengo SHIMANOE<sup>1</sup>

*(1 Kyushu University, 2 Kyungpook National University)*

**2B-07 Grain Boundaries and Ion Diffusion in Zinc Oxide**

Craig A.J. FISHER<sup>1</sup>, Hideaki MATSUBARA<sup>1</sup>, Hajime HANEDA<sup>2</sup>

*(1 Japan Fine Ceramics Center, 2 National Institute for Materials Science)*

**Lunch (60)**

**Oral Session**  
**Nano-Materials (1)**  
**November 25th, 2009 Room B 13:00-14:30**  
**[ Chair : Prof. JANG Byungkoog & Prof. IKUHARA Yuichi ]**

**2B-I\_3** **«Invited»**

**Self-Template Growth of Ferroelectric Bi<sub>4</sub>Ti<sub>3</sub>O<sub>12</sub> Nano-plate Array**

Yuji MATSUMOTO, Akira IMAI, Ryota TAKAHASHI

*(Tokyo Institute of Technology)*

**2B-08 Synthesis and Applications of Oxide Nanofibers**

Jae Young PARK, Sun-Woo CHOI, Sang Sub KIM

*(Inha University)*

**2B-09 Electrical Properties of the copper oxide nanowires using the copper thin films**

Yeon-Woong PARK<sup>1</sup>, Nak-Jin SEONG<sup>1</sup>, Soon-Gil YOON<sup>1,2</sup>

*(1 School of Nano Science and Technology, 2 Chungnam National University)*

**2B-10 Effect of External Electric Field on Formation of Fibrous Nanomaterials by Electric Current Heating of SiC Rod**

Tomoichiro OKAMOTO, Shunsuke SUSA, Takayuki YAMASHITA, Masasuke TAKATA

*(Nagaoka University of Technology)*

**2B-11 Self-Assembled Mono- and Multilayers of Zeolite Nanocrystals encapsulated Semiconductors and Metal Clusters**

Wei ZHAO, Ik Jin KIM  
(Hanseο University)

Break (15)

Oral Session  
Nano-Materials (2)  
November 25th, 2009 Room B 14:45-16:15  
[ Chair : Prof. SUYAMA Yoko & Dr. LABHSETWAR Nitin ]

**2B-I\_4 <<Invited>>**

**Development of Nano-Materials for the Application of Solar Cell, Photocatalyst and Water Photolysis**

Sang-Yeup PARK<sup>1,2</sup>  
(1 Kangnung National University, 2 Seoul National University)

**2B-12 Fabrication and Characterization of TiO<sub>2</sub>-based Photocatalytic Thin films by Aerosol-deposition.**

Jungho RYU, Dong-Soo PARK, Byung-Dong HAHN, Jong-Jin CHOI, Byoung-Kuk LEE, Woon-Ha YOON, Joon Hwan CHOI  
(Korea Institute of Materials Science)

**2B-13 Fabrication of Novel Mesoporous Catalysts for Development of Photoelectrochemical Cells**

SidduluNaidu TALAPANENI, Ajayan VINU, Pavuluri SRINIVASU, Toshiyuki MORI  
(National Institute for Material Science)

**2B-14 Energy Transfer and Heat-treatment Effect of Photoluminescence in Eu-doped TbPO<sub>4</sub> Nanowires**

Weihua DI, Yoshio SAKKA  
(National Institute for Materials Science)

**2B-15 Relationship between Particle Size and Photochromic Characteristics of Tungsten Oxide Films Prepared by Electric Current Heating Method using Tungsten Wire**

Takumi HAGIZAWA, Takayuki HONMA, Yuichiro KUROKI, Tomoichiro OKAMOTO, Masasuke TAKATA  
(Nagaoka University of Technology)

Break (15)

Oral Session  
Nano-Materials (3)  
November 25th, 2009 Room B 16:30-18:00  
[ Chair : Prof. MATSUMOTO Yuji & Dr. PEE Jae-Hwan ]

**2B-I\_5 <<Invited>>**

**Characterization and Control of Ceramic Nanoparticle Dispersion and Aggregation Behavior in Liquid**

Hidehiro KAMIYA, M. KOBAYAKAWA, M. IJIMA  
(Tokyo University of Agriculture and Technology)

**2B-16 Acidic Hydrothermal Conversion of Degussa P25 into Rutile Nanocrystals and Particle Morphology Control**

Ji-Guang LI<sup>1</sup>, Xiaodong LI<sup>2</sup>, Yonghua LENG<sup>1</sup>, Xudong SUN<sup>2</sup>, Takamasa ISHIGAKI<sup>1</sup>  
(1 National Institute for Materials Science, 2 Northeastern University)

**2B-17 Bridged-Type Mesocrystals in Biomineralization and Biomimetic Syntheses**

Yuya OAKI, Hiroaki IMAI  
(Keio University)

**2B-18 Development of an Ultra-Transparent and Hydrophobic Glass Plate Covered with Silica Nanoparticles and a Monomolecular Fluorocarbon Layer**

Yasumasa YAMAGAMI, Shintaro DOI, Yuji OHKUBO, Seiichi TAKEUCHI, Kazuhiro FUKUMA, Shogo ONISHI, Kazufumi OGAWA  
(Kagawa university graduate school)

**2B-19 Elastic Property Measurements for Single Submicron Particles**

Hisato OGISO, Mikiko YOSHIDA, Jun AKEDO  
(National Institute of Advanced Industrial Science and Technology)

**Oral Session**

**Energy & Ecological Materials (3)**

November 25th, 2009 Room C 9:00-10:30

[ Chair : Dr. ADACHI Yutaka & Prof. PARK Sang-Yeup ]

**2C-I\_1 «Invited»**

**Ceramics in Environmental Catalysis: Applications and Challenges**

Nitin LABHSETWAR<sup>1</sup>, S. RAYALU<sup>1</sup>, Takefumi MITSUHASHI<sup>2</sup>, Hajime HANEDA<sup>2</sup>  
(1 National Environmental Engineering Research Institute (NEERI-CSIR), 2 National Institute for Materials Science)

**2C-01 The Study of Photo-induced Hydrophilicity of Photocatalytic Thin Films**

Ken-ichi KATSUMATA<sup>1</sup>, Yukiaki OONO<sup>2</sup>, Koji TOMITA<sup>2</sup>, Munetoshi SAKAI<sup>3</sup>, Akira FUJISHIMA<sup>3</sup>, Nobuhiro MATSUSHITA<sup>1</sup>, Kiyoshi OKADA<sup>1</sup>  
(1 Tokyo Institute of Technology, 2 Tokai University, 3 Kanagawa Academy of Science and Technology)

**2C-02 The Photocatalytic Activity of TiO<sub>2</sub> Particles Supported by Graphite Powders**

Satoshi OKANO, Masaki SENOO, Taichi ITO, Saeki YAMAMURO, Toshiro TANAKA  
(Ehime University)

**2C-03 Partial Oxidative Reforming of Methane Catalyzed by Modified Ni-Based Catalysts in an Oxygen-Permeative Membrane Reactor**

Takeshi URANO, Keiko KUBO, Tomoyuki SAITO, Atsushi HITOMI  
(TDK Corporation)

**2C-04 Removal of Metal Ions from Aqueous Solution Using the Hydroxylation of Magnesium**

Naotaka SAKAMOTO<sup>1</sup>, Katsumi KAWATA<sup>2</sup>, Koji KAKIMOTO<sup>3</sup>, Hideyuki ITO<sup>3</sup>, Tomio TAKASU<sup>3</sup>, Fumio NOGUCHI<sup>3</sup>  
(1 FUKUOKA INDUSTRIAL TECHNOLOGY CENTER, 2 ASTEC IRIE CO., LTD., 3 Kyushu Institute of Technology)

**Break (15)**

**Oral Session**  
**Energy & Ecological Materials (4)**  
**"November 25th, 2009 Room C 10:45-12:00**  
**[ Chair : Dr. CHEN Lidong & Dr. SONG In-Hyuck ]**

**2C-I\_2** **«Invited»**

**TiS<sub>2</sub>-Based Natural Superlattices for Bulk Thermoelectric Materials**

Chunlei WAN<sup>1,2</sup>, Yifeng WANG<sup>1</sup>, Ning WANG<sup>1</sup>, Kunihito KOUMOTO<sup>1,2</sup>  
(1 Nagoya University, 2 CREST, Japan Science and Technology Agency)

**2C-05 Enhanced Thermoelectric Properties of Nb-doped SrTiO<sub>3</sub> by Oxide Addition with Low Thermal Conductivity**

Ning WANG<sup>1,2</sup>, Yaoshuai BA<sup>1</sup>, Yifeng WANG<sup>1</sup>, Kyoichi FUJINAMI<sup>1,4</sup>, Kunihito KOUMOTO<sup>1,3</sup>  
(1 Nagoya University, 2 University of Electronic Science and Technology of China, 3 JST-CREST, 4 Tokuyama Corporation)

**2C-06 Thermal Conductivity Reduction in Nano-Grained SrTiO<sub>3</sub> Ceramic**

Yifeng WANG<sup>1</sup>, Kyoichi FUJINAMI<sup>1,2</sup>, Ruizhi ZHANG<sup>1,3</sup>, Ning WANG<sup>1</sup>, Chunlei WAN<sup>1,4</sup>, Yaoshuai BA<sup>1</sup>,  
Kunihito KOUMOTO<sup>1,4</sup>  
(1 Nagoya University, 2 Tokuyama Corporation 3 Shandong University 4 CREST, Japan Science and Technology Agency)

**2C-07 Catalytic Combustion-type Hydrogen Gas Sensor Using PTC thermistor of Na, Bi doped-BaTiO<sub>3</sub>**

Masayoshi YUASA<sup>1</sup>, Naoki TACHIBANA<sup>1</sup>, Tetsuya KIDA<sup>1</sup>, Noboru YAMAZOE<sup>1</sup>, Kengo SHIMANOE<sup>1</sup>  
(Kyushu University)

**Lunch (60)**

**Oral Session**  
**Synthesis & Processing (1)**  
**November 25th, 2009 Room C 13:00-14:30**  
**[ Chair : Prof. KISHIMOTO Akira & Prof. ATOU Toshiyuki ]**

**2C-I\_3** **«Invited»**

**Eco-Ceramics Processing via Preceramic Polymer**

Youngee KIM, Soo-Ryong KIM, Woo-Teck KWON  
(Korea Institute of Ceramic Engineering and Technology)

**2C-08 Fabrication of hydroxyapatite scaffolds with a novel pore structure using TBA-based freeze-gel casting/polymer sponge method**

Tae Young YANG, Jung Min LEE, Seog Young YOON, Hong Chae PARK  
(Pusan National University)

**2C-09 Sonoelectrochemical Processing of Nanostructured Titania**

Naoya ENOMOTO, Ryota NAMBA, Masaaki KURAKAZU, Miki INADA, Junichi HOJO  
(Kyushu University)

**2C-10 Phase Structure and Photoluminescent Properties of TiO<sub>2</sub>: (Eu<sup>3+</sup>- Nb<sup>5+</sup>) Nanopowders Synthesized via Ar/O<sub>2</sub> RF Thermal Plasma**

Chenning ZHANG <sup>1,2</sup>, Jiguang LI<sup>1</sup>, Yonghua LENG<sup>1</sup>, Tetsuo UCHIKOSHI<sup>1</sup>, Takayuki WATANABE<sup>2</sup>, Takamasa ISHIGAKI<sup>1,3</sup>

*(1 National Institute for Materials Science, 2 Tokyo Institute of Technology, 3 Hosei University)*

**2C-11 Synthesis and Characterization of Zn<sub>2</sub>SiO<sub>4</sub>: Mn<sup>2+</sup> Powders by a Reverse Micelle**

Dong hae LEE, Dong Sik BAE

*(Changwon national university)*

**Break (15)**

**Oral Session**

**Synthesis & Processing (2)**

**November 25th, 2009 Room C 14:45-16:15**

**[ Chair : Dr. HISHITA Shunichi & Prof. KIM Hyung-Sun ]**

**2C-12 Control of Crystallographic Orientation in AlN Prepared by Slip Casting in a Strong Magnetic Field**

Tohru S. SUZUKI, Tetsuo UCHIKOSHI, Yoshio SAKKA

*(National Institute for Materials Science)*

**2C-13 Structure of Alumina Film on Plastics**

Atsushi IWATA, Jun AKEDO

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

**2C-14 Application of Aerosol Deposition Method to Nano Porous Ceramic Thick Films**

Hyung-Jun KIM, Song-Min NAM

*(Kwangwoon University)*

**2C-15 Powder Treatment and Post-Film Formation Annealing Role in Improving the Properties of AD-Fabricated Barium Strontium Titanate Films**

Daniel POPOVICI, Jun AKEDO

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

**2C-16 Preparation and Characterization of Plasma Resistive Coating**

Dong-Soo PARK, Byung-Kuk LEE, Jungho RYU, Woon-Ha YOON, Byung-Dong HAHN, Jong-Jin CHOI

*(Korea Institute of Materials Science)*

**2C-17 Ceramic Nanoparticles for Inkjet Printing Process**

Woosuck SHIN, Renhua SHEN, Noriya IZU, Ichiro MATSUBARA

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

**Break (15)**

**Oral Session**  
**Synthesis & Processing (3)**  
**November 25th, 2009 Room C 16:30-18:00**  
**[ Chair : Dr. KIM Young-Hee & Prof. ISHIGAKI Takamasa ]**

**2C-18 Controlled Patterns of Closed Pores Utilizing the Superplastically Foaming Method**

Akira KISHIMOTO, Yusuke NISHINO, Hidetaka HAYASHI  
(*Okayama University*)

**2C-19 Effect of Dopant Cations on Sinterability of Polycrystalline Y<sub>2</sub>O<sub>3</sub>**

Masayasu KODO<sup>1</sup>, Kohei SOGA<sup>1</sup>, Hidehiro YOSHIDA<sup>2</sup>, Takahisa YAMAMOTO<sup>3</sup>  
(*1 Tokyo University of Science, 2 National Institute for Materials Science, 3 The University of Tokyo*)

**2C-20 Technology Developments of Process for Nano Silica Powder with Sol-Gel Method**

Sang Wook UI, Sang Hoon LEE, Sung Churl CHOI  
(*Hanyang University*)

**2C-21 Optical property of 1-dimensional nanostructured AlN:Mn by Halide vapor phase epitaxy**

Seung Jae LIM, Jae Seok CHOI, Sung Churl CHOI  
(*Hanyang University*)

**2C-22 Revisiting the Effects of Additive Components on Nitriding Behavior of Si Powder Mixtures**

Young-Jo PARK, Hai-Doo KIM  
(*Korea Institute of Materials Science*)

**2C-23 Investigation of a Light-Weighted Humidity Controlling Material with Microcellular Pore Structure**

In-Hyuck SONG<sup>1</sup>, Eun-Jung LEE<sup>1</sup>, Hai-Doo KIM<sup>1</sup>, Young-Wook KIM<sup>2</sup>  
(*1 Korea Institute of Materials Science, 2 University of Seoul*)

**Oral Session**  
**Nano-crystal Ceramics (1)**  
**November 25th, 2009 Room D 9:00-10:30**  
**[ Chair : Prof. KIM Sung Wng & Dr. AIKAWA Yutaka ]**

**2D-I\_1 <<Invited>>**

**Sonochemical Approach to BaTiO<sub>3</sub> Nanocrystals and Toward Nanocrystal Ceramics**

Kazumi KATO<sup>1</sup>, Feng DANG<sup>1</sup>, Hiroaki IMAI<sup>2</sup>, Satoshi WADA<sup>3</sup>, Hajime HANEDA<sup>4</sup>, Makoto KUWABARA<sup>5</sup>  
(*1 National Institute of Advanced Industrial Science and Technology, 2 Keio University, 3 Yamanashi University, 4 National Institute for Materials Science, 5 Kyushu University*)

**2D-I\_2 <<Invited>>**

**Design of Interconnections of Novel Complex Oxide Nanoparticles**

Satoshi WADA, Shogo IWATSUKI, Ai NOZAWA, Petr PULPAN  
(*University of Yamanashi*)

**2D-I\_3 <<Invited>>**

**From Colloidal Chemistry to Functional Nanomaterial for Photonic and Biotechnology Applications**

Fabien GRASSET<sup>1</sup>, V. ROULLIER<sup>1</sup>, T. AUBERT<sup>1</sup>, S. CORDIER<sup>1</sup>, Y. MOLARD<sup>1</sup>, V. MARCHI-ARTZNER<sup>1</sup>, Hajime HANEDA<sup>2</sup>  
(*1 UMR 6226 CNRS/Universite de Rennes, 2 National Institute for Materials Science*)

**Break (15)**

Oral Session  
Nano-crystal Ceramics (2)  
November 25th, 2009 Room D 10:45-12:00  
[ Chair : Dr. KATO Kazumi & Dr. GRASSET Fabien ]

**2D-I\_4** **«Invited»**

**Atomic Structures, Segregation Site and Properties of Ceramic Interface**

Yuichi IKUHARA<sup>1,2,3</sup>

*(1 The University of Tokyo, 2 Japan Fine Ceramics Center, NSRL, 3 Tohoku University WPI)*

**2D-01** **Metal-Insulator and Superconducting Transitions of  $12\text{CaO}7\text{Al}_2\text{O}_3$  Electride with a nano-cage structure**

SungWng KIM, Hideo HOSONO

*(Tokyo Institute of Technology)*

**2D-02** **Fabrication of  $\text{Sr}_2\text{MgSi}_2\text{O}_7:\text{Eu}^{2+}, \text{Dy}^{3+}$  Phosphor Containing Rare-Earth Metal**

Tatsuya KITSUKA, Takuro EGUCHI, Takanori WATARI, Toshio TORIKAI, Mitsunori YADA

*(Saga University)*

**2D-03** **Development of Advanced Features in the Materials Database Ceramics Bank**

Seong-Min JEONG, Tae-Ui HONG, Kwang-Jin KIM

*(Korea Institute of Ceramic Engineering and Technology)*

**Lunch (60)**

Oral Session  
Thin films & Layers (1)  
November 25th, 2009 Room D 13:00-14:30  
[ Chair : Prof. SHINOZAKI Kazuo & Prof. CROSS Jeffrey ]

**2D-I\_5** **«Invited»**

**Scaling Behavior and Thickness-Dependent Properties of rf Magnetron Sputtered ZnO: Al Thin Films**

Yong Soo CHO, Bhaskar Chandra MOHANTY, Deuk Ho YEON, Ik Jin CHOI, Yeon Hwa JO

*(Yonsei University)*

**2D-04** **The Characterization of Aluminium Nitride Nanorods Through Size and Doping Control**

Seok-Hwan KANG, Young-Jong PARK, Sung-Churl CHOI

*(Hanyang university)*

**2D-05** **High Capacitance Density  $\text{BaTiO}_3$  Thin Films Fabricated by Aerosol Deposition Method**

Jong-Min OH, Song-Min NAM

*(Kwangwoon University)*

**2D-06** **Chemical Processing of Barium Strontium Titanate Thin Films by CSD**

Hisao SUZUKI, Toshinari NODA, Dai IWASAKI, Desheng FU, Naonori SAKAMOTO, Naoki WAKIYA

*(Shizuoka University)*

**2D-07 Tunability of Barium Strontium Titanate Thin-Film Capacitor with Different Metal Electrodes**

Naohiro HORIUCHI, Takuya HOSHINA, Hiroaki TAKEDA, Takaaki TSURUMI  
(Tokyo Institute of Technology)

Break (15)

Oral Session

Thin films & Layers (2)

November 25th, 2009 Room D 14:45-16:15

[ Chair : Prof. WAKIYA Naoki & Prof. KAMIYA Toshio ]

**2D-I\_6 <<Invited>>**

**FeRAM Current Status and Material Challenges**

Jeffrey S. CROSS<sup>1</sup>, Seung-Hyun KIM<sup>2</sup>, Abhijit CHATTERJEE<sup>3</sup>, Satoshi WADA<sup>4</sup>  
(1 Tokyo Institute of Technology, 2 INOSTEK, 3 Accelrys K.K., 4 Yamanashi University)

**2D-08 Characterization of InSbTe Nanowires Grown Directly by MOCVD Method for High Density PRAM Device**

Jun-Ku AHN<sup>1</sup>, Kyung-Woo PARK<sup>1</sup>, Hyun-June JUNG<sup>1</sup>, Sung-Gi HUR<sup>1</sup>, Soon-Won JUNG<sup>2</sup>, Soon-Gil YOON<sup>1</sup>  
(1 Chungnam National University, 2 Electronics and Telecommunications Research Institute)

**2D-09 Preparation and Dielectric Properties of Cr<sub>2</sub>O<sub>3</sub>/ferroelectric film/Cr<sub>2</sub>O<sub>3</sub> Hetero Structure.**

Takeshi YOKOTA, Yasutoshi TSUBOI, Shotaro MURATA, Shinya KITO, Manabu GOMI  
(Nagoya Institute of Technology)

**2D-10 Electrical Properties of Bi<sub>3.25</sub>La<sub>0.75</sub>Ti<sub>3</sub>O<sub>12</sub> and Nd<sub>2</sub>Ti<sub>2</sub>O<sub>7</sub> Ferroelectric Multilayer Films**

Hong-Sub LEE<sup>1</sup>, Hyung-Ho PARK<sup>1</sup>, Yun Taek HWANG<sup>2</sup>  
(1 Yonsei University, 2 Hynix semiconductor Inc.)

**2D-11 Electric Field Induced Resistance Changes in SrFeO<sub>2.5±x</sub> Thin Films with Various Oxygen Contents**

Shinya KITO, Takeshi YOKOTA, Shotaro MURATA, Yasutoshi TSUBOI, Manabu GOMI  
(Nagoya Institute of Technology)

Oral Session

Structural Ceramics (3)

November 25th, 2009 Room E 9:00-10:30

[ Chair : Prof. CHO Won-Seung & Prof. TATAMI Junichi ]

**2E-I\_1 <<Invited>>**

**Electron Holography on Charging Effect in Ceramic Material**

KiHyun KIM<sup>1,2</sup>, Tsukasa HIRAYAMA<sup>1</sup>, Daisuke SHINDO<sup>2</sup>  
(1 Japan Fine Ceramics Center, 2 Tohoku university)

**2E-01 Effects of Doping Elements on Mass Transfer of Alumina Ceramics at Ultra-High Temperatures**

Masashi WADA, Tsuneaki MATSUDAIRA, Satoshi KITAOKA  
(Japan Fine Ceramics Center)

**2E-02 Defect Formation Energetics in  $\alpha$ -Al<sub>2</sub>O<sub>3</sub>  $\Sigma$ <sub>13</sub> Grain Boundary: First-Principles Study**

Nobuaki TAKAHASHI<sup>1</sup>, Teruyasu MIZOGUCHI<sup>1</sup>, Tsubasa NAKAGAWA<sup>2</sup>, Naoya SHIBATA<sup>1</sup>, Takahisa YAMAMOTO<sup>1,3</sup>, Yuichi IKUHARA<sup>1,3,4</sup>  
(1 The University of Tokyo, 2 National Institute of Materials Science, 3 Japan Fine Ceramics Center, 4 Tohoku University)

**2E-03 Dislocation and Pore Alignment Inside Sapphire by Femtosecond Laser Irradiation**

Chiwon MOON<sup>1</sup>, Shingo KANEHIRA<sup>1</sup>, Kiyotaka MIURA<sup>1</sup>, Eita TOCHIGI<sup>2</sup>, Naoya SHIBATA<sup>2</sup>, Yuichi IKUHARA<sup>2</sup>, Kazuyuki HIRAO<sup>1</sup>  
(1 Kyoto University, 2 The University of Tokyo)

**2E-04 Thermal Stability of Al<sub>2</sub>TiO<sub>5</sub> Ceramics for New Diesel Particulate Filter Applications**

Ik Jin KIM  
(Hanseong University)

Break (15)

Oral Session

Glass & Opt-Electronic Materials (1)

November 25th, 2009 Room E 10:45-12:00

[ Chair : Prof. CHUNG Woon-Jin & Dr. SEGAWA Hiroyo ]

**2E-I\_2 «Invited»**

**Optical Properties and Local Structure of Rare-Earth Ions in Chalcogenide and Chalcogenide Glasses**

Jong HEO<sup>1,2</sup>  
(1 Pohang University of Science and Technology, 2 Center for Information Materials)

**2E-I\_3 «Invited»**

**Transmission and Shielding of an Electro-Magnetic Wave (~ GHz) by a Visible Light Using Flexible CdS Films**

SoonGil YOON, Sung-Gi HUR, Jun-Ku AHN, Hyun-Jin CHO  
(Chungnam National University)

**2E-05 Facilitating Quantum Dots Formation in Glasses Using Rare-Earths**

Yong Kon KWON<sup>1,2</sup>, Sang Min SHIM<sup>1,2</sup>, Jong HEO<sup>1,2</sup>  
(1 Center for Information Materials, 2 Pohang University of Science and Technology)

Lunch (60)

Oral Session

Glass & Opt-Electronic Materials (2) & Bio Materials (1)

November 25th, 2009 Room E 13:00-14:30

[ Chair : Prof. HEO Jong & Prof. LEE Byong-Taek ]

**2E-06 Formation of Bubbles in Soda-Lime-Silica Glass Melts by Dc Electrochemical Reaction: Effect of Sulfate Ions**

Tetsuji YANO, Makoto INOUE, Shuichi SHIBATA  
(Tokyo Institute of Technology)

**2E-07 Plasma Etching Characteristics of Sapphire, Alumina and  $Y_2O_3$ - $SiO_2$ - $Al_2O_3$  Glass.**

Jungki LEE<sup>1</sup>, Seongjin HWANG<sup>1</sup>, Sungmin LEE<sup>2</sup>, Hyungsun KIM<sup>1</sup>  
(1 Inha University, 2 Korea Institute of Ceramic Engineering and Technology)

**2E-08 Preparation of Chitosan-Silicate Hybrid to Induce Osteodifferentiation of Human Bone Marrow Cells**

Akiyoshi OSAKA<sup>1</sup>, Yuki SHIROSAKI<sup>1</sup>, Kanji TSURU<sup>2</sup>, Satoshi HAYAKAWA<sup>1</sup>  
(1 Okayama University, 2 Kyushu University)

**2E-09 Regeneration of Dog's Segmental Bone Defect Using Unidirectional Porous Hydroxyapatite/Collagen Composite**

Masanori KIKUCHI<sup>1</sup>, Koji AOKI<sup>2</sup>, Kazuya EDAMURA<sup>2</sup>, Yoshihisa KOYAMA<sup>3</sup>, Kazuo TAKAKUDA<sup>3</sup>, Shigeo TANAKA<sup>2</sup>  
(1 National Institute for Materials Science, 2 Nihon University, 3 Tokyo Medical and Dental University)

**2E-10 Mechanical and Functional Improvement of Sponge Replica Method Derived BCP Scaffold**

Minsung KIM, Ih-Ho PARK, Young-Ki MIN, Ho-Yeon SONG, Byong-Taek LEE  
(Soonchunhyang University)

**2E-11 In Vitro Method to Characterize Resorption of Calcium Phosphate-Based Ceramic Scaffolds**

Atsuo ITO<sup>1</sup>, Yu SOGO<sup>1</sup>, Atsushi YAMAZAKI<sup>2</sup>, Mamoru AIZAWA<sup>3</sup>, Akiyoshi OSAKA<sup>4</sup>, Satoshi HAYAKAWA<sup>4</sup>, Masanori KIKUCHI<sup>5</sup>, Ikuko AKAHANE<sup>5</sup>, Kimihiro YAMASHITA<sup>6</sup>, Yumi TANAKA<sup>6</sup>, Mika TADOKORO<sup>1</sup>, Hajime OHGUSHI<sup>1</sup>  
(1 National Institute of Advanced Industrial Science and Technology, 2 Waseda University, 3 Meiji University, 4 Okayama University, 5 National Institute for Materials Science, 6 Tokyo Medical and Dental University)

Break (15)

Oral Session

Bio Materials (2)

November 25th, 2009 Room E 14:45-16:15

[ Chair : Prof. HWANG Kyu-Hong & Dr. SUETSUGU Yasushi ]

**2E-I\_4 «Invited»**

**Fabrication and Biocompatibility of Artificial Ceramic Materials for Hard Tissue Replacement and Augmentation**

Swapan Kumar SARKAR, Van Tuyen DO, Van Viet THAI, Yong Ki MIN, Ho Yeon SONG, Byong, Taek LEE  
(Soonchunhyang University)

**2E-12 Formation of Hydroxyapatite Coatings on Bioabsorbable Magnesium to Improve its Corrosion Resistance**

Sachiko HIROMOTO, Masanari TOMOZAWA  
(National Institute for Materials Science)

**2E-13 Corrosion Behavior of Magnesium Coated with Hydroxyapatite in Various Morphology**

Masanari TOMOZAWA, Sachiko HIROMOTO  
(National Institute for Materials Science)

**2E-14 Consideration of Electrochemical Property of Biocompatible B-Type Carbonated Apatite**

Yumi TANAKA<sup>1</sup>, Azusa HAGIWARA<sup>1,2</sup>, Akiko NAGAI<sup>1</sup>, Tatsuo SUGIYAMA<sup>3</sup>, Fumio MUNAKATA<sup>3</sup>,  
Kazuaki HASHIMOTO<sup>2</sup>, Kimihiro YAMASHITA<sup>1</sup>

*(1 Tokyo Medical and Dental University, 2 Chiba Institute of Technology, 3 Tokyo City University)*

**2E-15 High Speed End-milling Characteristic of Al<sub>2</sub>O<sub>3</sub>/Y-TZP Ceramic Composites for Dental Applications**

Seok-Jae HA, Bong-Cheol SHIN, Si-Young BAEK, Jingwen XU, Won-Seung CHO, Myeong-Woo CHO  
*(Inha University)*

**Poster Session**  
**Raw Materials & Power Cramics**

**P1-01 Synthesis of Nanometer-sized Ceria Particles by Electrolysis of Aqueous Solution**

Takaaki HANADA, Yoshihiro HIRATA, Naoki MATSUNAGA, Soichiro SAMESHIMA  
(*Kagoshima University*)

**P1-02 A Novel Technique for Preparation of Nano-spherical Clay Particles**

Kazumi MINAGAWA<sup>1</sup>, Hirohisa YAMADA<sup>1</sup>, Kenji TAMURA<sup>1</sup>, Yujiro WATANABE<sup>2</sup>  
(*1 National Institute for Materials Science, 2 Kanazawa Institute of Technology*)

**P1-03 Fabrication of  $\alpha$ -Alumina Nanopowders by Thermal Decomposition adding  $Mg(NO_3)_2 \cdot 6H_2O$  to Ammonium Aluminum Carbonate (AACH)**

Yong Taeg OH, Dong Chan SHIN  
(*Chosun University*)

**P1-04 The Effects of the Chemical Composition and Grain Size of Waste Hard Metal on the Zinc Process**

Soo Min KIM<sup>1</sup>, Jae Hwan PEE<sup>1</sup>, Yoo Jin KIM<sup>1</sup>, Jun Cheol CHOI<sup>2</sup>, Woo seok CHO<sup>1</sup>  
(*1 Korea Institute of Ceramic Engineering and Technology, 2 Recytech Korea Co., Ltd*)

**P1-05 Characterisation of Dark Core and Blue Patch in Mong Hsu Ruby**

Prachuporn MANEERATANASARN<sup>1</sup>, Pornsawat HANAKUL<sup>2</sup>, SEONG KUK LEE<sup>3</sup>, BONG GEUN CHOI<sup>1</sup>, KWANG BO SHIM<sup>1</sup>  
(*1 Hanyang University, 2 Kasetsart University, 3 Ceramic Research Institute*)

**Poster Session**  
**Traditional Ceramics**

**P2-01 A Study on the Geryong Mountain Buncheong Ware Compounded with Iron Using Image Cut Raman Microscope**

Seong-Ho LIM<sup>1</sup>, Young-Bum KIM<sup>2</sup>, Hyun-Soo LEE<sup>1</sup>, Byung-Ha LEE<sup>1</sup>  
(*1 Myoungji University, 2 Lamb da Ray.Co.Ltd*)

**P2-02 Prediction of Physical Properties of Artificial Lightweight Aggregates at Various Sintering Atmospheres**

Yootaek KIM, Yugwang RYU, Changsub JANG  
(*Kyonggi University*)

**P2-03 The Effect of Additive on Tribological Properties of Cu-C-Fe<sub>3</sub>O<sub>4</sub>-Sn Sintered Friction Materials**

Yong Taeg OH<sup>1</sup>, Seok Eui CHOI<sup>1</sup>, Hee Bum CHOI<sup>2</sup>, Geun Joong JUNG<sup>3</sup>, Hyun Kyu LEE<sup>1</sup>, Dong Chan SHIN<sup>1</sup>  
(*1 Chosun University, 2 FRIXA, 3 Hankook Tire*)

**P2-04 The Effect of Graphite and Cu Content on Tribological Behavior in Cu-Sn Sintered Friction Materials**

Yong Taeg OH<sup>1</sup>, Hyo Kyun HAM<sup>1</sup>, Hyang Rae KIM<sup>2</sup>, Hyeong-Gi CHOI<sup>2</sup>, Hyun Kyu LEE<sup>1</sup>, Dong Chan SHIN<sup>1</sup>  
(*1 Chosun University, 2 FRIXA*)

- P2-05 Characterization of Aerosol-Deposited Al<sub>2</sub>O<sub>3</sub> Thick Films on Arc Plasma Anodized Al<sub>2</sub>O<sub>3</sub> Interlayer for Plasma Resistance**  
 Joo-Hyun CHOI<sup>1,2</sup>, Jong-Min OH<sup>1</sup>, Yoon-Hyun KIM<sup>1</sup>, Ki-Hun SEONG<sup>3</sup>, Dong-Moon SEO<sup>3</sup>, Chang-Yong HYUN<sup>2</sup>, Nam-Hoon KIM<sup>4</sup>, Song-Min NAM<sup>1</sup>  
*(1 Kwangwoon University, 2 Seoul National University of Technology, 3 Aerospace & Semiconductor Flow, 4 Advanced Materials & Technology for Energy)*

- P2-06 Evaluation of physical property and particle orientation in large-scale Alumina made by pressure slip casting**  
 Hyo-Sung CHOI<sup>1</sup>, Jae-Hwan PEE<sup>1</sup>, Min JO<sup>2</sup>, Woo-Seok CHO<sup>1</sup>  
*(1 Korea Institute of Ceramic Engineering and Technology, 2 Jai Won TNS, Co., Ltd)*

**Poster Session  
 Synthesis & Processing**

- P3-01 Characteristics of AlON-Al<sub>2</sub>O<sub>3</sub> Ceramic Coatings on 6061 Al alloys by Electrolytic Plasma Processing in Aluminate, Silicate and Phosphate Electrolytes**  
 Kai WANG, Sang Sik BYEON, Chan Gyu LEE, Bon Heun KOO  
*(Changwon National University)*
- P3-02 Effect of Phosphate and Nitrate Electrolytes on Growth of Ceramic Coatings on Al6061 Alloys Prepared by Electrolytic Plasma Processing**  
 Sangsik BYEON, Kai WANG, Chan Gyu LEE, Bon Heun KOO  
*(Changwon National University)*
- P3-03 Synthesis and Characterization of Y<sub>3</sub>Al<sub>5</sub>O<sub>12</sub>:Ce<sup>3+</sup> Nanoparticles by a Reverse Micelle Process**  
 Min Yeong KIM, Dong-Sik BAE  
*(Changwon National University)*
- P3-04 Fabrication of Permanent Transparent Conduiting Electride 12CaO<sub>7</sub>Al<sub>2</sub>O<sub>3</sub>(C<sub>12</sub>A<sub>7</sub>) by Pulsed Current Sintering(PCS) Method**  
 Junho CHUNG, Jong Won EUN, Chull koo CHO, Bong Geun CHOI, kwang bo SHIM  
*(Hanyang University)*
- P3-05 Solvothermal Synthesis of Single-Crystalline BaTiO<sub>3</sub> Wires**  
 Dai IJICHI, Kiyofumi KATAGIRI, Kunihito KOUMOTO  
*(Nagoya University)*
- P3-06 Anomalous Water Absorption/Adsorption of Shock Compressed to Bormorite**  
 Toshiyuki ATOU<sup>1</sup>, Ryo ATARASHI<sup>1</sup>, Eriko OHSHIMA<sup>2</sup>, Shun ITO<sup>3</sup>, Masae KIKUCHI<sup>4</sup>  
*(1 Tokyo Institute of Technology, 2 Ichinoseki National College of Technology, 3 Tohoku University, 4 Tohoku Fukushi University)*
- P3-07 Pressure Filtration of Alumina Suspensions Under Alternative Current Field**  
 Kouichirou MATSUSHIMA, Yoshihiro HIRATA, Naoki MATSUNAGA, Souichiro SAMESHIMA  
*(Kagoshima University)*
- P3-08 Hydrothermal Syntheses of Interstratified Clay Minerals from (K, Na)-Montmorillonite Glass**  
 Hirohisa YAMADA<sup>1</sup>, Shingo YOKOYAMA<sup>2</sup>, Kenji TAMURA<sup>1</sup>, Yujiro WATANABE<sup>3</sup>  
*(1 National Institute for Materials Science, 2 Central Research Institute of the Electric Power Industry, 3 Kanazawa Institute of Technology)*

- P3-09 Synthesis of Zeolite Na-P1 from Fly Ash using Alkaline Hydrothermal Treatment for Removal of Ammonium and Phosphate Ions in Water System**  
 Yujiro WATANABE<sup>1</sup>, Naoyuki TAYA<sup>1</sup>, Kaoru FUJINAGA<sup>1</sup>, Syunichi OSHIMA<sup>1</sup>, Hirohisa YAMADA<sup>2</sup>, Toshiyuki IKOMA<sup>3</sup>, Junzo TANAKA<sup>4</sup>, Yusuke MORIYOSHI<sup>5</sup>, Yu KOMATSU<sup>1</sup>  
 (1 Kanazawa Institute of Technology, 2 Photocatalytic Materials Center, National Institute for Materials Science, 3 Biomaterials Center, National Institute for Materials Science, 4 Tokyo Institute of Technology, 5 Hosei University)
- P3-10 Preparation of Oxide Hollow Capsules Using SiO<sub>2</sub> Gel Particles as Templates**  
 Jumpei KAMIYA<sup>1</sup>, Kiyofumi KATAGIRI<sup>2</sup>, Kunihiro KOUMOTO<sup>3</sup>  
 (Nagoya University)
- P3-11 Silica Coating on Highly Dispersed Iron Nano-Size Powders**  
 Takamasa ISHIGAKI<sup>1,2</sup>, Kimitoshi SATO<sup>2</sup>, Yonghua LENG<sup>2</sup>, Ji-Guang LI<sup>2</sup>, Hidehiro KAMIYA<sup>3</sup>  
 (1 Hosei University, 2 National Institute for Materials Science, 3 Tokyo University of Agriculture and Technology)
- P3-12 Effects of Acceleration Gases and Plasma Assistance for Aerosol Deposition on Film Hardness**  
 So BABA, Jun AKEDO  
 (National Institute of Advanced Industrial Science and Technology)
- P3-13 Investigation of Optical Transparency for Ceramic Films Prepared by Aerosol Deposition**  
 Hiroki TSUDA<sup>1</sup>, Jun AKEDO<sup>1</sup>, Masafumi NAKADA<sup>2</sup>, Takanori SHIMIZU<sup>2</sup>, Keishi OHASHI<sup>2</sup>  
 (1 National Institute of Advanced Industrial Science and Technology, 2 NEC/MIRAI-Selete)
- P3-14 Synthesis of Nano-Nano Composite Powders Using by Porous AlN and Yttrium Alkoxide**  
 Jong Chul PARK, Jae Hwan PEE, Kwang Taek HWANG, Soo Ryong KIM, Woo Seok CHO  
 (Korea Institute of Ceramic Engineering and Technology)
- P3-15 The Effect of II, III, IV Groups Elements Doping on the Red Color Tone and Nitridation of Tantalum Based Materials**  
 Eun-Young PARK, Jae-Hwan PEE, YooJin KIM, Woo-Seok CHO  
 (Korea Institute of Ceramic Engineering and Technology)
- P3-16 The Effect of Alkaline Metal Contents and Particle Size of Alumina Powder on the Spheroidization in the Thermal Spray Process**  
 Sun Hui EOM<sup>1</sup>, Jae-Hwan PEE<sup>1</sup>, Jong-Keun LEE<sup>2</sup>, Woo-Seok CHO<sup>1</sup>  
 (1 Korea Institute of Ceramic Engineering and Technology, 2 DaeHan Ceramic Co., Ltd.)
- P3-17 Preparation of Silicon-Substituted Hydroxyapatite Powders by Ultrasonic Spray-Pyrolysis Technique and its Sinterability**  
 Kouichi KIKUSHIMA, Hajime YOSHIHISA, Mamoru AIZAWA  
 (Meiji University)
- P3-18 Laser Assisted Ink-Jet Printing for Wiring Fine Pattern**  
 Akito ENDO, Jun AKEDO  
 (National Institute of Advanced Industrial Science and Technology)
- P3-19 Homogeneous Precipitation of Spherical ZnO Particles Covered with +c-plane**  
 Hajime HANEDA<sup>1,2</sup>, Kenji MATSUMOTO<sup>1,2</sup>, Noriko SAITO<sup>1</sup>, Yuta MORIURA<sup>1,2</sup>, Miki INADA<sup>2</sup>, Junichi HOJO<sup>2</sup>, Naoki OHASHI<sup>1,2</sup>  
 (1 National Institute for Materials Science, 2 Kyushu University)

**Poster Session  
Electronic Ceramics**

- P4-01 Electronic Structures of Defects and Impurities in Layered mixed Anion Compounds**  
Toshio KAMIYA<sup>1,2</sup>, Hidenori HIRAMATSU<sup>2</sup>, Hiroshi YANAGI<sup>2</sup>, Hideo HOSONO<sup>1,2</sup>  
(1 Tokyo Institute of Technology, 2 Japan Science and Technology Agency)
- P4-02 First Principles Calculations of Defect Energetics of STO Symmetric Tilt Grain Boundaries**  
Haksung LEE<sup>1</sup>, Teruyasu MIZOGUCHI<sup>1</sup>, Takahisa YAMAMOTO<sup>1,2</sup>, Suk-Joong L KANG<sup>3</sup>, Yuichi IKUHARA<sup>1,2,4</sup>  
(1 The University of Tokyo, 2 Japan Fine Ceramics Center, 3 Korea Advanced Institute of Science and Technology, 4 Tohoku University)
- P4-03 Resistance Switching at Pt/SrTiO<sub>3</sub>:Nb Junctions Investigated by Photoemission**  
Jianyong LI, Naoki OHASHI, Hedeyo OKUSHI, Isao SAKAGUCHI, Shigenori UEDA, Hideki YOSHIKAWA, Yoshiyuki YAMASHITA, Keisuke KOBAYASHI and Hajime HANEDA  
(National Institute for Materials Science)
- P4-04 Magneto-Charge Injection Property Cr<sub>2</sub>O<sub>3</sub>/Ferromagnetic filter/Cr<sub>2</sub>O<sub>3-x</sub>/Ferromagnetic filter/CeO<sub>2</sub>/Si MIS Capacitor**  
Shotaro MURATA, Takeshi YOKOTA, Shinya KITO, Yasutoshi TUBOI, Manabu GOMI  
(Nagoya Institute of Technology)
- P4-05 The Influence of NiFe<sub>2</sub>O<sub>4</sub> Doping on The Structure, Magnetic and Electrical Properties of La<sub>0.7</sub>Ca<sub>0.3</sub>MnO<sub>3</sub>**  
Young Joo KIM, Yong Jun SEO, Shalendra KUMAR, Chan Gyu LEE, Bon Heun KOO  
(Changwon National University)
- P4-06 Dynamical Properties of Multiferroic BiFeO<sub>3</sub> Probed by Brillouin and Raman Spectroscopy**  
Shinya TSUKADA, Yosuke ONDA, Kihiro KATO, Yuki Hidaka, Seiji KOJIMA  
(University of Tsukuba)
- P4-07 Dielectric Spectroscopy of Lead-Free Ferroelectric (1-x) (Na<sub>0.5</sub>Bi<sub>0.5</sub>)TiO<sub>3-x</sub>BaTiO<sub>3</sub> Single Crystals**  
Yosuke ONDA, Shinya TSUKADA, Seiji KOJIMA  
(University of Tsukuba)
- P4-08 Selection of Templates for Surface-Orientation-Controlled K<sub>1/2</sub>Na<sub>1/2</sub>NbO<sub>3</sub> Ceramics**  
Si-Young CHOI, Jae-Ho JEON  
(Korea Institute of Materials Science)
- P4-09 Relationships between Crystal Structure and Electrical Properties of Ag<sub>x</sub> (Li<sub>0.05</sub>K<sub>0.475</sub>Na<sub>0.475</sub>)<sub>1-x</sub>(Nb<sub>1-y</sub>Ta<sub>y</sub>)O<sub>3</sub> Ceramics**  
Seock No SEO<sup>1</sup>, Jeong Ho CHO<sup>2</sup>, Byung Ik KIM<sup>2</sup>, Eung Soo KIM<sup>1</sup>  
(1 Kyonggi University, 2 Korea Institute of Ceramic Engineering and Technology)
- P4-10 High-power Piezoelectric Characteristics of Some Bismuth Layer-structured Ferroelectric Ceramics**  
Yoji NOUMURA, Kodai TAKAI, Yuji HIRUMA, Hajime NAGATA, Tadashi TAKENAKA  
(Tokyo University of Science)
- P4-11 Application of The Metal Core Piezoelectric Fiber**  
Hiroshi SATO  
(National Institute of Advance Industrial Science and Technology)

**P4-12 Direct-Patternable BiFeO<sub>3</sub> Thin Films formed by Photochemical Metal-Organic Deposition**

Hong-Sub LEE<sup>1</sup>, Hyung-Ho PARK<sup>1</sup>, Yun Taek HWANG<sup>2</sup>  
(1 Yonsei University, 2 Hynix semiconductor Inc.)

**P4-13 Enhancement of High-Temperature Stability of Silver Paste by Incorporation of Conducting Oxides**

Hyuncheol KIM, Hyung-Ho PARK  
(Yonsei University)

**P4-14 PZT/Garnet Hybrid Structure for Voltage Driving of MOSLM**

Kwanghyun CHUNG<sup>1</sup>, Shinichiro MITO<sup>1</sup>, Takenori KATO<sup>1</sup>, Hiroyuki TAKAGI<sup>2</sup>, Mitsuteru INOUE<sup>1</sup>  
(1 Toyohashi University of Technology, 2 Toyota National College of Technology)

**P4-15 Dielectric Properties of BaTiO<sub>3</sub> Films Prepared by Aerosol Deposition Method**

Muneyasu SUZUKI, Jun AKEDO  
(National Institute of Advanced Industrial Science and Technology)

**P4-16 Development of Electric Nanocomposite Films by Aerosol Deposition Method**

Jae-Hyuk PARK, Jun AKEDO  
(National Institute of Advanced Industrial Science and Technology)

**P4-17 Influence of Carbon black on the Microstructure and Electrical Properties for Y-doped (Ba, Sr)TiO<sub>3</sub> Ceramics**

Ki-Ju LEE, Jing-Wen XU, Won-Seung CHO  
(Inha University)

**P4-18 Deep Levels in Heavily Al-doped ZnO Thin Films for Transparent Electrode Applications**

Baoye LI, Jianyong LI, Yutaka ADACHI, Hedeyo OKUSHI, Isao SAKAGUCHI, Hajime HANEDA, Naoki OHASHI  
(National Institute for Materials Science)

**P4-19 Charge transport mechanism in AlN Ceramics**

Sung-Min LEE<sup>1</sup>, Hui-Sik KIM<sup>1,2</sup>, Hyung-Tae KIM<sup>1</sup>, Kwang-Bo SHIM<sup>2</sup>  
(1 Korea Institute of Ceramic Engineering & Technology, 2 Hanyang University)

**P4-20 Low dielectric constant of glasses with hollow perlite**

Chungyong LEE, Seongjin HWANG, Ilbok LEE, Hyungsun KIM  
(Inha University)

**P4-21 High Temperature Thermoelectric Properties of Ca<sub>1-x</sub>Bi<sub>x</sub>Mn<sub>1-y</sub>Nb<sub>y</sub>O<sub>3</sub> (0 ≤ x = y ≤ 0.1) System**

Dong HA KWAK, Jong Won PARK, Seung Chul CHOI  
(Ajou University)

**P4-22 Effects of Crystallization on Thermal Conductivity of Diopside**

Chang Jun JEON, Won Jae YEO, Eung Soo KIM  
(Kyonggi University)

**P4-23 Low Temperature Sintering and Microwave Dielectric Properties of Quartz-Alumina/Zinc Borosilicate Glass System**

Kwan Soo KIM<sup>1</sup>, Gyu Ok UM<sup>1</sup>, Shin KIM<sup>2</sup>, Sang Ok YOON<sup>1</sup>  
(1 Kangung-Wonju National University, 2 Cermotech Co.,Ltd)

- P4-24 The Structure and Photoluminescence Properties of ZnS Nanowires Sheathed with TiO<sub>2</sub> by Metal Organic Chemical Vapor Deposition**  
Chongmu LEE, Jina JUN, Hyunsoo KIM, Changyun JIN  
(*Inha University*)
- P4-25 Synthesis and characterization of SiO<sub>2</sub>-sheathed ZnSe nanowires**  
Hyunsoo KIM, Changyun JIN, Kyungjoon BAEK, and Chongmu LEE  
(*Inha University*)
- P4-26 Physical and Dielectric Characteristics of Nanoglass-driven Dielectrics**  
Saehanna DOO<sup>1</sup>, Oh Hyeon KWON<sup>1</sup>, Jun Seok LEE<sup>1</sup>, Dong Ki MIN<sup>2</sup>, Kyung Won CHUNG<sup>2</sup>, Jun Ho SEO<sup>3</sup>, Yong Soo CHO<sup>1</sup>  
(*1 Yonsei University, 2 Daion, 3 Plasma Research Institute*)
- P4-27 The Crystal Growth and Electrical Properties of CaO-Al<sub>2</sub>O<sub>3</sub> Compound**  
Tong Ik SHIN, Kiyoshi SHIMAMURA, Arnaud APHECEIBORDE, Encarnacion G. VILLORA, Kenji KITAMURA  
(*National Institute for Materials & Science*)
- P4-28 Magnetic and Electrical Transport Properties on (La<sub>0.7</sub> Sr<sub>0.3</sub> MnO<sub>3</sub>)<sub>1-x</sub>/(CuFe<sub>2</sub>O<sub>4</sub>)<sub>x</sub> Composites**  
Yong-Jun SEO, Young Joo KIM, Chang Hoon SUNG, Chan Gyu LEE, Bon Heun KOO  
(*Chang-Won national university*)
- P4-29 Structural, Thermal and Electrical Properties of a Perovskite-type Cathode System, La<sub>0.75</sub>Sr<sub>0.25</sub>Mn<sub>0.95-x</sub>Co<sub>x</sub>Ni<sub>0.05</sub>O<sub>3+δ</sub>**  
Ravindra K. GUPTA, Ik Jin CHOI, Yong Soo CHO  
(*Yonsei University*)

**Poster Session  
Structural Ceramics**

- P5-01 Critical Crack Size of Healing Possibility of SiC Ceramics**  
Ki Woo NAM<sup>1</sup>, Jong Soon KIM<sup>2</sup>, Seung Won PARK<sup>1</sup>, Hee Bang LEE<sup>1</sup>  
(*1 Pukyong National University, 2 NGE Tech. Co. Ltd.*)
- P5-02 The High Temperature Strength of SiC Ceramics Based on SiO<sub>2</sub> Nano-Colloidal Employed**  
Seung Won PARK<sup>1</sup>, Woo Sang Ahn<sup>1</sup>, Jong Soon KIM<sup>2</sup>, Im Sul SEO<sup>1</sup>, Ki Woo NAM<sup>1</sup>  
(*1 Pukyong National University, 2 NGE Tech. Co. Ltd.*)
- P5-03 The Effect of Fiber Coating on The Mechanical/Thermal Behavior of The SiC Fiber Reinforced SiC Composites**  
Eugene LEE<sup>1</sup>, Tae-Woo KIM<sup>1</sup>, Sang-Kuk WOO<sup>2</sup>, Kee-sung LEE<sup>1</sup>  
(*1 Kookmin University, 2 Reaction and Separation Materials Research Center*)
- P5-04 Effect of Si:C Ratio, Carbon Source, and Al Additive on Properties of Porous Self-Bonded Silicon Carbide Ceramics**  
Kwang-Young LIM<sup>1</sup>, Young-Wook KIM<sup>1</sup>, Sang-Kuk WOO<sup>2</sup>, In-Sub HAN<sup>2</sup>  
(*1 University of Seoul, 2 Korea Institute of Energy Research*)
- P5-05 Analysis of Oxidation Process of C/B<sub>4</sub>C/SiC Composite Via TG -EGA System**  
Hideaki SANO, Guo-Bin ZHENG, Yasuo UCHIYAMA  
(*Nagasaki University*)

- P5-06 Effect of Chemical Composition of Intergranular Glass on Superplastic Compressive Deformation of  $\beta$ -Silicon Nitride**  
 Eiichirou NARIMATSU<sup>1</sup>, Toshiyuki NISHIMURA<sup>1</sup>, Naoto HIROSAKI<sup>1</sup>, Yutaka SHINODA<sup>2</sup>, Takashi AKATSU<sup>2</sup>, Fumihiro WAKAI<sup>2</sup>  
 (1 National Institute for Materials Science, 2 Tokyo Institute of Technology)
- P5-07 High Temperature SO<sub>2</sub>-gas Corrosion of TiN-Ti<sub>5</sub>Si<sub>3</sub> Composites Prepared by Polymer Pyrolysis**  
 Jae Chun LEE<sup>1</sup>, Thuan Dinh NGUYEN<sup>2</sup>, Deug J. KIM<sup>2</sup>, and Dong Bok LEE<sup>2</sup>  
 (1 Myongji University, 2 Sungkyunkwan University)
- P5-08 Preparation and Sintering of AlN Nanopowder**  
 Toshiyuki NISHIMURA<sup>1</sup>, Dai YAGUCHI<sup>2</sup>, Keisuke SEKINE<sup>2</sup>, Yoshinobu YAMAMOTO<sup>1</sup>, Naoto HIROSAKI<sup>1</sup>, Takamasa ISHIGAKI<sup>2</sup>, Hiromi HAMANAKA<sup>2</sup>, Yusuke MORIYOSHI<sup>2</sup>  
 (1 National Institute for Materials Science, 2 Hosei University)
- P5-09 Microstructure and Thermal Conductivity of AlN Ceramics with Y<sub>2</sub>O<sub>3</sub> Fabricated by Pressureless Sintering**  
 Jong Pil AHN, Sung Min SO, Joo Seok PARK, Kyoung Hun KIM, Jae Hong CHAE  
 (Korea Institute of Ceramic Engineering and Technology)
- P5-10 Effects of Ion Beam Irradiation on the Y<sub>2</sub>O<sub>3</sub> Films deposited by Electron Beam Evaporation**  
 Daemin KIM<sup>1,2</sup>, Yoonsuk OH<sup>1</sup>, Sungmin LEE<sup>1</sup>, Seongwon KIM<sup>1</sup>, Hyungtae KIM<sup>1</sup>, Kyeongbeom KIM<sup>1</sup>, Daesoon LIM<sup>2</sup>  
 (1 Korea Institute of ceramic engineering and technology, 2 Korea University)
- P5-11 Erosion Behavior of YAG Ceramics under Fluorine Plasma and their XPS Analysis**  
 Sung-Min LEE<sup>1</sup>, Kyeong-Beom KIM<sup>1</sup>, Yoon-Suk OH<sup>1</sup>, Hyung-Tae KIM<sup>1</sup>, Jungki LEE<sup>2</sup>, Hyungsun KIM<sup>2</sup>  
 (1 Korea Institute of Ceramics Engineering & Technology, 2 Inha University)
- P5-12 Comparison of Fracture Toughness Evaluating Methods in 3Y-TZP Ceramics Reinforced with Al<sub>2</sub>O<sub>3</sub> Particles**  
 Won-seung CHO, Jingwen XU, Ki-ju LEE, Dongxu TANG, Kwang-pyo HONG, Si-young BECK, , Myeong-woo CHO  
 (Inha University)
- P5-13 Influence of Various Additives on Oxidation Behavior of WC-Based Cemented Carbides Under Low Partial Pressure of Oxygen**  
 Toshikazu SOEJIMA<sup>1</sup>, Hideaki SANO<sup>1</sup>, Guo-Bin ZHENG<sup>1</sup>, Yasuo UCHIYAMA<sup>1</sup>, Shuji UENO<sup>2</sup>, Hiroki TANAKA<sup>2</sup>, Kenji NAKAHARA<sup>2</sup>  
 (1 Nagasaki University, 2 Nippon Tungsten Co. Ltd.)
- P5-14 Densification and Microstructure of Boron Carbide Ceramics by Methanol washed Powder**  
 Jong Pil AHN, Tae Kwan KIM, Kyoung Hun KIM, Joo Seok PARK, Jae Hong CHAE  
 (Korea Institute of Ceramic Engineering and Technology)

**Poster Session**  
**Glass & Opto-Electronic Materials**

- P6-01 Effects of Ga Addition on Optical Properties of Pr<sup>3+</sup>-doped Ge-Sb-Se Glasses**  
 Yong Gyu CHOI<sup>1</sup>, Jung Kyun KIM<sup>1</sup>, Woon Jin CHUNG<sup>2</sup>, Bong Je PARK<sup>3</sup>, Jong HEO<sup>4</sup>  
 (1 Korea Aerospace University, 2 Kongju National University, 3 Electronics and Telecommunications Research Institute, 4 Pohang University of Science and Technology)

- P6-02 Temperature Dependence of Elastic Properties in Potassium Borate Binary Glasses**  
Mitsuru KAWASHIMA, Yu MATSUDA, Seiji KOJIMA  
(*University of Tsukuba*)
- P6-03 Physical Simulation of Small Melter for LTCC Frit**  
Hyeong-Jun KIM<sup>1</sup>, Kyoung-Han YOON<sup>1</sup>, Jong Cheol KIM<sup>2</sup>  
(*1 Korea Institute of Ceramic Engineering and Technology, 2 Eglas*)
- P6-04 Effect of the Oxygen Partial Pressure on PLD of ZnS Thin Films**  
Jun-Ki Chung<sup>1</sup>, Won-Jeong KIM<sup>2</sup>, Hee-Gon BANG<sup>1</sup>, Sung-Jin KIM<sup>1</sup>, Sang-Yeup Park<sup>1</sup>  
(*1 Kangnung National University, 2 Changwon National University*)
- P6-06 Thermal Conductivity of Mg-Doped Near-Stoichiometric Composition LiTaO<sub>3</sub> Crystal**  
Masaru NAKAMURA, Shunji TAKEKAWA, Kenji KITAMURA  
(*National Institute for Materials Science*)
- P6-07 QPM-UV Emission of Ferroelectric Fluoride Single Crystals**  
Kiyoshi SHIMAMURA<sup>1</sup>, Encarnación G. VÍLLORA<sup>1</sup>, Masahiro AOSHIMA<sup>2</sup>, Keiji SUMIYA<sup>2</sup>  
(*1 National Institute for Materials Science, 2 Hitachi Chemical Co., Ltd.*)
- P6-08 Mid-IR Emission of Rare Earth Doped Oxyfluoride Glass-Ceramics**  
Woon Jin CHUNG<sup>1</sup>, Kyoung Hoon KIM<sup>1</sup>, Bong Je PARK<sup>2</sup>, Hong Seok SEO<sup>2</sup>, Joon Tae AHN<sup>2</sup>, Yong Gyu CHOI<sup>3</sup>  
(*1 Kongju National University, 2 Electronics and Telecommunications Research Institute, 3 Korea Aerospace University*)
- P6-09 Joule Heating for Magneto-Optic Spatial Light Modulator Using Rare Earth-transition Metal**  
JooYoung KIM, Kenji TAKINE, Jin HEO, Mitsuteru INOUE  
(*Toyohashi University of Technology*)
- P6-10 Synthesis of Low Softening Hard Glass in Borate Systems**  
Hiroyo SEGAWA<sup>1</sup>, Tatsuhiko IGARASHI<sup>2</sup>, Atsuo YASUMORI<sup>2</sup>, Satoru INOUE<sup>1</sup>  
(*1 National Institute for Materials Science, 2 Tokyo University of Science*)
- P6-11 Simplified synthesis of spherical-shaped nano-sized glass powders by RF (radio frequency) thermal plasma**  
JunHo SEO<sup>1</sup>, Jeong Su KIM<sup>1</sup>, Hyuk LEE<sup>1</sup>, Seok Ho LEE<sup>1</sup>, Byoung Ki MIN<sup>1</sup>, Won Tae JU<sup>2</sup>, In Tak NAM<sup>3</sup>  
(*1 Cheorwon Plasma Research Institute, 2 Plasnix Co., 3 Kangwon National University*)

**Poster Session  
Thin Films & Layers**

- P7-01 Synthesis and Characterization of Zinc-Isotopic Multilayered ZnO Thin Films**  
Kenji MATSUMOTO<sup>1,2</sup>, Yutaka ADACHI<sup>2</sup>, Shunichi HISHITA<sup>2</sup>, Takeshi OHGAKI<sup>2</sup>, Isao SAKAGUCHI<sup>2</sup>, Naoki OHASHI<sup>1,2</sup>, Hajime HANEDA<sup>1,2</sup>  
(*1 Kyushu University, 2 National Institute for Materials Science*)
- P7-02 Photonic Crystal Properties of ZnO Thin Film on Self-Assembled SiO<sub>2</sub> by Electrodeposition Method**  
Yong Taeg OH, Dong Chan SHIN  
(*Chosun University*)

**P7-03 Work Function Engineering of Functionally Graded ZnO+Ga<sub>2</sub>O<sub>3</sub>Thin Film for OLED Applications**

Seok Eui CHOI<sup>1</sup>, Yong Taeg OH<sup>1</sup>, Hyo Kyun HAM<sup>1</sup>, Tea Won KIM<sup>2</sup>, Bum Ho CHOI<sup>2</sup>, Gi Seok HEO<sup>2</sup>, In Ki KIM<sup>2</sup>, Jong Woon PARK<sup>2</sup>, Dong Chan SHIN<sup>1</sup>  
(1 Chosun University, 2 Korea Institute of Industrial Technology)

**P7-04 Determination of Crystallographic Polarity of ZnO Films by Anomalous Scattring at An Absorption Edge**

Yutaka ADACHI, Naoki OHASHI, Isao SAKAGUCHI, Hajime HANEDA  
(National Institute for Materials Science)

**P7-05 Oxygen Diffusion in A-Axis Oriented ZnO Thin Films Grown on R-Palne Sapphire Substrate by Using Pulsed Laser Deposition**

Isao SAKAGUCHI<sup>1</sup>, Kenji MATSUMOTO<sup>2</sup>, Yutaka ADACHI<sup>1</sup>, Tsubasa NAKAGAWA,  
Takeshi OHGAKI<sup>1</sup>, Shunichi HISHITA<sup>1</sup>, Naoki OHASHI<sup>1,2</sup>, Hajime HANEDA<sup>1,2</sup>  
(1 National Institute for Materials Science, 2 Kyushu University)

**P7-06 Thickness-Dependant Flexibility Evaluation of Al-Doped ZnO Thin Films on Flexible PES Substrates**

Hong Rak CHOI, Yong Muk CHOI, Bhaskar C. MOHANTY, Yong Soo CHO  
(Yonsei University)

**P7-07 Influence of RTA Treatment on the Morphology and Electrical Properties of Low Temperature Crystalline ITO Thin Films**

Sung Jin KIM<sup>1</sup>, Hunkyun PAK<sup>2</sup>  
(1 Yonsei University, 2 Electronics and Telecommunications Research Institute)

**P7-08 Group-IIIa Elements Doped SnO<sub>2</sub> Films Grown by Pulsed Laser Deposition**

Yuhua ZHEN, Naoki OHASHI, Kenji MATSUMOTO, Jianyong LI, Yongzhao YAO, Toshiyuki NISHIMURA, Baoe LI, Ryota MATSUOKA, Yutaka ADACHI, Takeshi OGAKI, Isao SAKAGUCHI, Hajime HANEDA  
(National Institute for Material Science)

**P7-09 Nitrogen Isotopic Effect in Ga<sup>15</sup>N Epifilms Grown by Plasma-assisted Molecular-Beam Epitaxy**

Yongzhao YAO<sup>1,2,3</sup>, Mitsue OGAWA<sup>1</sup>, Yukari ISHIKAWA<sup>1</sup>, Takeshi OHGAKI<sup>2</sup>, Naoki FUKATA<sup>2</sup>, Hajime HANEDA<sup>2</sup>, Naoki OHASHI<sup>2,3</sup>  
(1 Japan Fine Ceramics Center, 2 National Institute for Materials Science, 3 International Center for Materials Nanoachitectonics)

**P7-10 Characterizations of Non-Polar (11-20) a-Plane GaN Thick (~ 200 m) Film Grown on**

Dongkeun OH<sup>1</sup>, Bong Geun CHOI<sup>1</sup>, Seong kuk LEE<sup>1</sup>, Hye Mi WOO<sup>1</sup>, Jin Hyun CHUNG<sup>2</sup>, Kwang Bo SHIM<sup>1</sup>  
(1 hanyang university, 2 UNIMO Photron co.)

**P7-11 Electrical Properties of Al<sub>2</sub>O<sub>3</sub>/LaAlO<sub>3</sub>/SiO<sub>2</sub> Multilayer Structure for Charge Trap Flash Memory Application**

Seung-Yong CHA, Hyo-June KIM, Doo-Jin CHOI  
(Yonsei University)

**P7-12 Molecular Beam Epitaxy Growth of Al<sup>14</sup>N/Al<sup>15</sup>N Isotope Superlattices**

Takeshi OHGAKI<sup>1</sup>, Yong-Zhao YAO<sup>2</sup>, Kenji MATSUMOTO<sup>3</sup>, Isao SAKAGUCHI<sup>1</sup>, Naoki OHASHI<sup>1</sup>, Hajime HANEDA<sup>1</sup>  
(1 National Institute for Materials Science, 2 Japan Fine Ceramics Center, 3 Kyusyu University)

- P7-13 Preparation of Sn-Modified Titanium Dioxide Single-Crystal Surface**  
 Shunichi HISHITA, Isao SAKAGUCHI, Hajime HANEDA  
*(National Institute for Materials Science)*
- P7-14 Photonics Crystals Properties of Self-Assembled TiO<sub>2</sub>/SiO<sub>2</sub>**  
 Yong Taeg OH, Dong Chan SHIN  
*(Chosun University)*
- P7-16 Improvement of Transmittance by Inserting the SiO<sub>2</sub> UV-Curable Thin Film on Organic Device**  
 Hyo Kyun HAM<sup>1</sup>, Yong Taeg OH<sup>1</sup>, Seok Eui CHOI<sup>1</sup>, Bum Ho CHOI<sup>2</sup>, Jong Woon PARK<sup>2</sup>, Dong-Chan SHIN<sup>1</sup>  
*(1 Chosun University, 2 Korea Institute of Industrial Technology)*
- P7-17 Field Effect Characteristics in Regioregular Poly(3-hexylthiophene)**  
 Shin Woo JEONG, Kwi Jung KIM, Dae Hee HAN, B.E.PARK  
*(University of Seoul)*
- P7-18 Mn-Zn Ferrite Thick Films Prepared at Low Temperature by Spin-Spray Technique**  
 Asako TAKEUCHI, Hajime WAGATA, Ken-ichi KATSUMATA, Kiyoshi OKADA, Nobuhiro MATSUSHITA  
*(Tokyo Institute of Technology japan)*
- P7-19 Preparation and Characterization of MFIS Structure using PZT/BFO<sub>3</sub>/PZT Sandwich Structure**  
 Kwi-Jung KIM, Dae-Hee HAN, Shin-Woo JENG, Jong-Hyun IM, Byung-Eun PARK  
*(University of Seoul)*
- P7-20 Co-Heteroepitaxial Growth of BaTiO<sub>3</sub>-NiFe<sub>2</sub>O<sub>4</sub> Composite Multiferroic Thin Film Deposited on MgIn<sub>2</sub>O<sub>4</sub> with Spinel Structure**  
 Naoki WAKIYA<sup>1</sup>, Shigeki SAWAMURA<sup>1</sup>, Kazuki TANEMURA<sup>1</sup>, Manami SANO<sup>1</sup>, Naonori SAKAMOTO<sup>1</sup>, Desheng FU<sup>1</sup>, Kazuo SHINOZAKI<sup>2</sup>, Hisao SUZUKI<sup>1</sup>  
*(1 Shizuoka University, 2 Tokyo Technology)*
- P7-21 Fabrication of Titanium Carbide Nano-layers from Multi-Walled Carbon Nanotubes via High DC Pulse**  
 Woo Sik KIM<sup>1</sup>, Jeong Hoon LEE<sup>1</sup>, Sook Young MOON<sup>2</sup>, Sin Young BANG<sup>1</sup>, Bong Geun CHOI<sup>1</sup>, Heon HAM<sup>3</sup>, Tohru SEKINO<sup>2</sup>, Seong Kuk LEE<sup>1</sup>, Kwang Bo SHIM<sup>1</sup>  
*(1 Hanyang university, 2 Tohoku university, 3 Vico Co. Ltd)*
- P7-22 Exfoliated Mwcnts to Graphene by Pla Process**  
 Sin Young BANG<sup>1</sup>, Woo Sik KIM<sup>1</sup>, Bong Geun CHOI<sup>1</sup>, Heon HAM<sup>1</sup>, Jeong Hoon LEE<sup>2</sup>, Chull Koo CHO<sup>1</sup>, Kwang Bo SHIM<sup>1</sup>  
*(1 Hanyang University, 2 Vico Co. Ltd)*
- P7-23 Development of Particulate-Interior Board for Tunnel with Superhydrophobic Surface**  
 Seiichi TAKEUCHI, Shintaro DOI, Yasumasa YAMAGAMI, Yuji OHKUBO, Kazufumi OGAWA  
*(Kagawa University)*
- P7-24 Optical Applications of Organosiloxane Polymer Thin Film having Dual Crosslinking Mechanism**  
 Tadashi NAKANO, KiHwan AN, SoRa JUNG  
*(APM, INC.)*

**Poster Session  
Bio Materials**

**P8-01 The Effect of Surface Treatment on the Formation of Apatite layer on Ti Alloys**Kyu Hong Hwang<sup>1</sup>, Jong Kook LEE<sup>2</sup>, Na Ra HA<sup>1</sup>, Zheng Xun YANG<sup>1</sup>, Min Ho CHO<sup>1</sup>*(1 Gyeongsang National University, 2 Chosun University)***P8-02 Bioactive Titanate Nano-Structured Layers on Ti-Based Bulk Metallic Glass by a Hydrothermal-Electrochemical Technique**Sayaka MARUYAMA<sup>1</sup>, Rieko ITO<sup>1</sup>, Naota SUGIYAMA<sup>1</sup>, Masahiro YOSHIMURA<sup>1</sup>, Takeshi WADA<sup>2</sup>, Xinmin WANG<sup>2</sup>, Akihisa INOUE<sup>2</sup>, Kiyoshi OKADA<sup>1</sup>, Nobuhiro MATSUSHITA<sup>1</sup>*(1 Tokyo Institute of Technology, 2 Tohoku University)***P8-03 Anticancer Drug-Loaded Calcium Phosphate Carriers for Drug Delivery System**Tomohiko YOSHIOKA<sup>1</sup>, Tomohiko MAMIYA<sup>1</sup>, Hidekuni KAMEDA<sup>1</sup>, Toru TONEGAWA<sup>1</sup>, Toshiyuki IKOMA<sup>2</sup>, Junzo TANAKA<sup>1</sup>*(1 Tokyo Institute of Technology, 2 National Institute for Materials Science)***P8-04 Dissolution Rate and Mechanism of The Hydroxyapatite and Tricalcium Fiber Scaffolds in A Pseudo Osteoclastic Resorption Lacuna Solution**Jun FUKASAWA<sup>1</sup>, Atsuo ITO<sup>2</sup>, Mamoru AIZAWA<sup>1</sup>*(1 Meiji University, 2 National Institute of Advanced Industrial Science and Technology)*

**Poster Session  
Nano-Materials**

**P9-01 Effect of Crystal Sizes on Heat Generation Ability in AC Magnetic Field for FeFe<sub>2</sub>O<sub>4</sub> Ferrite Powder Prepared by Bead Milling**Hideyuki HIRAZAWA<sup>1</sup>, Hiromichi AONO<sup>2</sup>, Takashi NAOHARA<sup>2</sup>, Tsunehiro MAEHARA<sup>2</sup>, Mitsunori SATO<sup>3</sup>, Yuji WATANABE<sup>2</sup>*(1 Niihama National College of Technology, 2 Ehime University, 3 AdMeTech Co., Ltd.)***P9-02 Preparation and Characterization of Exfoliated Natural Mica/Polymer Nanocomposites**Kenji TAMURA<sup>1</sup>, Hikaru UNO<sup>1,2</sup>, Hirohisa YAMADA<sup>1</sup>*(1 National Institute for Materials Science, 2 Hosei University)***P9-03 Fabrication of Functional N-Doped TiO<sub>2</sub> Nanoparticles by Laser Ablation and Thermal Decomposition Method**

Hyun Jin KOO, Hye Mi WOO, Yong Il KIM, Bong Guen CHOI, Chull Koo CHO, Kwang Bo SHIM

*(Hanyang University)***P9-04 The Analysis of Power Dependent of Nano Up-converting Y<sub>2</sub>O<sub>3</sub> Codoped Yb and Er Particles Luminescence Synthesis by PLA in Liquid Media**

Jong Won EUN, Jun Ho CHUNG, Bong Guen CHOI, Kwang Bo SHIM

*(Hanyang University)***P9-05 High Sensing Properties of the ZnO Nanowall Structures Synthesized by RF Magnetron Sputtering**

Gyu-In SHIM, Taeyoon KIM, Seung Hyun JEE, Young-Soo YOON, Se-Young CHOI

*(Yonsei University)*

- P9-06 Controlled Growth of Vertically Well-Aligned ZnO Nanowire Arrays and Their Optical Properties by The Thermal Evaporation**  
 Tran Van KHAI, Sin Young BANG, Jinkoo HYUN, Bong Geun CHOI, Chull Koo CHO, Kwang Bo SHIM  
*(Hanyang University)*
- P9-07 Aqueous Process Synthesis of Size-Controlled Magnetite Nanoparticles for Bio Medical Application**  
 Keishi FUSE, Kazunori NAKAGAWA, Takaaki TANIGUCHI, Ken-ichi KATSUMATA, Kiyoshi OKADA, Nobuhiro MATSUSHITA  
*(Tokyo Institute of Technology)*
- P9-08 Optical Properties of Porous Silicon Coated with Ultrathin Gold Film by RF Magnetron Sputtering**  
 Chongmu LEE, Chanseok HONG, Hohyeong KIM  
*(Inha University)*
- P9-09 Synthesis of Metal Nanoparticles by Gamma-Ray**  
 Sun-Woo CHOI, Jae Young PARK, Sang Sub KIM  
*(Inha University)*
- P9-10 A Simple Approach to the Synthesis of Ag Nanostructures by Photochemical Reduction at Room Temperature**  
 Hyeong-Ho PARK<sup>1</sup>, Xin ZHANG<sup>2</sup>, Yong-June CHOI<sup>1</sup>, Hyung-Ho PARK<sup>1</sup>, Ross H. HILL<sup>2</sup>  
*(1 Yonsei University, 2 Simon Fraser University)*
- P9-11 Variation in the Structural and Physical Characteristics of Nano-Sized BaTiO<sub>3</sub> Powders with Chemical Stoichiometry**  
 Sun-Min MOON<sup>1</sup>, Nam-Hee CHO<sup>1</sup>, Xiaohui WANG<sup>2</sup>  
*(1 Inha University, 2 Tsinghua University)*
- P9-12 Effect of Heat-treatment on the Structural Features of Nanoscale BaTiO<sub>3</sub> Powders**  
 Boram MIN<sup>1</sup>, Nam-Hee CHO<sup>1</sup>, Chang-Joo LEE<sup>2</sup>, Chang-Hak CHOI<sup>2</sup>  
*(1 Inha University, 2 Samsung Electro-Mechanics)*

**Poster Session  
 Energy & Ecological Materials**

- P10-01 Ceramics Diesel Particulate Filter with Continuous Pore Structure**  
 Yeon HWANG, Mi Hye PARK, Hyoung Gwon CHOI  
*(Seoul National University of Technology)*
- P10-02 Development of Novel Heat Insulator Using Porous Ceramics Materials**  
 Kazuma KUGIMIYA, Hideaki MATSUBARA  
*(Japan Fine Ceramics Center)*
- P10-03 Fabrication and Evaluation of MCFC Anode by Ni-Al Acetate**  
 Yeong-Woo KIM<sup>1</sup>, Seung-Tak KUK<sup>1</sup>, Dok-Yol LEE<sup>2</sup>, Jung-Hwan JUN<sup>1</sup>  
*(1 RIST, 2 Korea University)*
- P10-04 Performance and Flatness Betterment of Anode Supported Electrolytes for Planar SOFCs via Tape Casting and Co-firing**  
 Hae Gu PARK<sup>1</sup>, Jong Jin LEE<sup>1</sup>, Sung-Chul PARK<sup>1</sup>, Daeil YOON<sup>1</sup>, Sang Hoon HYUN<sup>1</sup>, Do-Hyeong KIM<sup>2</sup>  
*(1 Yonsei University, 2 Research Institute of Industrial Science and Technology)*

**P10-05 Influence of Break-in Condition of Single Cell on Cathode Loss of Pt-CeO<sub>x</sub> in PEMFC**

Keisuke FUGANE<sup>1,2</sup>, Fei YE<sup>1,2</sup>, Toshiyuki MORI<sup>1</sup>, Akira AUZUKI<sup>1</sup>, Norihisa NAKAMURA<sup>1</sup>, Noriyasu OKAZAKI<sup>2</sup>

(1 National Institute for Materials Science, 2 Kitami Institute of Technology)

**P10-06 A Fabrication of Pt-CeO<sub>2</sub> Composite Electrode Thin Films for Solid Oxide Fuel Cells Application**

Norihisa NAKAMURA, Toshiyuki MORI, Fei YE, Yongke YAN, Zipeng LI

(National Institute for Materials Science)

**P10-07 Investigation of Electrocatalysis of Methanol Oxidation Reaction on Pt-Sn-CeO<sub>2</sub> Films for Fuel Cell Application**

Kostyantyn TUHARIN<sup>1,2</sup>, Toshiyuki MORI<sup>1</sup>, Hiroataka TOGASAKI<sup>1</sup>, Keisuke FUGANE<sup>1</sup>, Norihisa NAKAMURA<sup>1</sup>, Ivan KRAKOVSKY<sup>2</sup>, Vladimir MATOLIN<sup>2</sup>

(1 National Institute for Materials Science, 2 Charles University)

**P10-08 A Study of CVD SiC Whiskers on Carbon Fiber for High Efficiency Filter Applications**

Yoo Youl CHOI, Jun Gyu KIM, Doo Jin CHOI

(Yonsei University)

**P10-09 Fabrication of Candle Type SiC Filter for Coal Gasification Process and its Properties**

Ki Seog HONG, In Sub HAN, Doo Won SEO, Seyoung KIM, Ji Haeng YU, Sang Kuk WOO

(Korea Institute of Energy Research)

**P10-10 Texturing & SiN AR Coating of Multi-Crystalline Wafer Using UMG Silicon**

Kyoon CHOI, Hyo-Han KIM, Jung-Hyun EUM, Hyo-Sik CHANG, Yu-Jin KIM, Kyung-Ja KIM

(Korea Institute of Ceramic Engineering & Technology)

**P10-11 Silver Paste for Dispenser in Solar Cell Process**

Hyeong-Jun KIM<sup>1</sup>, Sung-Gyu SEO<sup>1</sup>, Sung-Soo RYU<sup>1</sup>, Jwa-Jin JEONG<sup>2</sup>, Jung-Han SHIN<sup>2</sup>

(1 Korea Institute of Ceramic Engineering and Technology, 2 Naraenotech Corp)

**P10-12 Preparation of TiO<sub>2</sub>/sepiolite Composite Materials for Photocatalyst**

Yohei NEGI, Yoko SUYAMA

(Shimane University)

**P10-13 Fabrication and Characterization of TiO<sub>2</sub>/zeolite Composite**

Hidenori HOSHINO, Masahide AKASAKA, Yoko SUYAMA

(Shimane University)

**P10-14 Effect of Microstructure on Oxygen Permeation Through Ba-Fe-Based Perovskite Oxide**

Ken WATANABE<sup>1</sup>, Masayoshi YUASA<sup>2</sup>, Tetsuya KIDA<sup>2</sup>, Isao SAKAGUCHI<sup>1</sup>, Naoki OHASHI<sup>1</sup>, Kengo SHIMANO<sup>2</sup>, Hajime HANEDA<sup>1</sup>

(1 National Institute for Materials Science, 2 Kyushu University)

**P10-15 Mechanochemical Synthesis of Lead Vanado-Iodoapatite**

Yasushi SUETSUGU

(National Institute for Materials Science)

**P10-16 Photocatalytic Properties of Hydrotalcite for Anionic Dyes**

Kazuya MORIMOTO, Kenji TAMURA, Hirohisa YAMADA

(National Institute for Materials Science)

**P10-17 Development of PED Three Layer Structure with Onggi for Energy Saving Green Building Block**

Jeong Eui CHA<sup>1</sup>, Seung Chul CHOI<sup>1</sup>, Seung Ju LEE<sup>2</sup>  
(1 Ajou University, 2 E2RD Company)

**P10-18 Effect of Fly ash on the Removal of Heavy Metal Ions from Aqueous Solution**

Hee Gon BANG, Sung Jin KIM, Jun Ki CHUNG, Sang Yeup PARK  
(Kangnung National University)

**P10-19 Fabrication and Characterization of Ca<sub>3</sub>CO<sub>4</sub>O<sub>9</sub> Thermoelectric Thick Films by Aerosol-Deposition**

Woon-Ha YOON, Jungho RYU, Byung-Dong HAHN, Jong-Jin CHOI, Byoung-Kuk LEE, Joon Hwan CHOI, Dong-Soo PARK, Ki-Hoon KIM  
(Korea Institute of Materials Science)

**P10-20 Thermoelectric Properties of Nanostructured Nb-Doped Strontium Titanate Ceramics**

Kyoichi FUJINAMI<sup>1,2</sup>, Yifeng WANG<sup>1</sup>, Ning WANG<sup>1</sup>, Chunlei WAN<sup>1,3</sup>, Ruizhi ZHANG<sup>1,4</sup>, Kunihito KOUMOTO<sup>1,3</sup>  
(1 Nagoya University, 2 Tokuyama corporation, 3 Japan Science and Technology Agency, 4 Shangdong University)

**Poster Session  
Evaluation & Standardization**

**P11-01 Simulation for The Depth Change of PRAM Bottom Electrode Contact**

Jun-Hyun BAE, Byung-Geun KIM, Dae-Seop BYEON, Hong-Lim LEE  
(Yonsei University)

**Poster Session  
Recent Topics / ex,; Nano-crystal Ceramics, Nanobio etc.**

**P12-01 Self-Consistent Anharmonic Theory and Its Application to Surface Effect of Ferroelectric Crystal**

Yutaka AIKAWA, Yoshio IWAZAKI, Tatsuo SAKASHITA, Toshimasa SUZUKI  
(Taiyo Yuden Co., Ltd.)

**P12-02 Density-Functional Calculations for The Stability of Hydride Ion at Oxygen-Vacancy Site in BaTiO<sub>3</sub>**

Yoshiki IWAZAKI<sup>1,2</sup>, Toshimasa SUZUKI<sup>1</sup>, Shinji TSUNEYUKI<sup>2</sup>  
(1 Taiyo Yuden Co.,Ltd., 2 University of Tokyo)

**P12-03 3D-Orientation of BaTiO<sub>3</sub> Nanoparticles Electrophoretically Deposited on SrTiO<sub>3</sub> Single Crystal Substrate**

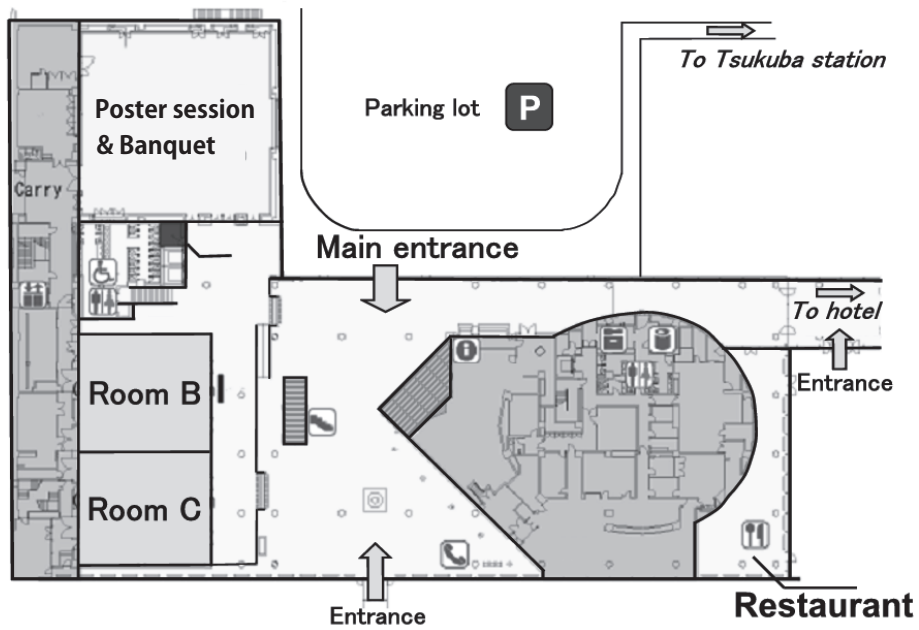
Yuta MORIURA<sup>1,2</sup>, Minoru OSADA<sup>2</sup>, Naoki OHASHI<sup>1,2</sup>, Hajime HANEDA<sup>1,2</sup>, Makoto KUWABARA<sup>1</sup>  
(1 Kyushu University, 2 National Institute for Materials Science)

**P12-04 Low Temperature Formation of Mesoporous Silicon Carbide (SiC) via Reaction of Mesoporous Carbon**

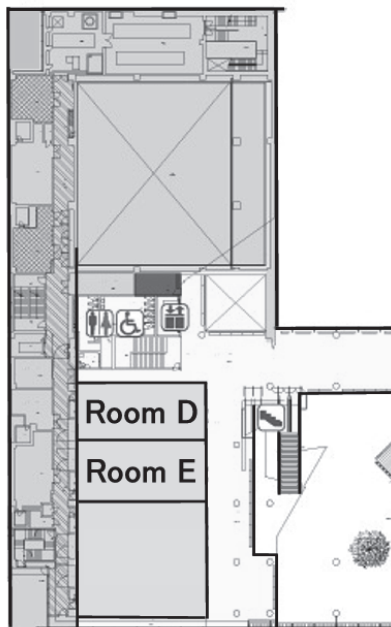
Tamil Selvan SAKTHIVEL<sup>1,2</sup>, Arivuoli DAKSHANAMOORTHY<sup>2</sup>, Vinu AJAYAN<sup>1</sup>, Toshiyuki MORI<sup>1</sup>  
(1 National Institute for Materials Science, 2 Anna University)

# EPOCHAL TSUKUBA Floor guide

**1F**



**2F**



**3F**

