

## Program at a Glance

Time	<b>November 22<sup>nd</sup>, Opening Ceremony and Keynote Lectures at "Lakai Ballroom I"</b>			
09:30-09:50	<b>Opening Ceremony</b>			
09:50-10:30	Plenary Talk1 : Prof. Jong Heun Lee (Korea University, Korea)			
09:30-10:50	Coffee Break			
10:50-11:30	Plenary Talk2 : Prof. Hisao Suzuki (Shizuoka University, Japan)			
11:30-12:10	Plenary Talk3 : Prof. Prof. Xiang Min Chen (Zhejiang University, China)			
Time	<b>November 22<sup>nd</sup>, Poster Session at "Lakai Ballroom II"</b>			
13:00-14:20	<b>Poster Session</b>			
Time	<b>November 22<sup>nd</sup>, Oral Session at "Room B, C, D, E"</b>			
	Room B (Sandpine)	Room C (Hae-Woon)	Room D (Ho-Hae)	Room E (CheonYeon II)
14:30-14:45	C-01-I	B-01-I	D-01-I	F-01-I
14:45-15:00		B-02-I	D-02	F-02-I
15:00-15:15	C-02-I	B-04	D-03	F-04-I
15:15-15:30		B-17	D-04	
15:30-15:45	C-04-I	B-18		
15:45-16:00				
16:00-16:15	Coffee Break	Coffee Break	Coffee Break	
16:15-16:30	C-03	B-03-I	I-01-I	F-06-I
16:30-16:45	C-05		I-02	F-03
16:45-17:00	C-06	B-05-I	I-03	F-05
17:00-17:15	C-07		I-04	F-07
17:15-17:30	C-08	B-06-I		F-08
17:30-17:45	C-09	B-07		F-09
17:45-18:00	C-10	B-11		
Time	<b>November 22<sup>nd</sup>, Banquet at "Lakai Ballroom"</b>			
18:30-	<b>Banquet</b>			
Time	<b>November 23<sup>rd</sup>, Oral Session at "Room B, C, D, E"</b>			
	Room B (Sandpine)	Room C (Hae-Woon)	Room D (Ho-Hae)	Room E (CheonYeon II)
09:30-09:45	A-01-I	B-19-I	H-01-I	F-10-I
09:45-10:00		B-20	H-02	F-11-I
10:00-10:15	A-02	B-21	H-03-I	
10:15-10:30	A-03	B-22		
10:30-10:45	A-04-I	Coffee Break	Coffee Break	
10:45-11:00				
11:00-11:15	A-05-I	B-12-I	H-05	F-13
11:15-11:30		B-13-I	H-06	F-14
11:30-11:45	A-06	B-10	H-07-I	
11:45-12:00	A-07			
12:00-13:00	Lunch			
13:00-13:15	E-01-I	B-15-I	H-09	G-01
13:15-13:30		B-16-I	H-10	G-02
13:30-13:45	E-02	B-08-I	H-11	G-03
13:45-14:00	E-03		H-12	G-05
14:00-14:15	E-04	B-09-I	H-13	G-04-I
14:15-14:30	Coffee Break		Coffee Break	
14:30-14:45		B-14	H-14	
14:45-15:00			H-04	
15:00-15:15			H-08	
15:15-15:30				
15:30-16:00				
16:00-16:15	Coffee Break			
Time	<b>November 23<sup>rd</sup>, Closing Remarks at "Room E (Cheon-Yeon II)"</b>			
17:00-	<b>Closing Remarks</b>			

## **Plenary, Invited, and Oral Session**

### **Plenary Talk**

Session Chair : Myong Ho KIM, Changwon National University, Korea  
: Jun AKEDO, AIST, Japan

Date : November 22<sup>nd</sup> / Place : Lakai Ballroom I

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Plenary Talk1 09:50-10:30	<b>Highly Sensitive, Selective, and Robust Oxide Semiconductor Gas Sensors: New Opportunities and Challenges</b> Jong-Heun Lee <i>Department of Materials Science and Engineering, Korea University, Korea</i>
Plenary Talk2 10:50-11:30	<b>Can Chemistry Open A New World of Ceramics? - Impact of Molecular Design for Nanoparticles and Thin Films -</b> Hisao SUZUKI <i>Research Institute of Electronics, Shizuoka University, Japan</i>
Plenary Talk3 11:30-12:10	<b>Recent Progresses in Room-Temperature Single Phase Multiferroic Ceramics</b> Xiang Ming Chen <i>Institute of Materials Physics, School of Materials Science and Engineering, Zhejiang University, China</i>

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## Invited and Oral Session

### Session A : Ceramics for Sustainable Energy

(Fuel Cells, Batteries, Secondary Cells, Solar Cell, Thermoelectrics, etc.)

Date : November 23<sup>rd</sup> / Place : Room B (Sandpine)

Session Chair : Byung Chul Kim, Suncheon National University, Korea  
: Michitaka Ohtaki, Kyushu University, Japan

A-01-I 09:30-10:00	<b>[Invited]</b> <b>Control of Vacancy Distribution and Grain-Boundary Phases for High Proton Conduction in Perovskite-Oxide Electrolytes</b> Hye-Sung KIM, Sung-Yoon CHUNG* <i>Department of Materials Science and Engineering, KAIST, Korea</i>
A-02 ★ 10:00-10:15	<b>A novel approach for negating interfacial resistance in all ceramic type Lithium battery</b> P. JEEVAN KUMAR <sup>1</sup> , J. TARUNA TEJA <sup>2</sup> , T. KAWAGUCHI <sup>2</sup> , N. SAKAMOTO <sup>1</sup> , N. WAKIYA <sup>1</sup> , HISAO SUZUKI <sup>1*</sup> <sup>1</sup> <i>Research Institute of Electronics, Shizuoka University, Japan.</i> <sup>2</sup> <i>Graduate School of Integrated Science and Technology, Department of Engineering, Shizuoka University, Japan.</i>
A-03 ★ 10:15-10:30	<b>A novel approach to ambient energy (thermoelectric, piezoelectric and solar-TPS) harvesting using a single structured MAPbI<sub>3</sub> based TPS-fusion device</b> Venkatraju JELLA, Soon-Gil YOON* <i>Department of Materials Science and Engineering, Chungnam National University, Korea</i>
A-04-I 10:30-11:00	<b>[Invited]</b> <b>Most Facile Synthesis of Zn-Al:LDHs Nanosheets at Room Temperature via Environmentally Friendly Process and Their High Power Generation by Flexoelectricity</b> Ji-Ho Eom and Soon-Gil Yoon* <i>Department of Materials Science and Engineering, Chungnam National University, Korea</i>

Session Chair : Byung Chul Kim, Suncheon National University, Korea  
: Michitaka Ohtaki, Kyushu University, Japan

A-05-I 11:00-11:30	<b>[Invited]</b> <b>Supercapacitor electrodes with PEDOT nanostructure</b> Byung Chul Kim, Gordon Wallace, and Murugesan Rajesh <i>SunChon National University Korea</i> <i>Innovation Campus, University of Wollongong, Australia</i> <i>Ulsan National Institute of Science and Technology, Korea</i>
A-06 ★ 11:30-11:45	<b>Crystallization of the Na<sub>2</sub>FexNi<sub>1-x</sub>P<sub>2</sub>O<sub>7</sub> glass and ability of cathode for sodium ion batteries</b> Yongzheng JI, Tsuyoshi HONMA*, Takayuki KOMATSU <i>Nagaoka University of Technology, Japan</i>
A-07 ★ 11:45-12:00	<b>Metal Oxide Nanostructures for Pseudocapacitor</b> C. Justin Raj and S. Jerome Das <i>Department of Chemistry, Dongguk University-Seoul, Jung-gu, Korea</i> <i>Department of Physics, Loyola College, India</i>

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## Session B : Electroceramics and Applications

(Electronic Ceramics, Magnetic Ceramics, Piezoelectrics, Sensor Materials, etc.)

Date : November 22<sup>nd</sup> / Place : Room C (Hae-Woon)

Session Chair : Soonil Lee, Changwon National University, Korea  
: Hajime Nagata, Tokyo University of Science, Japan

B-01-I 14:30-14:55	<b>[Invited]</b> <b>Octahedral rotations and their impacts on polarization properties in A-site substituted ferroelectric perovskite oxides</b> Yuuki KITANAKA, Yuji NOGUCHI, Masaru MIYAYAMA <i>School of Engineering, The University of Tokyo, Japan</i>
B-02-I 14:55-15:20	<b>[Invited]</b> <b>Enhanced Ferroelectricity in Perovskite Oxysulfides</b> Tae Heon Kim* <i>Department of Physics, University of Ulsan, Korea</i>
B-04 ★ 15:20-15:35	<b>Material softening by ion off-centering in Bi-based lead-free piezoelectric ceramics</b> Sangwook KIM <sup>1</sup> , Ichiro FUJII <sup>1</sup> , Shintaro UENO <sup>1</sup> , Chikako MORIYOSHI <sup>2</sup> , Yoshihiro KUROIWA <sup>2</sup> , Satoshi WADA <sup>1*</sup> <sup>1</sup> <i>University of Yamanashi, Japan</i> <sup>2</sup> <i>Hiroshima University, Japan</i>
B-17 15:35-15:50	<b>Dielectric Properties of Mg<sub>4</sub>(Nb<sub>x</sub>Ta<sub>y</sub>Sb<sub>z</sub>)O<sub>9</sub> (x+y+z = 2) Ceramics at Microwave Frequencies</b> Jae Min KIM, Eung Soo KIM. <i>Department of Materials Engineering, Kyonggi University, Suwon, Korea</i>
B-18 ★ 15:50-16:05	<b>Effect of Complex Substitution on Microwave Dielectric Properties of Mg<sub>2</sub>Ti<sub>1-x</sub>(Ni<sub>1/3</sub>Sb<sub>2/3</sub>)<sub>x</sub>O<sub>4</sub> (0.025 ≤ x ≤ 0.1) Ceramics</b> Yun Sik PARK, Eung Soo KIM* <i>Department of Materials Engineering, Kyonggi University, Korea</i>

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Date : November 22<sup>nd</sup> / Place : Room C (Hae-Woon)

Session Chair : Tae Heon Kim, University of Ulsan, Korea  
: Yuuki Kitanaka, University of Tokyo, Japan

B-03-I 16:20-16:45	<b>[Invited]</b> <b>Grain-oriented BT-BNT Piezoceramics</b> Kosuke Kawachi, Minsu Kim, Ryo Ito, Ichiro Fujii, Shintaro Ueno, <u>Satoshi Wada</u> <sup>*</sup> <i>Material Science and Technology, University of Yamanashi, Japan</i>
B-05-I 16:45-17:10	<b>[Invited]</b> <b>Behavior of Templates during Texturing of Piezoelectric Ceramics</b> Jae-Ho JEON <sup>1,2*</sup> , Kyung-Won LIM <sup>1</sup> , Hyun Ae CHA <sup>1</sup> , Ashutosh UPADHYAY <sup>1</sup> , Ho-Chang Lee <sup>1</sup> , Temesgen T. ZATE <sup>2</sup> , Asmat ULLAH <sup>2</sup> <sup>1</sup> Functional Powder Research Lab., Korea Institute of Materials Science, Korea <sup>2</sup> Campus of Korea Institute of Materials Science, University of Science and Technology, Korea
B-06-I 17:10-17:30	<b>[Invited]</b> <b>Ferroelectric seeds-induced phase evolution and large electrostrain under reduced poling field in bismuth-based composites</b> Ill Won Kim <sup>*</sup> , Abdul Khaliq, Tae Heon Kim, and Shinuk Cho, <i>Department of Physics and EHSRC, University of Ulsan, Korea</i>
B-07 ★ 17:30-17:45	<b>Enhanced Piezoelectric and Thermally-stable High Dielectric Properties of 0.65Bi<sub>1.05</sub>FeO<sub>3</sub>-0.35BaTiO<sub>3</sub>-based Ceramics</b> Fazli AKRAM, Salman Ali KHAN, Seung Bong BAEK, Jun Chan KIM, Tauseef AHMED, Soonil LEE <sup>**</sup> , Tae Kwon SONG, and Myong-Ho KIM <sup>*</sup> <i>School of Materials Science and Engineering, Changwon National University, Korea</i>
B-11 ★ 17:45-18:00	<b>High output performance of a flexible piezoelectric generator based on stable MAPbI<sub>3</sub>-PVDF composite films</b> Swathi IPPILI, Venkatraju JELLA, Soon-Gil YOON <sup>*</sup> <i>Department of Materials Science and Engineering, Chungnam National University, Korea</i>

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## Session B : Electroceramics and Applications

(Electronic Ceramics, Magnetic Ceramics, Piezoelectrics, Sensor Materials, etc.)

Date : November 23<sup>rd</sup>/ Place : Room C (Hae-Woon)

Session Chair : Chae Il Cheon, Hoseo University, Korea  
: Nibuhito Imanaka, Osaka University, Japan

B-19-I 09:30-09:55	[Invited] <b>Novel Calcium Ion Conducting Solid Electrolyte with NASICON-type Structure</b> Nobuhito IMANAKA* <i>Department of Applied Chemistry, Faculty of Engineering, Osaka University, Japan</i>
B-20 ★ 09:55-10:10	<b>Complete Combustion of Toluene over Pt/CeO<sub>2</sub>-ZrO<sub>2</sub>-NiO/<math>\gamma</math>-Al<sub>2</sub>O<sub>3</sub></b> Naoyoshi NUNOTANI, Minchan JEONG, Naoki MORIYAMA, Nobuhito IMANAKA* <i>Department of Applied Chemistry, Faculty of Engineering, Osaka University, Japan</i>
B-21 ★ 10:10-10:25	<b>Direct Catalytic Decomposition of Nitrous Oxide using C-type Cubic Yb<sub>2</sub>O<sub>3</sub>-Pr<sub>6</sub>O<sub>11</sub></b> Chang-Min CHO, Naoyoshi NUNOTANI, Yuka WATANABE, Nobuhito IMANAKA* <i>Department of Applied Chemistry, Faculty of Engineering, Osaka University, Japan</i>
B-22 ★ 10:25-10:40	<b>Improvement of H<sub>2</sub> gas selectivity for SnO<sub>2</sub> gas sensors using nanosheet structure</b> Pil Gyu CHOI <sup>1</sup> , Noriya IZU <sup>1</sup> , Naoto SHIRAHATA <sup>2</sup> , Yoshitake MASUDA <sup>1*</sup> . <sup>1</sup> National Institute of Advanced Industrial Science and Technology (AIST), Japan <sup>2</sup> National Institute for Materials Science (NIMS), Japan

Session Chair : Ho-Yong Lee, Ceracomp Co., Ltd., Korea  
: Satoshi Wada, University of Yamanashi, Japan

B-12-I 10:55-11:20	[Invited] <b>Electrical Properties of (Li,Na)NbO<sub>3</sub> Lead-free Piezoelectric Ceramics After High Electrical Field Poling</b> Rintaro AOYAGI* <i>Advanced Coating Technology Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Japan</i>
B-13-I 11:20-11:45	[Invited] <b>Direct and indirect Measurements on the Electro-Caloric Effect in (Bi,Na)TiO<sub>3</sub>-SrTiO<sub>3</sub> Ceramics</b> Dae Su KIM <sup>1,2</sup> , Bit Chan KIM <sup>1</sup> , Jeong Seog KIM <sup>1</sup> , Chae Il CHEON <sup>1*</sup> <sup>1</sup> Department of Materials Science and Engineering, Korea <sup>2</sup> Korea electronics Technology Institute, Korea
B-10 ★ 11:45-12:00	<b>Fabrication of 85(Bi<sub>0.5</sub>Na<sub>0.5</sub>)TiO<sub>3</sub>-15hexagonal BaTiO<sub>3</sub> green body with high magnetic field electrophoretic deposition method</b> Minsu Kim <sup>1</sup> , Ichiro Fujii <sup>1</sup> , Shintaro Ueno <sup>1</sup> , Tohru S. Suzuki <sup>2</sup> , Tetsuo Uchikoshi <sup>2</sup> , Satoshi Wada <sup>1*</sup> <sup>1</sup> Interdisciplinary Graduate School of Medicine and Engineering, University of Yamanashi, Japan <sup>2</sup> Research Center for Functional Materials, National Institute for Materials Science, Japan

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## Session B : Electroceramics and Applications

(Electronic Ceramics, Magnetic Ceramics, Piezoelectrics, Sensor Materials, etc.)

Date : November 23<sup>rd</sup>/ Place : Room C (Hae-Woon)

Session Chair : Tea-Kwon Song, Changwon National University, Korea  
: Rintaro Aoyagi, AIST, Japan

B-15-I 13:00-13:25	<p>[Invited] <b>Silver Diffusion Behavior into (Bi<sub>1/2</sub>Na<sub>1/2</sub>)TiO<sub>3</sub> Ferroelectric Ceramics</b> Hajime. NAGATA<sup>1*</sup>, Isao SAKAGUCHI<sup>2</sup>, Tadashi TAKENAKA<sup>1</sup> <sup>1</sup>Department of Electrical Engineering, Faculty of Science and Technology, Tokyo University of Science, Japan <sup>2</sup>National Institute of Materials Science, Japan</p>
B-16-I 13:25-13:50	<p>[Invited] <b>Multivalent manganese oxide doping in clean or dirty BiFeO<sub>3</sub>-BaTiO<sub>3</sub> piezoelectric ceramics</b> Tae Kwon SONG<sup>1*</sup>, Da Jeong KIM<sup>1</sup>, M.-H. KIM<sup>1</sup>, W.-J. KIM<sup>2</sup>, K. CHOI<sup>3</sup> <sup>1</sup>School of Materials Science and Engineering, Changwon National University, Korea <sup>2</sup>Department of Physics, Changwon National University, Korea <sup>3</sup>Department of Physics Education, Suncheon National University, Korea</p>
B-08-I 13:50-14:15	<p>[Invited] <b>Piezoelectric “SSCG” Single Crystals and Their Composites: Lead-based and Lead-free</b> Hyun-Taek Oh<sup>1</sup>, Dong-Ho KIM<sup>1</sup>, Ho-Yong LEE<sup>1,2*</sup> <sup>1</sup>Ceracomp Co., Ltd., Korea <sup>2</sup>Department of Advanced Materials Eng., Sunmoon University, Korea</p>
B-09-I 14:15-14:40	<p>[Invited] <b>Growth of lead-free piezoelectric single crystals by solid state crystal growth and their electrical properties</b> Phan Gia LE<sup>1</sup>, Meng MENG<sup>1</sup>, Thuy Linh PHAM<sup>1</sup>, Thanh Dang NGUYEN<sup>1</sup>, Jong Sook LEE<sup>1</sup>, John G.FISHER<sup>1*</sup>, Hwang-Pil KIM<sup>2</sup>, Wook JO<sup>2</sup>, Byoung-Wan LEE<sup>3</sup> and Jae-Hyeon KO<sup>3</sup> <sup>1</sup>School of Materials Science and Engineering, Chonnam National University, Republic of Korea <sup>2</sup>School of Materials Science and Engineering, Ulsan National Institute of Science and Technology, Republic of Korea <sup>3</sup>Department of Physics, Hallym University, Republic of Korea</p>
B-14 ★ 14:40-14:55	<p><b>Enhanced Piezoelectric Properties of BiAlO<sub>3</sub>-modified 0.65BiFeO<sub>3</sub>-0.35BaTiO<sub>3</sub> Ceramics</b> Salman Ali KHAN<sup>1</sup>, Fazli AKRAM<sup>1</sup>, Seung Bong BAEK<sup>1</sup>, Jun Chan KIM<sup>1</sup>, Tauseef AHMED<sup>1</sup>, Soonil LEE<sup>1,*,**</sup>, Tae Kwon SONG<sup>1</sup>, and Myong-Ho KIM<sup>1,*</sup> <sup>1</sup>School of Materials Science and Engineering, Changwon National University, Korea</p>

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## **Session C : Engineering Ceramics**

(Structural And 3D Printing, Including Powder Processing etc.)

**Date : November 22<sup>nd</sup>/ Place : Room B (Sandpine)**

Session Chair : Byung-Koog Jang, Kyushu University, Japan  
: Teichi Kimura, Japan Fine Ceramics Center, Japan

C-01-I 14:30-15:00	<b>[Invited]</b> <b>Thermo-Corrosive and Mechanical Properties of ZrO<sub>2</sub> based Thermal Barrier Coatings</b> Byung-Koog JANG <sup>1</sup> , Seongwon KIM <sup>2</sup> , Yoon-Suk Oh <sup>2</sup> , Sung-Min LEE <sup>2</sup> , Hyung-Tae KIM <sup>2</sup> <sup>1</sup> <i>Interdisciplinary Graduate School of Engineering Sciences, Kyushu University, Japan</i> <sup>2</sup> <i>Engineering Ceramic Center, Korea Institute of Ceramic Engineering and Technology, Korea</i>
C-02-I 15:00-15:30	<b>[Invited]</b> <b>In-situ observation of internal structure of alumina during sintering by optical coherence tomography</b> Junichi TATAMI <sup>1,2*</sup> , Fumika SAKAMOTO <sup>1</sup> , Takuma TAKAHASHI <sup>2</sup> , Motoyuki IJIMA <sup>1,2</sup> <sup>1</sup> <i>Yokohama National University, Japan</i> <sup>2</sup> <i>Kanagawa Institute of Industrial Science and Technology, Japan</i>
C-04-I 15:30-16:00	<b>[Invited]</b> <b>Particle orientation rate in condensed slurry in strong magnetic field</b> Satoshi TANAKA <sup>1*</sup> <i>Department of Materials Science and Technology, Nagaoka University of Technology, Japan</i>

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## Session C : Engineering Ceramics

(Structural And 3D Printing, Including Powder Processing etc.)

Date : November 22<sup>nd</sup>/ Place : Room B (Sandpine)

Session Chair : Byung-Koog Jang, Kyushu University, Japan

: Teiichi Kimura, Japan Fine Ceramics Center, Japan

C-03 16:15-16:30	<b>Crystal Structure and Thermal Properties of Cation-Deficient Perovskite-Type Oxides</b> Tsuneaki MATSUDAIRA <sup>1*</sup> , Naoki KAWASHIMA <sup>1</sup> , Takafumi OGAWA <sup>1</sup> , Craig A. J. FISHER <sup>1</sup> , Takeharu KATO <sup>1</sup> , Daisaku YOKOE <sup>1</sup> , Yoichiro HABU <sup>2</sup> , Satoshi KITAOKA <sup>1</sup> <sup>1</sup> Japan Fine Ceramics Center, Japan <sup>2</sup> TOCALO Co.,Ltd., Japan
C-05 ★ 16:30-16:45	<b>Study on the discrepancy of sintering behavior in polycarbosilane-derived SiC ceramics</b> Ji Hwoan LEE <sup>1</sup> , Yoonjoo LEE <sup>2</sup> , Dong-Guen SHIN <sup>2</sup> , Young-Hwan HAN <sup>3</sup> , Sukeyoung KIM <sup>4</sup> , Byung-Koog JANG <sup>1</sup> . <sup>1</sup> Interdisciplinary Graduate School of Engineering Sciences, Kyushu University, Japan <sup>2</sup> Korea Institute of Ceramic Engineering and Technology, Korea <sup>3</sup> International School of Materials Science and Engineering, Wuhan University of Technology, China <sup>4</sup> School of Materials Science and Engineering, Yeungnam University, Korea
C-06 ★ 16:45-17:00	<b>Fabrication of functionally graded materials using ceramic additive manufacturing</b> Jeehwan Kim <sup>1,2</sup> , Honghyun Park <sup>1</sup> , Waqas Ahmed Sarwar <sup>1</sup> , Seok Young Yoon <sup>2</sup> , Hui-suk Yun <sup>1*</sup> <sup>1</sup> Engineering Ceramics Research Group, Korea Institute of Materials Science, Korea <sup>2</sup> Department of Materials Science and Engineering, Pusan National University, Korea
C-07 ★ 17:00-17:15	<b>Phase Fraction of Tripositive Metal Ion Oxide doped Zirconium Dioxide (M<sub>2</sub>O<sub>3</sub>-ZrO<sub>2</sub>) Systems: Sc, Y, La</b> Min-sung PARK <sup>1</sup> , Buyoung KIM <sup>2</sup> , Kang hi Jo <sup>1</sup> , Hwan seok Lee <sup>1</sup> , Seong hoon KIM <sup>1</sup> , Heesoo LEE <sup>1*</sup> <sup>1</sup> School of Materials Science and Engineering, Pusan National University, Korea <sup>2</sup> HyMAR Corporation, Korea
C-08 ★ 17:15-17:30	<b>Reaction sintering of silicon carbide ceramics by direct laser heating</b> Satoshi Suehiro <sup>*</sup> , Teiichi Kimura Materials Research and Development Laboratory, Japan Fine Ceramic Center, Japan
C-09 17:30-17:45	<b>Rapid Sintering of Alumina using Nd:YAG laser</b> Teiichi KIMURA <sup>*</sup> , Satoshi SUEHIRO Japan Fine Ceramics Center, Japan
C-10 ★ 17:45-18:00	<b>Low-temperature synthesis and facile exfoliation of the KCa<sub>2</sub>Nb<sub>3</sub>O<sub>10</sub> layered compound</b> Masoud SAKAKI, Ryo OKUBI, Yongqiang FENG, Koji KAJIYOSHI <sup>*</sup> Research Laboratory of Hydrothermal Chemistry, Faculty of Science and Technology, Kochi University, Japan

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## **Session D : Bio and Porous Ceramics** (Soft Materials, Bioapplications etc.)

**Date : November 22<sup>nd</sup>/ Place : Room D (Ho-Hae)**

Session Chair : Ik Jin Kim, Hanseo University, Korea  
: Toshihiro Kasuga, Nagoya Institute of Technology, Japan

D-01-I 14:30-15:00	<p>[Invited]  <b>Novel processing to synthesis carbon nanotube on template coated biomorphic materials</b>            Jung Gyu Park, and <u>Ik Jin Kim</u><sup>*</sup>  <i>Institute of Processing and Application of Inorganic Materials, (PAIM),            Department of Materials Science and Engineering, Hanseo University, Korea.</i></p>
D-02 ★ 15:00-15:15	<p><b>Fabrication of organic/inorganic hybrid bead with phytoestrogen and cells for osteoporotic bone tissue regeneration</b>  <u>Jueun Kim</u><sup>1,2</sup>, Honghyun Park<sup>2</sup>, Hui-suk Yun<sup>1,2*</sup>  <sup>1</sup><i>Korea University of Science and Technology (UST), Korea</i>  <sup>2</sup><i>Korea Institute of Materials Science, Korea</i></p>
D-03 ★ 15:15-15:30	<p><b>Fast Setting Cement Reaction of 3D Printed Calcium Phosphate Scaffolds for Drug Loading and Bone Tissue Engineering</b>  <u>Naren RAJA</u><sup>1,2</sup>, Honghyun PARK<sup>2</sup>, Hui-suk YUN<sup>1,2*</sup>  <sup>1</sup><i>Korea University of Science and Technology (UST), Korea.</i>  <sup>2</sup><i>Korea Institute of Materials Science, Korea.</i></p>
D-04 ★ 15:30-15:45	<p><b>Thermal and Hydrolytic Stability of OCP/Gelatin/Collagen Composite</b>  <u>Riessa MERTAMANI</u><sup>1</sup>, Sukeyoung KIM<sup>1*</sup>  <sup>1</sup><i>School of Materials Science and Engineering, Yeungnam University, Korea</i></p>

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## **Session E : Basic Science of Ceramics**

**Date : November 23<sup>rd</sup> / Place : Room B (Sandpine)**

Session Chair : Kyun Choi, KICET, Korea  
: Hisahiro Einaga, Kyushu University, Japan

E-01-I 13:00-13:30	<b>[Invited]</b> <b>Catalyst Design of Ni-containing Perovskite Oxides for CO Oxidation</b> Hisahiro EINAGA <sup>1*</sup> <i>Department of Material Sciences, Faculty of Engineering Sciences, Kyushu University, Japan</i>
E-02 13:30-13:45	<b>Understanding the Stability of Metal Mononitrides and Monooxides: An Experimental and First Principle Calculation Study</b> Kei INUMARU <sup>*</sup> , Neota FURUICHI <i>Department of Applied Chemistry, Graduate School of Engineering, Hiroshima University, Japan</i>
E-03 ★ 13:45-14:00	<b>Development of Environmentally Friendly Inorganic Pigments for energy saving material</b> Byungseo BAE <sup>1*</sup> , Sun Woog Kim <sup>2</sup> , Yonghyun Lee <sup>1</sup> , Dong Sik Bae <sup>3*</sup> <i><sup>1</sup>Advanced Resources Team, Yeongwol Industrial Promotion Agency, Korea</i> <i><sup>2</sup>Electronic Convergence Materials Division, Optic &amp; Display Materials Center, Korea Institute of Ceramic Engineering and Technology, Korea</i> <i><sup>3</sup>Department of Advanced Materials Science and Engineering, Changwon National University, Korea</i>
E-04 14:15-14:30	<b>Novel Inorganic Orange Pigments Based on Ca<sub>14</sub>Al<sub>10</sub>Zn<sub>6</sub>O<sub>35</sub></b> Toshiyuki MASUI, Ryohei OKA, Takashi KOSAYA <i>Center for Research on Green Sustainable Chemistry, Department of Chemistry and Biotechnology, Graduate School of Engineering, Tottori University, Japan</i>

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## Session F : Glasses

Date : November 22<sup>nd</sup>/ Place : Room E (Cheon-Yeon II)

Session Chair : Yong Gyu Choi, Korea Aerospace Univ., Korea  
: Takayuki Komatsu, Nagaoka University of Technology, Japan

F-01-I 14:30-15:00	<p>[Invited] <b>Structure and dynamics of densified silica glass</b> Shinji KOHARA<sup>1,2,3,4*</sup></p> <p><sup>1</sup><i>Research Center for Advanced Measurement and Characterization, National Institute for Materials Science (NIMS), Japan</i> <sup>2</sup><i>Center for Materials Research by Information Integration, NIMS, Japan</i> <sup>3</sup><i>PRESTO, Japan Science and Technology Agency, Japan</i> <sup>4</sup><i>Research &amp; Utilization Division, Japan Synchrotron Radiation Research Institute, Japan</i></p>
F-02-I 15:00-15:30	<p>[Invited] <b>Structural anisotropy of MD-simulated calcium phosphate glasses induced by uniaxial deformation</b> Yasuhiko BENINO<sup>1*</sup>, Ikuya MATSUI<sup>1</sup>, Shinichi SAKIDA<sup>2</sup>, Tokuro NANBA<sup>1</sup></p> <p><sup>1</sup><i>Graduate School of Environmental and Life Science, Okayama University,</i> <sup>2</sup><i>Environmental Management Center, Okayama University, Japan</i></p>
F-04-I 15:30-16:00	<p>[Invited] <b>Impact of ZnO on Glass Structure and Crystallization of BaF<sub>2</sub> Nanocrystals in Fluoroborate Glass</b> Kenji SHINOZAKI<sup>*</sup></p> <p><i>National Institute of Advanced Industrial Science and Technology (AIST), Japan</i></p>

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## Session F : Glasses

Date : November 22<sup>nd</sup>/ Place : Room E (Cheon-Yeon II)

Session Chair : Yong Gyu Choi, Korea Aerospace Univ., Korea  
: Takayuki Komatsu, Nagaoka University of Technology, Japan

<p>F-06-I 16:15-16:45</p>	<p>[Invited] <b>Relationship between luminescence of Ce<sup>3+</sup> in oxide glasses and the structure</b> Hirokazu MASAI* <i>National Institute of Advanced Industrial Science and Technology, Japan</i></p>
<p>F-03 16:45-17:00</p>	<p><b>Cd-S-Se Quantum Dot Embedded Glasses with Dual-Band Emission as a Color Converter with Enhanced Color Gamut</b> Karam HAN<sup>1</sup>, Jong HEO<sup>2</sup>, Woon Jin CHUNG<sup>1*</sup> <sup>1</sup><i>Div. of Advanced Materials Eng., Kongju National Univ., Korea</i> <sup>2</sup><i>Dept. of Materials Sci. and Eng., Pohang Univ. of Sci. and Tech., Korea</i></p>
<p>F-05 ★ 17:00-17:15</p>	<p><b>Carbon-Doped Chalcogenide Glasses for Diamond-Like Carbon Coating</b> Hyun KIM<sup>1</sup>, Jun Ho LEE<sup>1</sup>, Woo Hyung LEE<sup>1</sup>, Sang Yeol SHIN<sup>1</sup>, Ji In LEE<sup>1</sup>, Min Chul KWON<sup>2</sup>, Young Gyu CHOI<sup>1*</sup> <sup>1</sup><i>Department of Materials Science and Engineering, Korea Aerospace University, Korea</i> <sup>2</sup><i>UNIVAC Co. Ltd, Korea</i></p>
<p>F-07 17:15-17:30</p>	<p><b>Structure of liquid Er<sub>2</sub>O<sub>3</sub> revealed by synchrotron X-ray diffraction measurements, thermophysical properties measurements, and reverse Monte Carlo - molecular dynamics simulations</b> Shinji KOHARA<sup>1,2,3*</sup>, Yohei ONODERA<sup>4,1</sup>, Shuta TAHARA<sup>5,1</sup>, Chihiro KOYAMA<sup>6</sup>, Haruka TAMARU<sup>6</sup>, Atsunobu MASUNO<sup>7,1</sup>, Jumpei T. OKADA<sup>8</sup>, Akitoshi MIZUNO<sup>9</sup>, Hirohisa ODA<sup>6</sup>, Yuki WATANABE<sup>10</sup>, Yui NAKATA<sup>10</sup>, Koji OHARA<sup>3</sup>, Takehiko ISHIKAWA<sup>6</sup>, and Osami SAKATA<sup>1</sup> <sup>1</sup><i>National Institute for Materials Science, Japan</i> <sup>2</sup><i>PRESTO, Japan Science and Technology Agency, Japan</i> <sup>3</sup><i>Japan Synchrotron Radiation Research Institute, Japan</i> <sup>4</sup><i>Kyoto University, Sennan-gun, Japan</i> <sup>5</sup><i>University of the Ryukyus, Nakagami-gun, Japan</i> <sup>6</sup><i>Japan Aerospace Exploration Agency, Japan</i> <sup>7</sup><i>Hirosaki University, Japan</i> <sup>8</sup><i>Tohoku University, Japan</i> <sup>9</sup><i>National Institute of Technology, Hakodate College, Japan</i> <sup>10</sup><i>Advanced Engineering Services Co., Ltd., Japan</i></p>
<p>F-08 ★ 17:30-17:45</p>	<p><b>SiO<sub>2</sub>-B<sub>2</sub>O<sub>3</sub>-BaO based glasses as sealing materials for high temperature reversible solid oxide cells</b> Hansol LEE, Woo Sik KIM, Woon Jin CHUNG* <i>Div. of Advanced Materials Eng., Kongju National Univ., Korea</i></p>
<p>F-09 17:45-18:00</p>	<p><b>Structure studies of BaO-TiO<sub>2</sub>-SiO<sub>2</sub> glass-ceramics using <sup>29</sup>Si MAS NMR and Raman spectroscopy</b> Hirokazu MASAI* <i>National Institute of Advanced Industrial Science and Technology, Japan</i></p>

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## Session F : Glasses

Date : November 23<sup>rd</sup>/ Place : Room E (Cheon-Yeon II)

Session Chair : Won Ji Park, POSTECH, Korea

: Shinji Kohara, NIMS, Japan

<p>F-10-I 09:30-10:00</p>	<p>[Invited] <b>Clustering Analysis of Rare-Earth Oxides in Glasses by Atom Probe Tomography</b> W. J. Park<sup>2</sup>, C. M. Kwak<sup>2</sup>, N. Grégoire<sup>1</sup>, H. J. Lee<sup>2</sup>, C. G. Park<sup>2</sup>, Y. Messaddeq<sup>1</sup>, J. Heo<sup>2</sup> <sup>1</sup>Centre d'optique, photonique et laser (COPL), Université Laval, Canada <sup>2</sup>Division of Advanced Nuclear Engineering, Pohang University of Science and Technology(POSTECH), Korea</p>
<p>F-11-I 10:00-10:30</p>	<p>[Invited] <b>Modification of phosphate network for anomalous thermal expansion coefficients in binary zinc phosphate glass</b> Yohei ONODERA<sup>1,2*</sup>, Shinji KOHARA<sup>3,2,4</sup>, Hirokazu MASAI<sup>5</sup>, Akitoshi KOREEDA<sup>6</sup>, Takahiro OHKUBO<sup>7</sup> <sup>1</sup>Institute for Integrated Radiation and Nuclear Science, Kyoto University, Japan <sup>2</sup>Center for Materials Research by Information Integration, National Institute for Materials Science(NIMS), Japan <sup>3</sup>Light/Quantum Beam Field, Research Center for Advanced Measurement and Characterization, NIMS, Japan <sup>4</sup>PRESTO, Japan Science and Technology Agency, Japan. <sup>5</sup>Inorganic Functional Materials Research Institute, National Institute of Advanced Industrial Science and Technology, Japan <sup>6</sup>Department of Physical Sciences, Ritsumeikan University, Japan <sup>7</sup>Graduate School &amp; Faculty of Engineering, Chiba University, Japan</p>
<p>F-12 ★ 10:30-10:45</p>	<p><b>Fabrication of CdSe/Cd<sub>1-x</sub>Zn<sub>x</sub>Se Quantum Dots in Silicate Glasses by Continuous-Wave Laser Irradiation</b> Hojeong Lee<sup>*</sup>, Won Ji Park, Jong Heo Department of Materials Science and Engineering, Pohang University of Science and Technology (POSTECH), Korea</p>
<p>F-13 ★ 11:00-11:15</p>	<p><b>Structure of disordered materials revealed by persistent homology</b> Yohei ONODERA<sup>1,2*</sup>, Shinji KOHARA<sup>3,2,4,5</sup>, Ippei OBAYASHI<sup>6</sup>, Yasuaki HIRAOKA<sup>7,2</sup> <sup>1</sup>Institute for Integrated Radiation and Nuclear Science, Kyoto University, Japan <sup>2</sup>Center for Materials Research by Information Integration, National Institute for Materials Science(NIMS), Japan <sup>3</sup>Light/Quantum Beam Field, Research Center for Advanced Measurement and Characterization, NIMS, Japan <sup>4</sup>PRESTO, Japan Science and Technology Agency, Japan. <sup>5</sup>Research and Utilization Division, Japan Synchrotron Radiation Research Institute/SPring-8, Japan <sup>6</sup>Advanced Institute for Materials Research, Tohoku University, Japan <sup>7</sup>Kyoto University Institute for Advanced Study, Kyoto University, Japan</p>
<p>F-14 ★ 11:15-11:30</p>	<p><b>Improved Hardness of Compositionally Adjusted Ge-Sb-Se Chalcogenide Glass</b> Ji In LEE, Jun Ho LEE, Woo Hyung LEE, Hyun KIM, Sang Yeol SHIN, Yong Gyu CHOI<sup>*</sup> Department of Materials Science and Engineering, Korea Aerospace University, Korea</p>

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## Session G : Nanoceramics

(Nanoparticles, Nanostructured Materials, etc.)

Date : November 23<sup>rd</sup> / Place : Room E (Cheon-Yeon II)

Session Chair : Dae-Young Jung, Inha University, Korea  
: Kenji Shinozaki, AIST, Japan

G-01 ★ 13:00-13:15	<b>Achieving Spatially- Selective Dopant Distribution in Glass Ceramics for Warm Light Emitting Diodes</b> Yuan GAO <sup>1,*</sup> , Shunsuke MURAI <sup>1</sup> , Kenji SHINOZAKI <sup>2</sup> , and Katsuhisa TANAKA <sup>1</sup> <sup>1</sup> <i>Department of Material Chemistry, Graduate School of Engineering, Kyoto University, Japan</i> <sup>2</sup> <i>National Institute of Advanced Industrial Science and Technology (AIST), Japan</i>
G-02 ★ 13:15-13:30	<b>Metal-organic assembled architecture and their catalytic performance</b> Yong-qiang FENG <sup>1,2</sup> , Masoud SAKAKI <sup>1</sup> , Jae-hyun KIM <sup>1</sup> , Jianfeng HUANG <sup>2</sup> , Koji KAJIYOSHI <sup>1,*</sup> <sup>1</sup> <i>Research Laboratory of Hydrothermal Chemistry, Faculty of Science and Technology, Kochi University, Japan</i> <sup>2</sup> <i>School of Materials Science &amp; Engineering, Shaanxi University of Science &amp; Technology, China</i>
G-03 13:30-13:45	<b>Self-assembly of 3-Dimensional Single Crystal Piezoelectric PbTiO<sub>3</sub> Nanostructure Arrays</b> Hyun-Cheol Song <sup>1,*</sup> , William T. Reynolds Jr. <sup>2</sup> and Shashank Priya <sup>3</sup> <sup>1</sup> <i>Center for Electronic Materials, Korea Institute of Science and Technology (KIST), Korea</i> <sup>2</sup> <i>Department of Materials Science and Engineering, Virginia Tech, USA</i> <sup>3</sup> <i>Materials Science and Engineering, The Pennsylvania State University, USA</i>
G-05 ★ 13:45-14:00	<b>Low-temperature sintering and microwave dielectric properties of B<sub>2</sub>O<sub>3</sub>-added Zn<sub>2-x</sub>GeO<sub>4-x</sub> ceramics</b> Xing-Hua MA <sup>1</sup> , Sang-Hyo KWEON <sup>1</sup> , Mir IM <sup>2</sup> and Sahn NAHM <sup>1,2,*</sup> <sup>1</sup> <i>Department of Materials Science and Engineering, Korea University, Korea</i> <sup>2</sup> <i>Department of Nano-Bio-Information-Technology, KU-KIST Graduate School of Converging Science and Technology, Korea</i>
G-04-I 14:00-14:30	<b>[Invited]</b> <b>Synthesis and Characterization of Titanate nanostructure by Microwave Assisted Hydrothermal Method: An effect of process parameters on Nanostructures formation</b> S.H.Cho, T.Goto and T.Sekino <i>The Institute of Scientific and Industrial Research (ISIR-SANKEN), Osaka University, Japan</i>

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## **Session H : Thin Films and Coatings** (PLD, Sputtering, CSD, Aerosol Deposition, etc.)

**Date : November 23<sup>rd</sup> / Place : Room D (Ho-Hae)**

Session Chair : Soon-Gil Yoon, Chungnam National University, Korea  
: Jun Akedo, AIST, Japan

H-01-I 09:30-10:00	<b>[Invited]</b> <b>Comparison of PVD and CVD - Introduction to vacuum based coating processes and examples of unique applications different from traditional applications</b> Young Soo Yoon <i>Department of Materials Science and Engineering, Korea</i>
H-02 10:00-10:15	<b>Room Temperature Impact Consolidation and Its Application to Ceramic Coating - Aerosol Deposition (AD) Method -</b> Jun AKEDO* <i>Advanced Coating technology Research Center, National Institute of Advanced Industrial Science &amp; Technology, Japan</i>
H-03-I 10:15-10:45	<b>[Invited]</b> <b>Processing and Electrical Properties of Lead-Free (K,Na)(Nb,Ta)O<sub>3</sub> Thin Films for Piezoelectric Thin-Film Actuators</b> Wataru SAKAMOTO <sup>1*</sup> , Naoya KONDO <sup>2</sup> , Takashi IJIMA <sup>3</sup> and Toshinobu YOGO <sup>2</sup> <sup>1</sup> <i>Department of Applied Chemistry, Chubu University, Japan</i> <sup>2</sup> <i>IMaSS, Nagoya University, Japan</i> <sup>3</sup> <i>National Institute of Advanced Industrial Science and Technology, Japan</i>

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## **Session H : Thin Films and Coatings**

(PLD, Sputtering, CSD, Aerosol Deposition, etc.)

**Date : November 23<sup>rd</sup> / Place : Room D (Ho-Hae)**

Session Chair : Soon-Gil Yoon, Chungnam National University, Korea  
: Jun Akedo, AIST, Japan

H-05 ★ 11:00-11:15	<b>High transmittance and Antimicrobial activity with Hydrophobic property of Al-doped ZnO thin films using On-axis sputter</b> Sang-Young SEO, Soon-Gil YOON* <i><sup>T</sup>Department of Materials Science and Engineering, Chungnam National University, Korea</i>
H-06 ★ 11:15-11:30	<b>Enhanced piezoelectric energy of poly(vinylidene fluoride trifluoroethylene) (PVDF) film based nanogenerator by combining Layered-double hydroxides nanosheets (LDHs)</b> NGUYEN THI MINH TUOI and SOON-GIL YOON* <i>Department of Materials Science and Engineering, Chungnam National University, Korea.</i>
H-07-I 11:30-12:00	[Invited] <b>Preparation of electrode-solid electrolyte composite film on single-crystal LLZO electrolyte substrate by aerosol deposition method for all solid-state lithium battery application</b> Junji AKIMOTO*, Tadayoshi AKAO, Hiroshi NAGATA, Kunimitsu KATAOKA, Jun AKEDO <i>Advanced Coating Technology Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Japan</i>

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## Session H : Thin Films and Coatings

(PLD, Sputtering, CSD, Aerosol Deposition, etc.)

Date : November 23<sup>rd</sup> / Place : Room D (Ho-Hae)

Session Chair : Hae Jin Hwang, Inha University, Korea  
: Wataru Sakamoto, Chubu University, Japan

H-09 ★ 13:00-13:15	<b>High Quality and Monolayer Graphene Synthesized Directly at 150°C via Thermal CVD without Transfer Process</b> Byeong-Ju Park, and Soon-Gil Yoon* <i>Department of Materials Science and Engineering, Republic of Korea</i>
H-10 ★ 13:15-13:30	<b>Semiconducting properties of nitrogen doped-graphene by in-situ synthesis</b> YIRE-HAN, BYEONG-JU PARK, SOON-GIL YOON* <i>Department Of Materials Science And Engineering, Chungnam National University, Korea</i>
H-11 ★ 13:30-13:45	<b>Optical Properties of Organic-Inorganic Perovskite Thin Films for Photodetector</b> Jang-Su JEONG <sup>1</sup> , Ji-Ho EOM <sup>1</sup> , Soon-Gil YOON <sup>1*</sup> <i><sup>1</sup>Department of Materials Science and Engineering, Chungnam National University, Korea</i>
H-12 ★ 13:45-14:00	<b>Bimodal Properties of Organic/inorganic Perovskite Thin Films by Two-Zone Chemical Vapor Deposition</b> Ji-Ho Eom, Soon-Gil Yoon* <i>Department of Materials Science and Engineering, Korea</i>
H-13 ★ 14:00-14:15	<b>Evaluation of deformability and strength of fine ceramic particles by <i>in situ</i> compression test for aerosol deposition process</b> Shota KUROYANAGI <sup>1,2</sup> , Atsushi YUMOTO <sup>3</sup> , Jun AKEDO <sup>2</sup> , Kentaro SHINODA <sup>2,*</sup> <i><sup>1</sup>Department of Materials Science and Engineering, Graduate School of Engineering and Science, Shibaura Institute of Technology, Japan</i> <i><sup>2</sup>Advanced Coating Technology Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Japan</i> <i><sup>3</sup>Department of Materials Science and Engineering, College of Engineering, Shibaura Institute of Technology, Japan</i>
H-14 14:30-14:45	<b>Nano structure analysis of ferroelectric thin film by cross sectional atomic force microscopy</b> Naonori SAKAMOTO <sup>1*</sup> , Satoshi MIYAZAKI <sup>2</sup> , Kohei KASAMI <sup>2</sup> , Takahiko KAWAGUCHI <sup>2</sup> , Naoki WAKIYA <sup>1,2,3</sup> , and Hisao SUZUKI <sup>1,2,3</sup> <i><sup>1</sup>Research Institute of Electronics, Shizuoka University, Japan</i> <i><sup>2</sup>Electronics and Materials Science Course, Graduate School of Integrated Science and Technology, Shizuoka University, Japan</i> <i><sup>3</sup>Graduate School of Science and Technology, Shizuoka University, Japan</i>
H-04 14:45-15:00	<b>Fabrication of <math>\alpha</math>-Al<sub>2</sub>O<sub>3</sub> Thick Films by Aerosol Deposition Method for Applications of Electrical Insulation</b> Rintaro AOYAGI*, Hiroki TSUDA, and Jun AKEDO <i>National Institute of Advanced Industrial Science and Technology (AIST), Japan</i>
H-08 ★ 15:00-15:15	<b>Study of curvature and stress generated on different types of flexible substrates by Aerosol Deposition (AD) of alumina thin film</b> Gabrielle Saya BORDELET <sup>1</sup> , Corentin CASAMAYOU-SOULE <sup>2,3</sup> , Axel THIBAUD <sup>2,3</sup> , Kentaro SHINODA <sup>2</sup> , Armelle VARDELLE <sup>3</sup> , Jun AKEDO <sup>1</sup> <i><sup>1</sup>National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki 305-8565, Japan</i> <i><sup>2</sup>AIST, Tsukuba, Ibaraki 305-8564, Japan</i> <i><sup>3</sup>University of Limoges, BP 23204, Limoges, 87032 France</i>

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## Session I : Industry Ceramics

Date : November 22<sup>nd</sup>/ Place : Room D (Ho-Hae)

Session Chair : Jo Woong Ha, Inocera Co. Ltd., Korea  
: Naotaka Sakamoto, Fukuoka Industrial Technology Center, Japan

I-01-I 16:15-16:45	<p>[Invited] <b>Solid-state Single Crystal Growth (SSCG) Technique As an Extreme Case of Grain Growth Control</b> Jong-Yeb LEE<sup>1</sup>, Dong-Ho KIM<sup>1</sup>, Ho-Yong LEE<sup>1,2*</sup> <sup>1</sup><i>Ceracomp Co., Ltd., Cheonan, Chungnam 31094, Korea</i> <sup>2</sup><i>Department of Advanced Materials Eng., Sunmoon University, Korea</i></p>
I-02 16:45-17:00	<p><b>Physical Properties of Cementitious materials with Carbonated Fluidizedbed Boiler Ash and Carbonation of Fluidized-bed Boiler ash</b> Woonggeol Lee<sup>a</sup>, Sehoon Jeon<sup>b*</sup>, Myongshin Song<sup>b,*</sup> <sup>a</sup><i>Department of Advanced Materials Engineering, Kangwon National University, Korea</i> <sup>b</sup><i>Research Center of Advanced Convergence Processing on Materials, Kangwon National University, Korea</i></p>
I-03 ★ 17:00-17:15	<p><b>Humidity-independent oxide gas sensor using CeO<sub>2</sub> nanoclusters loaded In<sub>2</sub>O<sub>3</sub> hollow-spheres by Layer-by-Layer (LBL) assembly</b> Ji-Wook Yoon, Kyeorei Lim, Jun-Sik Kim, Tae-Hyung Kim, Young Jun Hong, Yun Chan Kang and Jong-Heun Lee <i>Department of Materials Science and Engineering, Korea University, Korea</i></p>
I-04 ★ 17:15-17:30	<p><b>Design of selective NO<sub>2</sub> gas sensors using CdS nanoflake array assisted by visible light at room temperature</b> Hua-Yao Li, Sei-Woong Park, Ji-Won Yoon, Chul-Soon Lee, Kyeorei Lim, Ji-Wook Yoon, and Jong-Heun Lee <i>Department of Materials Science and Engineering, Korea University, Korea</i></p>

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## Poster Session

Date and Time: Thursday, November 22<sup>nd</sup> / 13:00-14:20

Place: Lakai Ballroom II

P-01 ★	<p><b>Effect of Basicity of Tellurite Based Glass Frits on Electrical Properties for Si Solar Cells</b>  <u>Yurian Kim</u>, Hyungsun Kim*  <i>School of Materials Science and Engineering, Inha University, Korea</i></p>
P-02 ★	<p><b>Crystallization behavior and electrochemical performance of Na<sub>2</sub>O-TiO<sub>2</sub>-SiO<sub>2</sub> glass and glass-ceramic anodes for sodium ion batteries</b>            Kaito Ryo, Tsuyoshi Honma, Takayuki Komatsu  <i>Nagaoka University of Technology, Nagaoka, Japan</i></p>
P-03 ★	<p><b>Transfer-free graphene electrode toward super flexible semi-transparent perovskite solar cells</b>            Van-Dang TRAN, Byong-Ju PARK, Yire HAN, Soon-Gil YOON  <i>Department of Materials Science and Engineering, Chungnam National University, Korea</i></p>
P-04 ★	<p><b>Synthesis and Electrical Properties of BiGaO<sub>3</sub>-modified Bi<sub>1.05</sub>FeO<sub>3</sub>-BaTiO<sub>3</sub> Piezoceramics by Quenching Process</b>            Fazli AKRAM, Salman Ali KHAN, Seung Bong BAEK, Jun Chan KIM, Tauseef AHMED, Soonil LEE, Tae Kwon SONG, and Myong-Ho KIM*  <i>School of Materials Science and Engineering, Changwon National University, Korea</i></p>
P-05 ★	<p><b>The quenching effects for mechanical strength and depolarization temperature of (Bi<sub>0.5</sub>Na<sub>0.5</sub>)TiO<sub>3</sub> ceramics</b>            Tatsuki MIURA, Yuka TAKAGI, Hajime NAGATA*, Tadashi TAKENAKA  <i>Faculty of Science and Technology, Tokyo University of Science, Japan</i></p>
P-06 ★	<p><b>Ferroelectric and Piezoelectric Responses of B-site Donor Modification in BiFeO<sub>3</sub>-BaTiO<sub>3</sub> Lead-free Ceramics</b>            Salman Ali KHAN, Fazli AKRAM, Seung Bong BAEK, Jun Chan KIM, Tauseef AHMED, Soonil LEE, Tae Kwon SONG, Myong-Ho KIM*  <i>School of Materials Science and Engineering, Changwon National University, Korea</i></p>
P-07 ★	<p><b>Fabrication of Porous Titanium oxide-Manganese oxide Ceramics with Enhanced Anti-static and Mechanical Properties</b>            Dongsu Yu<sup>1</sup>, Jong-Young Kim<sup>1*</sup>, Jong-Yeol Jung<sup>2</sup>, Seung-Woo Baik<sup>2</sup>, Wooyoung Shim<sup>3</sup>  <sup>1</sup><i>Icheon Branch, Korea Institute of Ceramic Engineering and Technology, Korea</i>  <sup>2</sup><i>Maxtech Co. Ltd., Daegu, Korea</i>  <sup>3</sup><i>Department of Advanced Materials Science and Engineering, Yonsei University, Korea</i></p>
P-08	<p><b>Synthesis of Mn<sup>4+</sup> doped red phosphor by using atmosphere furnace</b>            Masashi MAEDA<sup>1</sup>, Konatsu KAMIMOTO<sup>1</sup>, Hiromi NAKANO<sup>1,2*</sup>  <sup>1</sup><i>Department of Environmental and Life Science, Toyohashi, Japan</i>  <sup>2</sup><i>Cooperative Research Facility Center, Toyohashi, Japan</i></p>
P-09 ★	<p><b>Novel Inorganic Pigments with Ce<sup>3+</sup> as a Coloring Source</b>            Ryohei OKA<sup>1</sup>, Yusuke SHOBU<sup>2</sup>, Fumiya AOYAMA<sup>1</sup>, Takashi TSUKIMORI<sup>1</sup>, Toshiyuki MASUI<sup>1,3*</sup>  <sup>1</sup><i>Department of Chemistry and Biotechnology, Graduate School of Engineering</i>  <sup>2</sup><i>Department of Engineering, Graduate School of Sustainability Science</i>  <sup>3</sup><i>Center for Research on Green Sustainable Chemistry, Tottori University, Japan</i></p>
P-10 ★	<p><b>Optimum conditions for a fabrication of grain-oriented piezoelectric (Bi<sub>0.5</sub>K<sub>0.5</sub>)TiO<sub>3</sub> ceramics</b>            Gopal Prasad KHANAL<sup>1</sup>, Sangwook KIM<sup>1</sup>, Ichiro FUJII<sup>1</sup>, Shintaro UENO<sup>1</sup>, Tohru SUZUKI<sup>2</sup>, and Satoshi WADA<sup>1*</sup>  <sup>1</sup><i>Department of Applied Chemistry, University of Yamanashi, Japan</i>  <sup>2</sup><i>National Institute for Materials Science (NIMS), Sengen Tsukuba, Japan</i></p>

P-11 ★	<b>The optimization of electrical properties in Bi-based ceramics based on post-annealing temperature and time</b> Hyunwook NAM, Tomoya AIZAWA, Sangwook KIM, Ichiro FUJII, Shintaro UENO, Satoshi WADA* <i>University of Yamanashi, Japan</i>
P-12 ★	<b>Effect of Ba/Ti ratios and Grain-size in Barium Titanate Ceramics</b> Piyush SAPKOTA, Ichiro FUJII, Shintaro UENO, Satoshi WADA* <i>University of Yamanashi, Japan</i>
P-13	<b>Hydrothermal synthesis of KNbO<sub>3</sub>, Ca<sub>2</sub>Nb<sub>2</sub>O<sub>7</sub> and KNbO<sub>3</sub>-Ca<sub>2</sub>Nb<sub>2</sub>O<sub>7</sub> mixture</b> Masoud SAKAKI, Ryo OKUBI, Yongqiang FENG, Jae-Hyun KIM, Koji KAJIYOSHI* <i>Research Laboratory of Hydrothermal Chemistry, Faculty of Science and Technology, Kochi University, Japan</i>
P-14 ★	<b>Nitrification Effect on High Temperature Electrical Conductivity of TiO<sub>2</sub>-doped Aluminum Nitride Ceramics</b> Eunsil LEE <sup>1, 2</sup> , Wooyoung SHIM <sup>2</sup> , Jong-Young KIM <sup>1*</sup> <sup>1</sup> <i>Icheon Branch, Korea Institute of Ceramic Engineering &amp; Technology, Korea</i> <sup>2</sup> <i>Department of Materials Science and Engineering, Yonsei University, Korea</i>
P-15	<b>Preparation of (K<sub>0.5</sub>Na<sub>0.5</sub>)NbO<sub>3</sub> Nanopowder by a Facile Aqueous Route.</b> John FISHER* and Kwi-Hak LEE <i>School of Materials Science and Engineering, Chonnam National University, Korea</i>
P-16 ★	<b>Synthesis of Insulating / Conductive Oxide Composite Particles with Epitaxial Interface for High-performance Capacitors</b> Yuya HATTORI, Shintaro UENO*, Ichiro FUJII, Satoshi WADA <i>University of Yamanashi, Japan</i>
P-17 ★	<b>Preparation of Perovskite-type Dielectric Ceramics Containing Rbby High-pressure Reactive Sintering</b> YusukeYASUE <sup>1</sup> , ShintaroUENO <sup>1</sup> , IchiroFUJII <sup>1</sup> , Yoshinori MURABA <sup>2</sup> , Hideo HOSONO <sup>2,3</sup> , SatoshiWADA <sup>1</sup> <sup>1</sup> <i>Universityof Yamanashi, Japan</i> <sup>2</sup> <i>Materials Research Center for Element Strategy Tokyo Institute of Technology, Japan</i> <sup>3</sup> <i>Laboratory for Materials &amp; Structures, Tokyo Institute of Technology, Japan</i>
P-18 ★	<b>Investigation of Sintering Conditions and Electric Properties of BiFeO<sub>3</sub>-based Piezoelectric Ceramics</b> Tomoya AIZAWA <sup>1</sup> , Ichiro FUJII <sup>1</sup> , Shintaro UENO <sup>1</sup> , Tohru S. SUZUKI <sup>2</sup> , Satoshi WADA <sup>1*</sup> <sup>1</sup> <i>University of Yamanashi, Japan</i> <sup>2</sup> <i>National Institute for Materials Science, Japan</i>
P-19 ★	<b>Synthesis of Potassium Niobate Cubic Nanoparticles by Two-step Solvothermal Process</b> Ryoichi KUNISADA, Tsukasa CHIKATA, Shintaro UENO, Ichiro FUJII, Satoshi WADA* <i>University of Yamanashi Japan</i>
P-20 ★	<b>Influence of Tetragonal-BaTiO<sub>3</sub> Contents in Green Compacts on Dielectric Properties of Solvothermally Prepared BaTiO<sub>3</sub> Ceramics</b> Ryoko MURAKAMI, Shintaro UENO, Ichiro FUJII, Satoshi WADA* <i>University of Yamanashi, Kofu, Yamanashi 400-8510, Japan</i>
P-21 ★	<b>Electrical properties of CSD derived (1-x)(K<sub>0.5</sub>Na<sub>0.5</sub>)NbO<sub>3-x</sub>(Bi<sub>0.5</sub>Na<sub>0.5</sub>)ZrO<sub>3</sub> thin film</b> Akinori SAKAMOTO <sup>1</sup> , Sadaaki TANAKA <sup>1</sup> , Shigeto HIRAI <sup>1</sup> , Takeshi MATSUDA <sup>1</sup> Naonori SAKAMOTO <sup>2</sup> , Hisao SUZUKI <sup>2</sup> Takahisa SHIRAISHI <sup>3</sup> , Takanori KIGUCHI <sup>3</sup> , Toyohiko KONNO <sup>3</sup> and Tomoya OHNO <sup>1</sup> <sup>1</sup> <i>Department of Materials Science, Kitami Institute of Technology, Japan.</i> <sup>2</sup> <i>Research Institute of Electronics, Shizuoka University, Japan.</i> <sup>3</sup> <i>Institute for Materials Research, Tohoku University, Japan.</i>
P-22	<b>Development of Ferrite sheet for Wireless Power Charge (WPC) on Rx</b> Ha-Neul LEE <sup>1</sup> , Jun Ho SONG <sup>2</sup> , Joong Bae KIM <sup>3</sup> , Sang-Yeup PARK <sup>1,2*</sup> <sup>1</sup> <i>Department of Ceramics Engineering, Gangneung-Wonju National University, Korea</i> <sup>2</sup> <i>Technology Innovation Center for Fine Ceramics, Gangneung-Wonju National University, Korea</i> <sup>3</sup> <i>Daol Ceramic Co., Ltd., Korea</i>
P-23	<b>High Temperature Crystal structure and CTE of Cordierite Honeycomb Ceramics</b> J.S. Kim <sup>1*</sup> , K.-W. Chae <sup>1</sup> , M.A. Son <sup>1</sup> , S.H. Kim <sup>2</sup> <sup>1</sup> <i>Department of Materials Science and Engineering, Hoseo University, Korea</i> <sup>2</sup> <i>Ceracomb Co. Ltd., Korea</i>

P-24 ★	<b>Fabrication of Meso-Macro Porous <math>\beta</math>-SiC Sintered Body</b> YOUM mirae <sup>1,2</sup> , YUN sungil <sup>2</sup> , PARK sangwhan <sup>2*</sup> , CHOI sungchurl <sup>1</sup> <sup>1</sup> Advanced materials engineering , Hanyang university, Seoul <sup>2</sup> Center for Materials Architecturing, Korea Institute of Science and Technology, Korea
P-25	<b>Microstructure and Phase Forming Behavior of Ytterbium Silicate Coating by Suspension Plasma Spray</b> Yoonsuk OH <sup>1*</sup> , Ho lim RYU <sup>1</sup> , Kyun CHOI <sup>1</sup> <sup>1</sup> Engineering Ceramic Center, Korea Institute of Ceramic Engineering and Technology, Korea
P-26 ★	<b>Thermodynamic prediction of Ta-C coating by chemical vapor deposition</b> Hyun-Mi Kim <sup>1,2</sup> , Kwang Bo Shim <sup>2</sup> , Nam-Choon Cho <sup>3</sup> , Jong-Kyoo Park <sup>3</sup> , and Kyoon Choi <sup>1*</sup> <sup>1</sup> Engineering Ceramic Center, KICET, Korea <sup>2</sup> Division of advanced Materials Science and Engineering, Hanyang Univ., Korea <sup>3</sup> The 4 <sup>th</sup> R&D Institute, Agency for Defense Development, Korea
P-27 ★	<b>Microstructural Control of Pyrolytic Carbon Layer Deposited from Methane by I-CVI</b> Young-Seok Jeong <sup>1,2</sup> , Kyoon Choi <sup>1*</sup> , and Ho Gyu Yoon <sup>2</sup> <sup>1</sup> Icheon Branch, Korea Institute of Ceramic Engineering and Technology, Korea <sup>2</sup> Department of Material Science & Engineering, Korea University, Korea
P-28	<b>The effect of additives on the mechanical properties of low thermal expansion LAS(Li<sub>2</sub>O-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>) ceramics for laser wafer dicing device</b> Sung-Hun KIM <sup>1,2</sup> , Jong-Young KIM <sup>1*</sup> , Wooyoung SHIM <sup>2</sup> <sup>1</sup> Korea Institute of Ceramic Engineering and Technology(KICET), Korea <sup>2</sup> YONSEY UNIVERSITY Department of Materials Science & Engineering, Korea
P-29 ★	<b>Intracellular mechanisms of osteogenesis mediated by tricalcium phosphate</b> Eunjeong Choi, Hojun Jeon, Jongbong Park, Seokhwan Yun <sup>*</sup> Department of Mechanical Engineering, Korea Polytechnic University, Korea
P-30 ★	<b>Fabrication and characterization of 3D-printed biocomposite scaffolds based on PCL and silanated silica particles for bone tissue regeneration</b> Eunjeong Choi, Jongbong Park, Seokhwan Yun, Namwook Kim, Dongyun Kim, Bareun Seo, Won-Soo Yun, Songwan Jin, Jin-Hyung Shim, HoJun Jeon <sup>*</sup> Department of Mechanical Engineering, Korea Polytechnic University, Korea
P-31 ★	<b>Highly Reactive <math>\alpha</math>-TCP Synthesis for Calcium Phosphate Cement</b> Jaeseop Bae, Sukyoung Kim School of Materials Science and Engineering, Yeungnam University, Korea
P-32 ★	<b>Comparative study on the characteristics of OCP synthesized with various calcium salts</b> Jian HEO, Sukyoung KIM School of Materials Science and Engineering, Yeungnam University, Korea
P-33	<b>Effects of silver addition on osteoblast activity of sol-gel derived CaO-SiO<sub>2</sub> system</b> Sung baek Cho <sup>*</sup> , Wantae Kim Korea Institute of Geoscience and Mineral Resources (KIGAM), Korea
P-34	<b>Fabrication of Granular Foam Glass with Photocatalyst Coating for VOC Removal of Food Waste</b> Sang-Yeup PARK <sup>1,2*</sup> , Ha-Neul LEE <sup>1</sup> , Bo-Ram JANG <sup>2</sup> <sup>1</sup> Department of Ceramics Engineering, Gangneung-Wonju National University, Korea <sup>2</sup> Technology Innovation Center for Fine Ceramics, Gangneung-Wonju National University, Korea
P-35	<b>Rapid sintering of LNT (Li<sub>2</sub>O-Nb<sub>2</sub>O<sub>5</sub>-TiO<sub>2</sub>) with superstructure by air pressure control</b> Konatsu KAMIMOTO <sup>1</sup> , Hiromi NAKANO <sup>1, 2*</sup> <sup>1</sup> Department of Environmental and Life Science, Japan <sup>2</sup> Cooperative Research Facility Center, Japan
P-36 ★	<b>Effect of WO<sub>3</sub> addition on thermal and mechanical properties of tellurite glasses</b> KADATHALA Linganna, Ju Hyeon CHOI <sup>*</sup> Optical Lens Research Center, Korea Photonics Technology Institute, Korea
P-37 ★	<b>Microstructure and mechanical property of ferroelastic <math>\beta'</math>-Gd<sub>2</sub>(MoO<sub>4</sub>)<sub>3</sub> bulk glass ceramics prepared by melt slow cooling</b> H. Tsuchiya <sup>1</sup> , T. Honma <sup>1*</sup> , T. Komatsu <sup>1</sup> , R. Muller <sup>2</sup> <sup>1</sup> Department of Materials Science and Technology, Japan <sup>2</sup> BAM Federal Institute for Materials Research and Testing, Germany
P-38 ★	<b>Influence of Ge Replacement with Ga in Quaternary Ge-Ga-Sb-Se Chalcogenide Glass</b> Woo Hyung LEE, Jun Ho LEE, Hyun KIM, Yong Gyu CHOI <sup>*</sup> Department of Materials Science and Engineering, Korea Aerospace University, Korea

P-39 ★	<p><b>Compositional Screening of Ternary Ge-Sb-Se Chalcogenide Glasses for Use in Infrared-Transmitting Lens Applications</b></p> <p>Jun Ho LEE, Woo Hyung LEE, Hyun KIM, Ji In LEE, Yong Gyu CHOI*</p> <p><i>Department of Materials Science and Engineering, Korea Aerospace University, Korea</i></p>
P-40 ★	<p><b>EXAFS Spectroscopic Analysis of Amorphous Ge<sub>50</sub>Se<sub>x</sub>Te<sub>50-x</sub> Thin Films</b></p> <p>Sang Yeol SHIN<sup>1</sup>, Chatree SAIYASOMBAT<sup>2</sup>, Suyoun LEE<sup>3</sup>, Byung-ki CHEONG<sup>3</sup>, Himanshu JAIN<sup>4</sup>, Yong Gyu CHOI<sup>1*</sup></p> <p><sup>1</sup><i>Department of Materials Science and Engineering, Korea Aerospace University, Korea</i>  <sup>2</sup><i>Synchrotron Light Research Institute, Thailand</i>  <sup>3</sup><i>Electronic Materials Research Center, Korea Institute of Science and Technology, Korea</i>  <sup>4</sup><i>Department of Materials Science and Engineering, Lehigh University, USA</i></p>
P-41 ★	<p><b>Thick-film phosphor-in-glass with Nd<sup>3+</sup>-ion doped phosphate glass for white LED with wide color gamut</b></p> <p>Yoon Hee NAM, Seong Hyeon KIM, Woon Jin CHUNG*</p> <p><i>Div. of Advanced Materials Eng., Kongju National Univ., Korea</i></p>
P-42 ★	<p><b>Effect of Compositional Variation of Silicate Glasses on Their Refractive Index, Hardness and Color Formation for High Refractive Index Glass Beads Application</b></p> <p>Myeong Sik LEE, In Gun KIM, Han Sol LEE, Woon Jin CHUNG*</p> <p><i>Div. of Advanced Materials Eng., Kongju National Univ., Korea</i></p>
P-43 ★	<p><b>Fabrication and Characterization of Pd@M(M=Zr, Sn)-CeO<sub>2</sub> Nanopowders by Hydrothermal Process for Reduction Catalytic Activity</b></p> <p>Yeon bin Choi, Jeong hun Son, Dong Sik Bae*</p> <p><i>Department of Advanced Materials Science and Engineering, Changwon National University, Korea</i></p>
P-44 ★	<p><b>Preparation of Co-Ni/LaAlO<sub>3</sub>Catalyst for Ethanol Steam Reforming Process by Chemical Solution Deposition with Partial Reduction</b></p> <p>Hideki WACHI<sup>1</sup>, Shigeto HIRAI<sup>1</sup>, Takeshi MATSUDA<sup>1</sup>, Naonori SAKAMOTO<sup>2</sup>, Hisao SUZUKI<sup>2</sup> and Tomoya OHNO<sup>1</sup></p> <p><sup>1</sup><i>Department of Materials Science, Kitami Institute of Technology, Japan</i>  <sup>2</sup><i>Research Institute of Electronics, Shizuoka University, Japan</i></p>
P-45	<p><b>Exfoliation of Zintl Phases without van der Waals gap into Nanosheets</b></p> <p>Jong-Young Kim*</p> <p><i>Icheon branch, Korea Institute of Ceramic Engineering and Technology, Korea</i></p>
P-46 ★	<p><b>A Study on Synthesis and Characterization of Titania Nanotubes using Peroxo Titanium Complex as Precursor</b></p> <p>Hyunsu PARK, Tomoyo GOTO, Sunghun CHO, Tohru SEKINO*</p> <p><i>Department of Advanced Hard Materials, The Institute of Scientific and Industrial Research (ISIR), Japan</i></p>
P-47	<p><b>Synthesis of Porous Silica Particles for Water-repelling Surfaces</b></p> <p>Young-Sang CHO<sup>1*</sup>, Byung-Su LEE<sup>2</sup>, Sang-Hyo LEE<sup>3</sup>,</p> <p><sup>1</sup><i>Department of Chemical Engineering and Biotechnology, Korea Polytechnic University, Korea</i>  <sup>2</sup><i>Synthetic Resin Team 1, R&amp;D center, KangnamJevisco co., ltd., Korea</i>  <sup>3</sup><i>R&amp;D Department 5, R&amp;D Center, KangnamJevisco co., ltd., Korea</i></p>
P-48 ★	<p><b>Impact of Molecular Design for Low-Temperature Crystallization of α-Al<sub>2</sub>O<sub>3</sub> particles from Metal Alkoxide</b></p> <p>Asuka NAKAMURA<sup>1</sup>, Shogo SUZUKI<sup>1</sup>, Saki SUZUKI<sup>1</sup>, Takahiko KAWAGUCHI<sup>1</sup>, Naonori SAKAMOTO<sup>2</sup>, Naoki WAKIYA<sup>2</sup>, Hisao SUZUKI<sup>2</sup></p> <p><sup>1</sup><i>Graduate School of Engineering, Department of Electronics and Materials Science, Shizuoka University, Japan</i>  <sup>2</sup><i>Research Institute of Electronics, Shizuoka University, Japan</i></p>
P-49 ★	<p><b>Thermoelectric properties of epitaxially grown calcium cobaltate thin film</b></p> <p>Haruno MURAKAMI<sup>1</sup>, Takahiko KAWAGUCHI<sup>1</sup>, Naonori SAKAMOTO<sup>1,2</sup>, Nobuyoshi KOSHIDA<sup>3</sup>, Kazuo SHINOZAKI<sup>4</sup>, Hisao SUZUKI<sup>1,2</sup>, Naoki WAKIYA<sup>1,2*</sup></p> <p><sup>1</sup><i>Department of Electronics and Materials Science, Shizuoka Univ., Japan</i>  <sup>2</sup><i>Research Institute of Electronics, Shizuoka Univ., Japan</i>  <sup>3</sup><i>Graduate School of Engineering, Tokyo Univ. of Agriculture and Technol., Japan</i>  <sup>4</sup><i>School of Mater. And Chemical Technol., Tokyo Institute of Technology, Japan</i></p>

P-50 ★	<p><b>Low-temperature Deposition and Characterization of Pb(Zn<sub>1/3</sub>Nb<sub>2/3</sub>)O<sub>3</sub> Relaxor Type Ferroelectric Thin Film by CSD</b>  Yuki SATO<sup>1</sup>, Takahiko KAWAGUCHI<sup>1</sup>, Naonori SAKAMOTO<sup>2</sup>,  Naoki WAKIYA<sup>2</sup>, Hisao SUZUKI<sup>2*</sup>  <sup>1</sup>Graduate School of Integrated Science and Technology, Shizuoka University, Japan  <sup>2</sup>Research Institute of Electronics, Shizuoka University, Japan</p>
P-51	<p><b>Characterization of AlN thin films deposited by pulsed laser deposition</b>  Jun-Ki Chung<sup>*</sup>, Tae-Kwon Ha  Center for Industrial Technologies of Non-Ferrous Metals, Gangneung-Wonju National University, Korea.</p>
P-52 ★	<p><b>Proper P-E Behavior of P(VDF-HFP)/P(VDF-TrFE-CFE) Composites for Energy Storage Capacitor</b>  Jin-Woo Kim<sup>1</sup>, Ji-Ho Lim<sup>1</sup>, Han-Bo Jung<sup>1</sup>, DooHyun Choi<sup>2</sup> and Dae-Yong Jeong<sup>1*</sup>  <sup>1</sup>Department of Materials Science &amp; Engineering, Korea  <sup>2</sup>Agency for Defense Development, Korea</p>
P-53 ★	<p><b>Preparation of Barium Titanate Nano-coated Silica Nano-particles by Chemical Solution Deposition</b>  Takahiro MARUYAMA<sup>1</sup>, Shigeto HIRAI<sup>1</sup>, Takeshi MATSUDA<sup>1</sup>, Naonori SAKAMOTO<sup>2</sup>, Hisao SUZUKI<sup>2</sup>, Tomoya OHNO<sup>1*</sup>  <sup>1</sup>Department of Material Science, Kitami Institute of Technology, Japan  <sup>2</sup>Research Institute of Electronics, Shizuoka University, Japan</p>
P-54 ★	<p><b>Enhanced leakage current and polarization properties for c-axis preferred bismuth titanate ceramic films prepared by aerosol deposition method</b>  Rintaro AOYAGI, Muneyasu SUZUKI<sup>*</sup>, Tetsuo TUCHIYA, Jun AKEDO  National Institute of Advanced Industrial Science and Technology (AIST), Japan</p>
P-55	<p><b>The study on making SiC Radiant Tube including In-situ Joining.</b>  Youngseok KIM, Hyunik SHIN, Bokkyu YOON<sup>*</sup>  Inocera inc. Technical Lab., Korea</p>
P-56	<p><b>Effect of CaF<sub>2</sub> Addition on the Arc Discharge fabrication of High Purity Silicon Carbide using Metal Silicon</b>  Ha-Neul LEE<sup>1</sup>, Yeon Bin JEONG<sup>2</sup>, and Sang-Yeup PARK<sup>1,2*</sup>  <sup>1</sup>Department of Ceramics Engineering, Gangneung-Wonju National University, Korea  <sup>2</sup>Technology Innovation Center for Fine Ceramics, Gangneung-Wonju National University, Korea</p>
P-57 ★	<p><b>Fabrication of structures mimicking structural, mechanical and functional properties of cortical/cancellous bone</b>  Aram SUNG<sup>1</sup>, Jueun KIM<sup>1,2</sup>, Honghyun PARK<sup>1</sup>, Hui-suk YUN<sup>1,2*</sup>  <sup>1</sup>Korea Institute of Materials Science, Korea  <sup>2</sup>Korea University of Science and Technology, Korea</p>
P-58 ★	<p><b>Development of Decorative and Functional Coating Using Aerosol Deposition</b>  Kyung-Min LEE, Dae-Gun KIM, Hye-Won SEOK, Jae-Hyuk Park<sup>*</sup>  IONES Co., Ltd., KOREA</p>
P-59 ★	<p><b>Up-conversion studies on Er<sup>3+</sup>/Yb<sup>3+</sup> co-doped fluorophosphate glasses</b>  KADATHALA Linganna and Ju Hyeon CHOI<sup>*</sup>  Optical Lens Research Center, Korea Photonics Technology Institute, Korea</p>