

# General Information

## Symposium Location

The ISEPD2012 will be held at the Lijiang Waterfall Hotel, Guilin, China

## Publication

Selected papers submitted will be published on the Journal of Inorganic Materials (China), Journal of Ceramic Processing Research (Korea), Materials Science Forum(Trans Tech Publications, Switzerland).

## Presentation and discussion time:

Plenary Lectures: 40 minutes (including 5 minutes for discussion) at Galaxy Conference Hall, 3<sup>rd</sup> Floor.

Invited and Oral Lectures: 20 minutes (including 5 minutes for discussion) at Room A ~ C (2F, 12F)

## On-site Registration

7<sup>th</sup> January: 12:00-18:00

8<sup>th</sup> January: 9:00-18:00

## Registration Fee

	Before Nov. 25, 2011	After Nov. 25, 2011
Registration for Regular	500 USD	600 USD
Registration for Students	300 USD	400 USD
Accompany Person	200 USD	

## Poster Session

Size: The Poster size should be less than 120 cm×90 cm (Length × Width)

Time and Room: 14:00-17:00, 8<sup>th</sup> January, 2012. Galaxy Conference Hall, 3<sup>rd</sup> Floor.

## Poster Award

The distinguished posters will be awarded after being reviewed by the academic committees. All winners will be invited at the banquet on 9<sup>th</sup> January, 2012.

## Room Plan

Opening Ceremony: Galaxy Conference Hall, 3<sup>rd</sup> Floor.

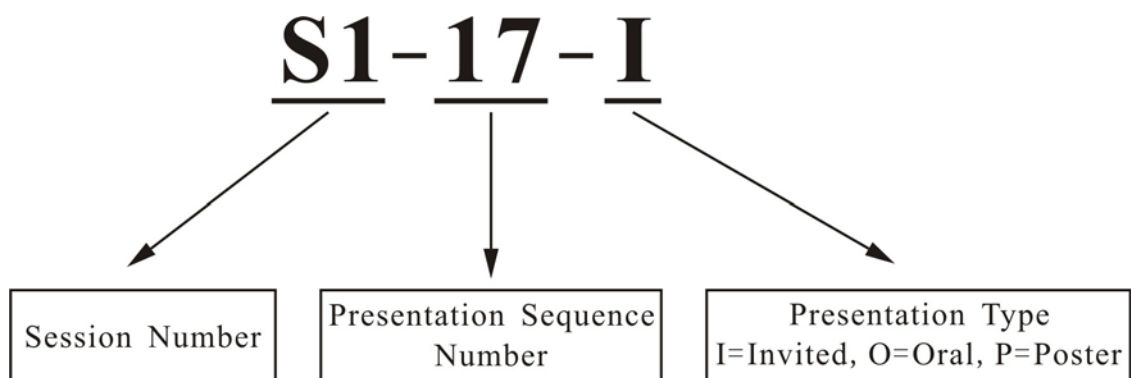
Plenary Lecture: Galaxy Conference Hall, 3<sup>rd</sup> Floor.

Poster: Galaxy Conference Hall, 3<sup>rd</sup> Floor.

Room A: Duxiu Room, 12<sup>th</sup> Floor.  
Room B: Diecai Room, 12<sup>th</sup> Floor.  
Room C: PuHui Room, 2<sup>nd</sup> Floor.  
Lunch: Western Restaurant, 3<sup>rd</sup> Floor  
Welcome Reception: Western Restaurant, 3<sup>rd</sup> Floor.  
Banquet: Galaxy Conference Hall, 3<sup>rd</sup> Floor.

## Guide for the Presentation ID Number

Every presentation in the conference, both in oral and poster style, is assigned a presentation ID number. Here is what the presentation number stands for.



## Program at a Glance

<b>Program at a Glance</b>			
<b>Jan. 7</b>			
12:00-18:00	Registration		
18:00-20:00	Welcome Reception (Western Restaurant, 3 <sup>rd</sup> Floor)		
<b>Jan. 8</b>			
8:30-8:50	Opening Ceremony (Galaxy Conference Hall, 3 <sup>rd</sup> Floor)		
	Chair: Prof. Soo Wahn Lee		
8:50-9:30	Plenary Lecture 1: Solar Materials and thin-film Photovoltaic Cells Prof. Fuqiang Huang		
9:30-10:10	Plenary Lecture 2: Old and New of Sintered RBSN (Reaction Bonded Silicon Nitride) Prof. Hai-Doo Kim		
10:10-10:30	Coffee Break		
	Chair: Prof. Lian Gao		
10:30-11:10	Plenary Lecture 3: Single-Molecule Imaging of TiO <sub>2</sub> Photocatalytic Reactions Prof. Tetsuro Majima		
11:10-11:50	Plenary Lecture 4: Graphene and Carbon Materials: Controlled Chemical Synthesis, Assemblies, Electronics and Energy Storage Prof. Xinliang Feng		
12:00-14:00	Lunch (Western Restaurant, 3 <sup>rd</sup> Floor)		
	<b>Room A (12<sup>th</sup> Floor)</b>	<b>Room B (12<sup>th</sup> Floor)</b>	<b>Room C (2<sup>nd</sup> Floor)</b>
Chairs	Junichi Hojo (Japan) Jinlong Zhang (China)	Tohru Sekino (Japan) Sang Woo Kim (Korea)	Jun-ichi Matsushi (Japan) Guanjun Qiao (China)
14:00-14:20	S1-01-I Junichi Hojo (Japan)	S3-01-I Yasuo Uchiyama (Japan)	S4-01-I Guiwu Liu (China)
14:20-14:40	S1-02-O Feng Wang (China)	S3-02-I Guobin Zheng (Japan)	S4-02-O Yanyan Luan (China)
14:40-15:00	S1-03-O Qing Liu (China)	S3-03-O Liyang Zhang (China)	S4-03-I Hirotosugu Takizawa (Japan)
15:00-15:20	S1-04-I Wenbin Cao (China)	S3-04-I Tohru Sekino (Japan)	S4-04-O Ji Yeon Ryu (Korea)
15:20-15:40	Coffee Break		
Chairs	Yi Zeng (China) Soon-Gil Yoon (Korea)	Yasuo Uchiyama (Japan) Hao Du (China)	Hyungsun Kim (Korea) Li Fu (China)
15:40-16:00	S1-05-O Junna Xu (China)	S3-05-I Shusuke Okada (Japan)	S4-05-O Dejun Zeng (China)
16:00-16:20	S1-06-O Weina Shao (China)	S3-06-I Takashi Kamegawa (Japan)	S4-06-I Hyungsun Kim (Korea)
16:20-16:40	S1-07-I Pengwan Chen (China)	S3-07-I Sang Woo Kim (Korea)	S4-07-I Jianfeng Yang (China)
16:40-17:00	S1-08-O Matiullah Khan (China)	S3-08-O Jiacheng Wei (China)	S4-08-O Qian Feng (China)
17:00-17:20		S3-09-O Bo Wang (Japan)	S4-09-I Junichi Matsushita (Japan)
Posters	8 <sup>th</sup> , January, 14:00-17:00 (Galaxy Conference Hall, 3 <sup>rd</sup> Floor)		

Jan. 9	Room A	Room B	Room C
Chairs	Pengwan Chen (China) Woo Teck Kwon (Korea)	Shusuke Okada (Japan) Guobin Zheng (Japan)	Hirotsugu Takizawa (Japan) Wenbin Cao (China)
8:30-8:50	S1-09-I Jinlong Zhang (China)	S3-10-O Sneha Samal (Korea)	S4-10-O Yongfeng Li (China)
8:50-9:10	S1-10-O Rajesh Adhikari (Korea)	S3-11-O Chunxi Hai (Japan)	S4-11-I Wenbin Cao (China)
9:10-9:30	S1-11-I Shu Yin (Japan)	S3-12-O Binh Ha Bui (Korea)	S4-12-I Guanjun Qiao (China)
9:30-9:50	S1-12-O Shufeng Lin (China)	S3-13-I Hao Du (China)	S4-14-I Dong-Yong Kim (Korea)
9:50-10:10	S1-13-I Soon-Gil Yoon (Korea)	S3-61-I Hisayuki Suematsu (Japan)	
10:10-10:30	Coffee Break		
Chairs	Shu Yin (Japan) Tohru Sekino (Japan)	Won Yong Kim (Korea) Soo Wahn Lee (Korea)	Jianfeng Yang (China) Dong-Yong Kim (Korea)
10:30-10:50	S1-14-O Takeshi Okutani (Japan)	S2-01-I Bo-Young Hur (Korea)	S4-15-O Jianfeng Zhu (China)
10:50-11:10	S1-15-I Woo Teck Kwon (Korea)	S2-02-O Li Jin (Japan)	S4-16-I Ruijuan Pan (China)
11:10-11:30	S1-16-O Quanbin Shi (China)	S2-03-O Gobinda Gyawali (Korea)	S4-17-O Kyuntaek Cho (Korea)
11:30-11:50	S1-17-O Jiwei Li (China)	S2-04-O Yan Chen (China)	S4-18-I Yu Bai (China)
11:50-12:10		S2-05-O Jesik Shin (Korea)	
12:10-14:00	Lunch (Western Restaurant, 3 <sup>rd</sup> Floor)		
Chairs	Xinluo Zhao (China) Geung Young Yeom (Korea)	Bo-Young Hur (korea) Wanyin Zhai (China)	
14:00-14:20	S6-01-I Ho Jung Chang (Korea)	S2-06-O Kyeongmi Kim (Korea)	
14:20-14:40	S6-02-O Yi Qin (China)	S2-07-O Yanfang Shen (China)	
14:40-15:00	S6-03-O Wenxiu Liu (China)	S2-08-O Huiying Zhu (China)	
15:00-15:20	S6-04-I Youngdon Lim (Korea)	S2-09-O Xiaoqian Guo (China)	
15:20-15:40	Coffee Break		
Chairs	Zhenyan Deng (China) Ho Jung Chang (Korea)	Xuebin Zheng (China) Youngdon Lim (Korea)	
15:40-16:00	S6-05-O Yuta Ibusuki (Japan)	S2-10-O Jiantao Luo (China)	
16:00-16:20	S6-06-I Zhenyan Deng (China)	S2-11-O Younsuk Jong (Korea)	
16:20-16:40	S6-07-O Sandip Vinayak Purane (Japan)	S2-12-O Hansol Kim (Korea)	
16:40-17:00	S5-01-I Wanyin Zhai (China)	S2-13-O Kukhyun Song (Korea)	
18:00-20:00	Banquet (Galaxy Conference Hall, 3 <sup>rd</sup> Floor)		

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## Program

### S1: Environment related materials and photocatalysts

#### S1-01-I

##### **Photocatalytic Titania Nanoparticles through Self-Hydrolysis Processes**

Junichi Hojo, Miki Inada

*Department of Applied Chemistry, Faculty of Engineering, Kyushu University, Japan*

#### S1-02-O

##### **The Effects of $\text{NH}_4^+$ , Cl on the Preparation of Nanocrystalline $\text{TiO}_2$ by Hydrothermal Method**

Feng Wang, Wenbin Cao, Junna Xu, Shufeng Lin

*Department of Inorganic Nonmetallic Materials, School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing 100083, China*

#### S1-03-O

##### **Research on Hydrothermal Synthesis of Nanocrystalline $\text{TiO}_2$ Powders under Moderate Conditions**

Qing Liu, Wenbin Cao, Junna Xu, Weina Shao

*University of Science and Technology Beijing, China*

#### S1-04-I

##### **Large-scale Synthesis of N-doped $\text{TiO}_2$ Powders and Its Photocatalytic Performance**

Wenbin Cao

*Department of Inorganic Nonmetallic Materials, School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing 100083, P.R. China*

#### S1-05-O

##### **Photocatalytic Degradation of Phenol by Nanocrystalline N-doped $\text{TiO}_2$ Powders under Visible Light Irradiation**

Junna Xu, Wenbin Cao, Feng Wang, Wenxiu Liu, Shufeng Lin

*University of Science and Technology Beijing, Beijing*

#### S1-06-O

##### **Low-temperature Synthesis of Visible-light-active N-doped $\text{TiO}_2$ Photocatalytic Sol**

Weina Shao, Wenbin Cao, Wenxiu Liu, Feng Wang

*Department of Inorganic Nonmetallic Materials, School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing 100083, P. R. China*

#### S1-07-I

##### **Enhanced Visible-light Photocatalytic Activity of Titania by Shock Wave Processing**

Pengwan Chen, Xiang Gao, Naifu Cui and Jianjun Liu

*Beijing Institute of Technology, China*

#### S1-08-O

##### **Effect of Ag Doping Concentration on the Electronic and Optical Properties of Anatase $\text{TiO}_2$ : A DFT Based Theoretical Approach**

Matiullah Khan<sup>1</sup>, Junna Xu<sup>1</sup>, Ning Chen<sup>1</sup>, Wenbin Cao<sup>1</sup>, Asadullah<sup>2</sup>, Zahid Usman<sup>3</sup>, D. F. Khan<sup>2</sup>

<sup>1</sup>*Department of Inorganic Nonmetallic Materials, School of Materials Science, University of Science and Technology Beijing, Beijing 100083, China* <sup>2</sup>*School of Materials Science, University of Science and Technology Beijing, Beijing 100083, China* <sup>3</sup>*School of Material Science and Engineering, Beijing Institute of Technology, Beijing 100081, China*

### **S1-09-I**

#### **Novel Vacuum Activation Method to Prepare Ti<sup>3+</sup> and F Co-doped MCF/TiO<sub>2</sub> Photocatalyst with Superior Photocatalytic Activity**

Mingyang Xing, Jinlong Zhang

*East China University of Science and Technology, China*

### **S1-10-O**

#### **Erbium doped Barium Molybdate as an Effective Upconversion Photocatalyst**

Rajesh Adhikari, Soo Wahn Lee, Gobinda Gyawali, Bhupendra Joshi, Sung Hun Cho, Tae Ho Kim

*Research Center for Eco Multi-Functional Nano Materials, Sun Moon University, Korea*

### **S1-11-I**

#### **Synthesis of Designed Non-stoichiometric Strontium Titanate for Efficient Visible-Light Photocatalysis**

Shu Yin, Uyi Sulaeman, Huihui Li, Tsugio Sato

*IMRAM, Tohoku University, Katahira 2-1-1, Aoba-ku Sendai 980-8577, Japan*

### **S1-12-O**

#### **A Study on the Dispersion Stability and Rheological Behavior of Nano-TiO<sub>2</sub> Aqueous Suspension with the Dispersant 8030N**

Shufeng Lin, Wenbin Cao, Junna Xu, Qing Liu

*University of Science and Technology Beijing, China*

### **S1-13-I**

#### **Enhanced Photo Electrochemical Activity of the TiO<sub>2</sub>/ITO Nanocomposite Films Grown onto Single-Walled Carbon Nanotubes at a Low Temperature by Nanocluster Deposition**

Soon-Gil Yoon<sup>1,2</sup>, Thanh-Tung Duong<sup>1</sup>, Won-Jae Lee<sup>3</sup>

*<sup>1</sup>School of Nano Science and Technology, <sup>2</sup>Graduate of Analytical Science and Technology (GRASST), Chungnam*

*National University, <sup>3</sup>Department of Nano Technology, Dong-Eui University, Busan, 614-714, Korea*

### **S1-14-O**

#### **Production of Silicon from Rice Hull Silica by Reduction with Al**

Takeshi Okutani, Sohei Ino

*Yokohama National University, Japan*

### **S1-15-I**

#### **Effect of Temperature and Carbon Contents on the Synthesis of β-SiC from Silicon Sludge by Direct Carbonization Method**

Woo Teck Kwon, Sea Cheon Oh, Younghee Kim, Yoon Joo Lee, JiYeon Won, Soo Ryong Kim

*Korea Institute of Ceramic Engineering and Technology, Kongju National University, Korea*

### **S1-16-O**

#### **The Study of Environmental Degradation Characteristics of Photodegradable Polyethylene Film**

Quanbin Shi, Xuegang Luo, Xiaoyan Lin, Hongping Zhang

*Southwest university of science and technology, China*

**S1-17-O****Effect of Gelatinization on Morphology and Thermal Properties of Polyvinyl Alcohol/corn Starch Blends**

Jiwei Li, Xuegang Luo, Xiaoyan Lin, Xianhong Li  
*Southwest University of Science and Technology, China*

**S1-18-P****Photocatalytic Characteristics of TiO<sub>2</sub> Prepared by Hydrothermal Synthesis**

Sanggu Jeong, Changsik Ju, Seogeun Na, Siyoung Kim  
*Pukyong National University, Korea*

**S1-19-P****A Study on the Band Gap and the Doping Level of V-doped TiO<sub>2</sub> with Respect to the Visible-light Photocatalytic Activity**

Ah Young Choi, Chul Hee Han  
*Sun Moon University, Korea*

**S1-20-P****Chemical Precipitation as a Pretreatment for Phosphorus Removal in Municipal Wastewater Treatment Plants**

Jong-Oh Kim, Jung-Ho Moon  
*Gangneung-Wonju National University, Department of Civil Engineering, Gangneung-Wonju National University, Department of Electric Engineering, Korea*

**S1-21-P****Preparation and Characterization of Ti<sup>3+</sup> Doped TiO<sub>2</sub> and Its High Photocatalytic Activity**

Mingyang Xing, Jinling Zhang, Wenzhang Fang  
*Key Lab for Advanced Materials and Institute of Fine Chemicals, East China University of Science and Technology, China.*

**S1-22-P****Synthesis of Sn<sup>4+</sup> Doped TiO<sub>2</sub> Nanotube and Its Photocatalysis Activity**

Hongying Dong, Wen Ma, Yanping Ren, Kaiming Huang, Weiyan He  
*School of Chemical engineering, Inner Mongolia University of Technology, School of Materials Science and engineering, Inner Mongolia University of Technology, China*

**S1-23-P****Preparation of Cerium Doped Titania Photocatalyst**

Euphracia Ndinda, Kyung Nam Kim  
*Advanced Materials Engineering, Kangwon National University, Korea*

**S1-24-P****Antibacterial Performance of Mo Doped TiO<sub>2</sub> Photocatalyst Nanocomposite Coated on Structured Sheets**

Eun Young, Oybek Tursunkulov, Amir Abidov, Sang Yeup Kim, Jeong Ae Park, Mun Hyeup Kim, Gwang Han Ji\*, and Sungjin Kim  
*School of Advanced Materials and System Engineering, Kumoh National Institute of Technology, 1 Yangho-dong, Gumi, 730-701, Korea, Department of Applied Chemistry, Kumoh National Institute of Technology, 1 Yangho-dong, Gumi, 730-701, Korea*

### **S1-25-P**

#### **Hydrothermal Synthesis of CTAB Added PbMoO<sub>4</sub> Oxides and Their Photocatalytic Decomposition of Rhodamin B**

Won Young Jung, Seong Soo Hong  
*Pukyong National University, Korea*

### **S1-26-P**

#### **Photocatalytic Decomposition of Rhodamin B Over PbMoO<sub>4</sub> Oxides**

Seong Hun Lee, Seong Soo Hong, Won Young Jung  
*Pukyong National University, Korea*

### **S1-27-P**

#### **Enhancement of the Catalytic Reactivity of Pt/TiO<sub>2</sub> by Using Zeolite Adsorbent for the Decomposition of Acetaldehyde**

Masashi Inoue, Masato Takeuchi, Masaya Matsuoka, Masakazu Anpo  
*Department of Applied Chemistry, Osaka Prefecture University, Japan*

### **S1-28-P**

#### **Removal of Isopropyl Alcohol (IPA) Using Anodized Photocatalytic Membrane Reactor**

Jong Oh Kim, Seung Pil Choi  
*Gangneung-Wonju National University, Korea*

### **S1-29-P**

#### **Photocatalytic Degradation of Humic Acid Using Anodized TiO<sub>2</sub> Metal Plate with Reactive Nano Materials Doping**

Jong Oh Kim, Seung Pil Choi, Jun Su Lee  
*Gangneung-Wonju National University, Korea*

### **S1-30-P**

#### **Adsorption of Bromic Acid Ion in Water by Reduced Titanium Oxide**

Eiji Watanabe, Kaori Nishizawa, Masato Tazawa  
*Ecological Ceramics Group, Materials Research Institute for Sustainable Development, National Institute of Advanced Industrial Science and Technology (AIST chubu), Japan*

### **S1-31-P**

#### **Catalytic Combustion of Benzene Over LaCoO<sub>3</sub> Perovskite Oxides Prepared Using Microwave Process**

Won Young Jung, Seong Soo Hong  
*Pukyong National University, Korea*

### **S1-32-P**

#### **Treatment Performance of Low Strength Electronic Wastewater Using Solid-advanced Oxidation Process**

Jong Oh Kim, Jun Su Lee  
*Gangneung-Wonju National University, Korea*

### **S1-33-P**

#### **A Study on the Synthesis of SiC Powder from the Silicon Sludge of the Photovoltaic Industry**

Woo Teck Kwon, Sea Cheon Oh, Younghee Kim, Yoon Joo Lee, Eunjin Jung, Soo Ryong Kim  
*Korea Institute of Ceramic Engineering and Technology, Kongju National University, Korea*

**S1-34-P****Fabrication of Nanosheet-assembled Hierarchical AlOOH and  $\gamma$ -Al<sub>2</sub>O<sub>3</sub> Microspheres and Its Application in Water Purification**

Xuanmeng He, Guangjun Li, Hui Liu, Junqi Li, Zhenfeng Zhu, Xiulan Wu  
*School of materials science and engineering, shaanxi university of science and technology, xi'an 710021, PR China, Key Laboratory of Auxiliary Chemistry & Technology for Chemical Industry, Ministry of Education, Shaanxi University of Science and Technology Xi'an 710021, P. R. China*

**S1-35-P****Studies on Adsorption of Strontium (II) by Expanded Rice Husk**

Yunqiang Tang, Xiaoyan Lin, Yaping Zhang, Xuegang Luo  
*School of Materials Science and Engineering, Southwest University of Science and Technology, Engineering Research Center for Biomass Materials, Ministry of Education, China*

**S1-36-P****Adsorption of Enzyme-treated Starch/poly( butylene succinate)(PBS) Blends for Copper(II)**

Han Zhou, Xuegang Luo, Xiaoyan Lin, Jiwei Li  
*Southwest University of Science and Technology, China*

**S1-37-P****Electrospinning Membranes of Thermoplastic Carboxymethyl Cellulose/PLA for Separation Cu<sup>2+</sup> from Aqueous Solutions**

Ying Li, Xiaoyan Lin, Zhe Chen, Xuegang Luo  
*Department of Materials Science and Engineering, Southwest University of Science and Technology, China. Engineering Research Center for Biomass Materials, Ministry of Education, China*

**S1-38-P****Effect of Membrane Materials on Simultaneous Treatment of Seawater and Reclaimed Wastewater**

Sangho Lee, Jeongseok Yang, Jinsik Sohn, Juneseok Choi  
*Kookmin University, Korea Institute of Construction Technology, Korea*

**S1-39-P****Exploration of Novel Draw Solute for Forward Osmosis**

Juneseok Choi, Sangho Lee, Jihee Han, JinSik Sohn  
*Korea Institute of Construction Technology, Kookmin University, Korea*

**S1-40-P****The Rheological Properties of Konjac Glucomannan (KGM) Solution**

Pan He, Xuegang Luo, Xiaoyan Lin, Hongping Zhang  
*Engineering Research Center of Biomass Materials, Ministry of Education, Southwest University of Science and Technology, Mianyang 621010, China*

**S1-41-P****Separation Technology of Polymer Residue Components in Soil**

Cheng Chen, Xuegang Luo, Xiaoyan Lin, Xiaoli Xiong  
*Engineering Research Center for Biomass Materials, Ministry of Education, China, Engineering Research Center for Biomass Materials, Ministry of Education, China Department of Materials Science and Engineering, Southwest University of Science and Technology, Mianyang, Sichuan, 621010, China*

### **S1-42-P**

#### **Effect of PE Film Degradation Products on the Carbon Dioxide Content of Soil: A Mathematical Study**

Jiliang Wu, Xuegang Luo, Hongping Zhang, Xiaoyan Lin  
*Southwest University of Science and Technology, China.*

### **S1-43-P**

#### **Low-temperature Properties of Ultraviolet Aging of Asphalt**

Li Li, Shenjia Tong  
*Xi'an University of Architecture & Technology, China.*

### **S1-44-P**

#### **Research of Low Cost Fracturing Proppant**

Haiyun Jin, Bo He, Ruidong Niu, Mengshan Hu  
*Xi'an Jiaotong University, China.*

### **S1-45-P**

#### **Materials Life Cycle Assessment of Chemical Strengthening Glass used for Touch screen panel**

Na-Ri Lee, Tae-Whan Hong, Soo-Sun Lee<sup>1</sup>, Kyeong-Il Kim<sup>1</sup>, Sung-Jei Hong<sup>2</sup>  
*Chungju National University, <sup>1</sup>Department of Material Science and Engineering/Research Center of Sustainable Eco-Devices and Materials(ReSEM), Chungju National University, Daehak-ro 50, Chungju-si, Chungbuk, 380-702, Republic of Korea. <sup>2</sup>Korea Electronics Technology Institute, #68 Yatap-dong, Bundang-gu Seongnam, Gyeonggi Province, 463-816, Republic of Korea.*

### **S1-46-P**

#### **A Study about Environmental Assessment on the Recycling ITO (Indium tin oxide) by MLCA Method**

Soo-Sun Lee, Tae-Whan Hong, Na-Ri Lee<sup>1</sup>, Kyeong-Il Kim<sup>1</sup>, Sung-Jei Hong<sup>2</sup>  
*Chungju National University, <sup>1</sup>Department of Materials Science and Engineering/Research Center of Sustainable Eco-Devices and Materials(ReSEM), Chungju National University, Daehak-ro 50, Chungju, Chungbuk, 380-702, Republic of Korea <sup>2</sup>Korea Electronics Technology Institute, 68 Yatap-dong, Bundang-gu Seongnam, Gyeonggi Province, 463-816, Republic of Korea*

### **S1-47-P**

#### **Safety Assessment on Water Quality of Rainwater Stored Over the Long Term in a Rainwater Harvesting System**

Jung-Hun Lee, Reeho Kim, Hana Kim, Jungsoo Mun  
*Korea Institute of Construction Technology, Korea*

### **S1-48-P**

#### **Fabrication and Resistivity Property of Silicon Carbide Resistance Materials**

Haiyun Jin, Dawei Feng, Zhen Huang, Ruidong Niu, Mengshan Hu, Naikui Gao, Bo He  
*Xi'an Jiaotong University, China*

### **S1-49-P**

#### **A Study on the Synthesis of SiC Powder from the Silicon Sludge of the Photovoltaic Industry**

Woo Teck Kwon, Sea Cheon Oh, Younghee Kim, Yoon Joo Lee, Eunjin Jung, Soo Ryong Kim  
*Korea Institute of Ceramic Engineering and Technology, Kongju National University, Korea*

**S1-50-P****Low Temperature Molten-salt Synthesis and Characterization of Nanocrystalline Mullite Whiskers from Coal Gangue**

Xiulan Wu, Dan Zhao, Jianfeng Zhu, Qiang Ren

*Shaanxi University of Science and Technology, Key Laboratory of Auxiliary Chemistry & Technology for Chemical Industry, Ministry of Education, Shaanxi University of Science and Technology Xi'an 710021, P. R. China*

**S1-51-P****Research on Direct Reduction Roasting and Magnetic Separation of Low-grade Laterite Nickel Ore**

Shuang Ping, He Feng

*Xi'an university of Architecture and Technology, China.*

**S1-52-P****Effect of Maintaining Time in Annealing Heat Treatment for FSWed 6061-T6 Al Alloy**

Sung Hyun Park, Seong Jong Kim, Min Su Han, Seung Jun Lee, Seok Ki Jang, Seong Jong Kim

*Mokpo Maritime University, Korea*

**S1-53-P****Evaluation of Characteristics on Various Al Alloy for Ship Under Ocean Environmental**

Min Su Han, Min Sung Kim, Jae Cheul Park, Kwang Yong Hyun, Seung Jun Lee, Seok Ki Jang, Seong Jong Kim

*Mokpo Maritime University, Korea*

**S1-54-P****Electrochemical Characteristics of Al Anode for MGPS Under the Effect of Applied Current and Flow Velocity**

Seong Jong Kim, Seung Jun Lee, Seok Ki Jang

*Mokpo Maritime University, Korea*

**S1-55-P****Microstructure and Corrosion Behavior of Mg-xSn Binary Alloy**

Kyung Chul Park, Ik Min Park, Byeong Ho Kim, Su Mi Jo, Sang Hyun Kim, Dae Hyun Cho, Yang Do Kim, Yong Ho Park

*Pusan national university, Korea*

**S1-56-P****A Study on High Current MIG Welding Process of One Pass Butt Joint for Welding Aluminum Alloy Thick Plate**

Youngbae Choi, Dongcheol Kim, Jeaho Lee, Munjin Kang

*Korea Institute of Industrial Technology, Dept. of Mechanical Engineering, Hanyang University, Korea*

**S1-57-P****Development of the Process Conditions of Electrical Resistance Spot Welding Using Waveform Control in Mg Alloy**

Hyunjun Yoon, Dongcheol Kim, Munjin Kang

*korea institute of industrial technology, Korea*

**S1-58-P****The impact of solution treatment on the SAF2507 Duplex Stainless Steel Microstructure**

Jinming Liu, Jie Liu, Guangwei Fan, Peide Han, Guopin Li

*College of Materials Science and Engineering, Taiyuan University of Science and Technology, Taiyuan Iron and Steel*

*(Group) Company Ltd., China*

### **S1-59-P**

#### **A Study on the Improvement of Nitrogen Removal Efficiency in the Small Sewage Treatment Facility Utilizing Zeolite Carrier**

Kwang Hyun Lee, Hyun Jong Joo, Jung Soo Choi, Sung Chul Kim  
*Kyonggi University, Korea*

### **S1-60-P**

#### **Effect of Calcium Fluoride and Magnesia on the Performance of Tundish Fluxes Made of Blast Furnace Slag**

Zhaohui Zhang, Yun Ren, Bingchen Meng, Luyan Sun  
*Xi'an University of Architecture and Technology, China*

## **S2: Eco-materials processing and design; multifunctional materials**

### **S2-01-I**

#### **Fabrication, Microstructure and Compression Properties of AZ Mg Foams**

Bo-Young Hur, Xue-Zheng Yue, Rui Zhao  
*Gyeongsang National University, i-cube, ERI, Korea*

### **S2-02-O**

#### **Fabrication of Nanostructured Silicon Carbide by Pyrolysis of Rice Husks**

Li Jin, Masayoshi Fuji, Takashi Shirai  
*Ceramics Research Laboratory, Nagoya Institute of Technology, Japan.*

### **S2-03-O**

#### **Mechanical Properties and Electrochemical Corrosion Behavior of Pulse Electrodeposited Ni-TiB Composite Coatings**

Gobinda Gyawali, Soo Wahn Lee, Dongjin Woo  
*Research Center For Eco Multi-Functional Nano Materials, SunMoon University, Korea Institute of Construction Materials, Korea*

### **S2-04-O**

#### **Preparation and Characterization of KGM/CaCO<sub>3</sub> Composite Membranes**

Yan Chen, Xuegang Luo, Xiaoyan Lin, Mingqi Chen, Yongman Jiang  
*School of Material Science and Engineering, Southwest University of Science and Technology, Mianyang, Sichuan, China*

### **S2-05-O**

#### **A Study on Thermal Conductivity and Mechanical Properties of Al-Zn-Mg Aluminum Alloys**

Jesik Shin, Sehyun Ko, Dongjin An, Kitae Kim  
*Korea Institute of Industrial Technology, Korea*

### **S2-06-O**

#### **Recovery of Reusable Metal Resources from Industrial Non-ferrous Wastes Using Wet Process**

Kyeongmi Kim, Sunjung Kim, Binh Ha Bui, Byoungyong Im, Jieun Lee, Wang-Hoi Gu, Seong-Ho Son<sup>1</sup>  
*University of Ulsan, <sup>1</sup>Korea Institute of Industrial Technology, Korea*

**S2-07-O****Study on Cu-Ag-Zn Abradable Seal Coatings by Cold Spraying**

Yanfang Shen, Zheng Jin, Xinyu Cui, Yongshan Tao, Jie Wu, Ming Li, Lingyan Kong, Tianying Xiong  
72th Wenhua Road, Institute of Metal Research, Chinese Academy of Sciences, 62th Wencui Road, Key State Laboratory of Corrosion Science, Shenyang, China, 110016 56th Yatai Road, Jiaxing Engineering Center, Institute of Metal Research, Chinese Academy of Sciences, Jiaxing, Zhejiang, China

**S2-08-O****Wear Behavior of Vacuum Plasma Sprayed B<sub>4</sub>C/Ni Composite Coatings**

Huiying Zhu, Xuebin Zheng, Yaran Niu, Chucheng Lin, Liping Huang, Heng Ji  
Key Laboratory of Inorganic Coating Materials, Shanghai Institute of Ceramics (SIC), Chinese Academy of Sciences (CAS), Shanghai, China

**S2-09-O****Tribological Behavior and Wear Mechanism of Vacuum Plasma Sprayed TiC-NiCr Composite Coatings**

Xiaoqian Guo, Xuebin Zheng, Yaran Niu, Liping Huang, Heng Ji  
Key Laboratory of Inorganic Coating Materials, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, China

**S2-10-O****Investigation on the Effect of Compositions, Microstructure and Defects on the Mechanical Properties of the Porcelain Insulator**

Jiantao Luo, Wenbin Cao  
University of Science and Technology Beijing, Beijing, China

**S2-11-O****Mechanical and Microstructure Properties of GMA Welded HPF Boron-alloyed Steel 22MnB<sub>5</sub>**

Younsuk Jong, Youngkook Lee, Wonbeom Lee  
Yonsei university, Korea institute of industrial technology, Korea

**S2-12-O****Investigation on Mechanical Properties and Formability of Cross-roll-rolled Ni-10Cr Alloy**

Hansol Kim, Kukhyun Song, Wonyong Kim  
Korea Institute of Industrial Technology, Korea

**S2-13-O****Investigation of Microstructure and Mechanical Properties of Friction Stir Lap Jointed Ni Base Superalloy**

Kukhyun Song, Kazuhiro Nakata  
Joining and Welding Research Institute, Japan, Korea Institute of Industrial Technology, Korea

**S2-14-P****Properties of Artificial Lightweight Aggregate by Using Magnetic Separated Bottom Ash from Coal Power Plant**

Changsup Jang, Yootaek Kim, Yunjae Choi  
Kyonggi University, Korea

## **S2-15-P**

### **Effect of Binding Phases on the Properties of Chromia/Alumina Refractory Castables**

Zhao Jingming, Hwang Kyu Hong, Zhao Jingming, Kim Tae Suk, Kim Gi Chul, Hwang Kyu Hong, Byungsei Jun\*, Bae Dong Sik\*\*

*Gyeongsang National University, Eng. Res. Inst., i-Cube Center, Gyeongsang Nat'l Univ., Jinju, 660-701, S. Korea*  
*\*Kyungnam University, \*\*Changwon Nat'l Univ., S. Korea*

## **S2-16-P**

### **Visible up-conversion Luminescence of Metal Tungstates and Molybdates**

Jun Ho Chung, Jeong Ho Ryu, Soon-Yong Kweon, Tae-Whan Hong, Il-Ho Kim, Jung-Il Lee, Soon-Chul Ur, Young-Geun Lee, Sung-Lim Ryu

*Department of Materials Science and Engineering, Hanyang University, 17 Haengdang-dong Seongdong-gu, Seoul 133-791, South Korea, Department of Materials Science and Engineering, Chungju National University, South Korea*

## **S2-17-P**

### **Laser Ablation Process for Nanostructured Scheelite-type Ceramic Materials**

Young-Geun Lee, Jeong Ho Ryu, Soon-Yong Kweon, Tae-Whan Hong, Il-Ho Kim, Jung-Il Lee, Soon-Chul Ur, Sung-Lim Ryu

*Department of Materials Science and Engineering, Chungju National University, South Korea*

## **S2-18-P**

### **Thermoelectric Properties of Manganese Monosilicide Synthesized by Mechanical Alloying Process**

Moon-Kwan Choi, Soon-Chul Ur, Moon-Kwan Choi, Woong-Jae Lee, Il-Ho Kim, Young-Geun Lee, Soon-Yong Kweon, Man-Soon Yoon

*Chungju National University and KILAM, South Korea*

## **S2-19-P**

### **First-principles Investigation on Ag, N codoped in p-type ZnO**

Cheng He, Wenxue Zhang; Zhongqi Shi

*Xi'an Jiaotong University, Chang'an University, China*

## **S2-20-P**

### **Characteristics of Artificial Lightweight Aggregate by Using Magnetic Separated Desulfurized Fly Ash and Dredged Soil**

Changsup Jang, Yootaek Kim, Yunjae Choi and Joon-Seong Lee

*Kyonggi University, Korea*

## **S2-21-P**

### **Effect of the Temperature and Vacuum for the Open Cell Mg Alloy in the Granular Mould**

Xuezheng Yue, Bo-Young Hur, Guorong Zhou,

*Ji Nan university, China. Gyeongsang National University, i-cube, EIR, Korea*

## **S2-22-P**

### **Solid-state Synthesis of $\beta$ -SiAlON:Eu<sup>2+</sup> Green Phosphor for White LED**

Sung-Lim Ryu, Jeong-Ho Ryu, Soon-Yong Kweon, Tae-Whan Hong, Il-Ho Kim, Jung-Il Lee, Soon-Chul Ur, Young-Geun Lee

*Department of Materials Science and Engineering, Chungju National University, South Korea*

**S2-23-P****Novel Ceramics Fabrication Technique through the Surface Activation by Mechano-chemical Treatment**

Takashi Shirai, Masayoshi Fuji  
*Nagoya Institute of Technology, Japan*

**S2-24-P****Fabrication and Microstructure of Silicon Carbide Resistor Materials for Pot Type Heating Elements**

Haiyun Jin, Bo He, Hongguang Ren, Zhen Huang, Dawei Feng, Ruidong Niu, Mengshan Hu, Naikui Gao.  
*Xi'an Jiaotong University, China*

**S2-25-P****Acrylonitrile Functionalized Emulsion SBR/Silica Compounds for Tire Tread Application**

Kyu Hyun, Wonho Kim  
*Pusan National University, Korea*

**S2-26-P****Cu<sub>2</sub>O Doping Effects on Microstructure and Piezoelectrics Properties in (Na,K)NbO<sub>3</sub>-Based Pb-Free Ceramics**

Youn-Ki Lee, Sung-Lim Ryu, Soon-Yong Kweon  
*Chungju National University, South Korea*

**S2-27-P****The Effect of N Addition upon the GTAW Welding Process of SAF 2507 Duplex Steels**

Dongfang Du, Jie Liu, Guangwei Fan<sup>1,2</sup>, Jinming Liu<sup>1</sup>, Dong Yang<sup>1</sup>  
*Taiyuan University of Science and Technology, Xi'an Jiaotong University; Taiyuan University of Science and Technology, China. <sup>1</sup> College of Materials Science and Engineering, Taiyuan University of Science and Technology. <sup>2</sup> Taiyuan Iron and Steel (Group) Company Ltd. China*

**S2-28-P****Research on Microstructure and Properties of Mo-Si-B Alloys**

Shuangping Yang, Guojun Zhang  
*School of Metallurgical Engineering; Xi'an university of Architecture and Technology, Xi'an University of Technology, China*

**S2-29-P****Manufacturing of Zirconia Cutting Tools Through PIM and Hot Isostatic Pressing Process and Experimental Cutting Test**

Young Moo Heo, Sung-Ho Chang, Kwang-Ho Shin  
*Korea Institute of Industrial Technology, Korea*

**S2-30-P****Compressive Strength Evaluation of SCR Catalyst recycled Al-dross**

Min A Bae, Man Sig Lee, <sup>1</sup>Hong Dae Kim, <sup>2</sup>Kwang Ho Kim  
*Korea Institute of Industrial Technology(KITECH), Korea. <sup>1</sup>Korea Institute of Industrial Technology(KITECH), <sup>2</sup>School of Material Science and Engineering, Pusan National University*

## **S2-31-P**

### **Effect of Deep Cryogenic Treatment on Microstructure of 5A06 Aluminum Alloy MIG Welded Joint**

Shan Gao, Zhisheng Wu<sup>1</sup>, Pengfei Jin<sup>1</sup>, Junjie Wang<sup>2</sup>

*College of Materials Science and Engineering, Taiyuan University of Science and Technology, <sup>1</sup>College of Materials Science and Engineering, Taiyuan University of Science and Technology <sup>2</sup>Key Laboratory of Cryogenics, TIPC, CAS, Beijing, 100190, China*

## **S2-32-P**

### **Characterization Of Al/Cu Composite Produced by Multi-Filament Extrusion During Isothermal Aging**

Haguk Jeong, Jongbeom Lee

*Korea Institute of Industrial Technology*

## **S2-33-P**

### **Evaluation of Innovated Multistage Soil Filter System with Functional Filter Layer of Boauxsol™**

Hana Kim, Reeho Kim, Jung-Hun Lee, Jungsoo Mun, Yong-Hak Kim

*Korea Institute of Construction Technology, KOLON E&C, Korea*

## **S2-34-P**

### **Influence of Addition of Waste Glass as an Fluxing Agent on the Bloating Phenomenon of Artificial Aggregates Fabricated from Coal Bottom Ash**

Sinae Jo, Seunggu Kang

*The Korean Ceramic Society, Korea*

## **S2-35-P**

### **Fabrication and Surface Hardening Properties for SiC/AlN Ceramic Composites with Different SiC Grain Size**

Haiyun Jin, Guanjun Qiao, Zhen Huang, Ruidong Niu, Mengshan Hu.

*Xi'an Jiaotong University, China*

## **S2-36-P**

### **Reduction Effects of Urban Heat Island by Water-retentive Pavement**

Reeho, Kim, Jong-Bin Park, Jung-Soo Mun, Jung-Hun Lee

*Korea Institute of Construction Technology, Korea*

## **S2-37-P**

### **Prediction of Fine Blanking Tool Deformation for Production of Multiple Turbocharger Vane Lever with Stainless Steel**

Jong-Deok Kim, Jeong-Jin Kang Seok-Kwan Hong

*Korea Institute of Industrial Technology, Korea*

## **S2-38-P**

### **Effect of annealing process on Mechanical properties and texture changes of AZ31 Mg alloy sheets**

Hojun Bang, Jongbeom Lee, Haguk Jeong

*Korea Institute of Industrial Technology, Korea Institute of Industrial Technology*

### **S2-39-P**

#### **Defects Diagnosis Technology of Water Supply Pipe's Network Using Pipe Endoscope Camera of High Resolution/High Pressure Resistance Performance**

Hyun-dong Lee, Joo-yeon Lee, Pill-jae Kwak, Cheol-han Park  
*Korea Institute of Construction Technology, Korea. Seoyoung Eng. co., Ltd, Korea*

### **S2-40-P**

#### **Effect of Various Routes of Differential Speed Rolling process on Mechanical Properties and Texture change of AZ31 Mg sheet**

Yongkeun Kim, Jongbeom Lee, Haguk Jeong  
*Korea Institute of Industrial Technology, Korea Institute of Industrial Technology*

### **S2-41-P**

#### **Effects of Extrusion Ram Speed on the Mechanical Properties, Microstructure and Texture of CaO Added AZ31 Mg Alloy**

Young-Chul Shin, Duk-Jae Yoon, Seong-Joo Lim, Ho-Joon Choi  
*Korea Institute of Industrial Technology, Korea*

### **S2-42-P**

#### **Influences of Die Shape on The Extrudability and Texture of CaO Added AZ31 Mg Alloy**

Seong-Hwan Bae, Young-Chul Shin, Duk-Jae Yoon, Seong-Joo Lim  
*Korea Institute of Industrial Technology, Korea*

### **S2-43-P**

#### **Effect of Al Addition on the Recrystallization Behavior of Mg**

Keun Joon Kim, Tae Kwon Ha  
*Gangneung-Wonju National University, Korea*

### **S2-44-P**

#### **Parametric Study on Die Geometry for High Speed Extrusion of CaO Added AZ31 Mg Alloy**

Duk-Jae Yoon, Young-Chul, Seong-Joo Lim  
*Korea Institute of Industrial Technology, Korea*

### **S2-45-P**

#### **A Study on Surface Oxidation Coating Characteristic of Al-Si Casting Alloys**

Jesik Shin  
*Korea Institute of Industrial Technology, Korea*

### **S2-46-P**

#### **Mechanism and Tendency of Intermetallic Formation on Die-material in Iron-contaminated Al-Si Casting Alloy**

Bonghwan Kim, Sangmok Lee  
*Korea Institute of Industrial Technology, Korea*

### **S2-47-P**

#### **Microstructure and Electrochemical Properties of Mg-5Al-xYb Alloys.**

Sumi Jo, Yongho Park, Kyungchul Park, Byeongho Kim, Sanghyun Kim, Daehyun Cho  
*Pusan National University, Korea*

## **S2-48-P**

### **Hot Workability of a High Strength Low Alloy Steel for Construction Application**

Woo Young Jung, Tae Kwon Ha  
*Gangneung-Wonju National University, Korea*

## **S2-49-P**

### **Isolation and Characterization of the New Klebsiella pneumoniae J2B Strain Showing Improved Growth Characteristics with Reduced Lipopolysaccharide Formation**

Mariadhas Valan Arasu, Sunghoon Park, Vinod Kumar, Somasundar Ashok, Hyohak Song  
*Pusan National University, Research and Development Center, GS Caltex Corporation, Korea*

## **S2-50-P**

### **The Development of the Magnesite-dolomite Refractories Materials**

Dong Jie, Pan Jie, Yang Jun, Zhang Congrong, Li Zhiyuan  
*Xi'an University of Architecture and Technology, Xian, China*

## **S2-51-P**

### **Effects of Working Pressure on Characterization of AlN Thin Films Grown on Sapphire by Pulsed Laser Deposition**

Eunhee Jeong, Sangyeup Park, Junki Chung  
*Department of Ceramic Engineering, Technology Innovation Center for Fine Ceramic, Gangneung-Wonju National University, Gangneung, 210-702, Rep. of Korea*

## **S2-52-P**

### **Inspection of the TFT Devices Using the Low-energy Electron Beam Emitted from the Microcolumn**

Tae-Sik Oh, Seungjoon Ahn, Dea-Wook Kim, Ho Seob Kim  
*Sun Moon University, Korea*

## **S2-53-P**

### **Fast Inspection of Non-visual Defects in the Wafer Surface Using Two Low-energy E-beam Sources**

Seong Joon Ahn, Tae-Sik Oh, Dae-Wook Kim, Ho Seob Kim  
*Sun Moon University, Korea*

## **S2-54-P**

### **Opalescence, accidental coloring and Jun ware glaze**

Fen Wang, Changan Yang, Ying Lin, Jianfeng Zhu  
*Shaanxi University of Science and Technology, China*

## **S2-55-P**

### **Influence of High Temperature Oxidation on the Structure of TiAlSiN Coatings Synthesized by Arc Ion Plating Systems**

Sang-Hwan Bak, Dong-Bok Lee  
*Sungkyunkwan University, Korea*

## **S2-56-P**

### **The Effect of Feeding Behavior on Chronic Stress Responses**

Sanggyun Roh, Jaegook Lee  
*Sunmoon university, Korea*

**S2-57-P****Mechanical Properties and Microstructure of Al<sub>2</sub>O<sub>3</sub>/TiAl in Situ Composites****Doped with Cr and V<sub>2</sub>O<sub>5</sub>**

Kun Zhang, Wang Fen, Jianfeng Zhu, Wenwen Yang  
*Shaanxi University of Science and Technology, China*

**S2-58-P****Preparation and Characterization of Zinc Phosphate-coated Mica Anticorrosive Pigment**

Jin Wook Park, Gun Dae Lee, Yu-Jin Lee<sup>1</sup>, Seong Soo Park<sup>1</sup>, Seong Soo Hong<sup>2</sup>, Dae-Sung Kim<sup>3</sup>, Seung-Ho Lee<sup>3</sup> <sup>123</sup>  
<sup>1</sup>*Dept. Industrial chemistry, <sup>2</sup>Dept. Chemical Engineering, Pukyong National University, Busan 608-739, Korea,*  
<sup>3</sup>*Composite Materials Lab. Korea Institute of Ceramic Eng. & Tech., Seoul 153-801, Korea*

**S2-59-P****The Localization Technical Development of Wire-Mesh Type System for Hydrocarbon Mist Gas/Liquid Separation**

Seongjin Kang, Chikyun Park, Jeongjin Entech Ltd, Sungjae Kil, Mansik Lee  
*Korea Institute of Industrial Technology Country:Korea*

**S2-60-P****The Effects of Catchment Materials and Treatment Train on Rainwater Quality in a Rainwater Harvesting System**

Jungsoo Mun, Mooyoung Han, Reeho Kim  
*Korea Institute of Construction Technology, Seoul National University, Korea*

**S2-61-P****Characteristics of SiO<sub>x</sub> thin films deposited by atmospheric pressure chemical vapor deposition using a double discharge system**

Jong-Sik Oh, Geun-Young Yeom, Jae-Beom Park  
*SungKyunKwan University Korea*

**S2-62-P****Experimental Study on the Relation between Viscosity and Electrical Conductivity of CaF<sub>2</sub>-SiO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub>-CaO-MgO Slag System**

Jiantao Ju, Zhenlin Lu, zhiyuan Jiao, Jun Yang, Zhaohui Zhang  
*Xi'an University of Technology, Xi'an University of Architecture and Technology, China*

**S2-63-P****Brittle Fracture Analysis of ERW Seam Weld in Internal Pressure Failure**

Rui Wang, Dongfeng Li, Xinli Han, Peng Yang, Jun Han, Qi Lou  
*CNPC Tubular Goods Research Institute, China*

**S2-64-P****Simulation Research on Temperature and Pressure Distribution of Low-temperature Distillation Furnace**

Xiaoyan Hu, Qiuli Zhang, Xinzhe Lan, Xicheng Zhao  
*Xi'an university of architecture and technology, China*

## **S2-65-P**

### **Observed Seizure between Die and Workpiece in Hot Die Forging of Steels**

Hiroki Yoshikawa, Yukihiro Sato, Makoto Nanko, Takeshi Oka, Norio Motoi  
*Nagaoka University of Technology, JOHETSU INDUSTRIES.co.Ltd, Japan*

## **S2-66-P**

### **Second-order Perturbation Solutions to a Liquid Pool Spreading Model with Instantaneous Spill**

Myungbae Kim  
*Korea Institute of Machinery & Materials, Korea*

## **S2-67-P**

### **The Solderability and Mechanical Properties of Sn-10In-5Bi Solder for Silicon Solar Cells**

Hyug Jong Kim, Byung Ho Choi, Jin Sik Kim, Hyo Jae Kim, In Soo Kim, Young hyung Kim  
*Kumoh National Institute of Technology, Korea*

## **S2-68-P**

### **Effect of Carbon Content on Synthesis of $Ti_2AlC$ by Hot Pressing**

Jianfeng Zhu, Na Han, Feng Wang  
*Shaanxi University of Science and Technology, China*

## **S2-69-P**

### **Study on the Rheological Properties of LLDPE/ $CaCO_3$ Plasticized with the Fatty Acid Extracted from Hogwash Oil**

Chaole Yun, Xuegang Luo, Xiaoyan Lin, Jiwei Li, Pan He  
*Southwest University of Science and Technology, China*

## **S2-70-P**

### **The Behaviors of Removing Silver Ions by Low-cost Expanded Rice Husk, Nature Diatomite and Nature Bentonite as Sorbents**

Xuan Liang, Xuegang Luo, Xiaoyan Ling, Qiang Mei  
*Southwest University of Science and Technology, School of Material Science and Engineering; Engineering Research Center for Biomass Materials, Ministry of Education, China*

## **S2-71-P**

### **Investigation of Cavitation-corrosion Complexes Behavior for $AlBC_3$ Alloy with Hybrid-potentiostatic Method in Sea Water**

Jaecheul Park, Seongjong Kim, Gwangyong Hyun, Minsung Kim, Seungjun Lee, Minsu Han  
*Division of marine system engineering, Division of marine system engineering, Mokpo Maritime University, Korea*

## **S2-72-P**

### **Optimization of Process Design for Tubular Shaft with Internal-spline Using Precision Forming Technology**

Seongju Lim, Hojun Choi, Deogjae Yoon, Youngchul Shin, Daewon Kim  
*Korea Institute of Industrial Technology, Korea*

## **S2-73-P**

### **Preform Design for Precision Piercing of Center Boss of Products with Flange Hub Shapes**

Daewon Kim, Seongju Lim, Hojun Choi, Deogjae Yoon, Youngchul Shin  
*Korea Institute of Industrial Technology, Korea*

### **S2-74-P**

#### **Synthesis of Nano Glass Powders by DC Thermal Plasma Process**

Hyunjin Shim, Hyungsun Kim, Sunghwan Cho, Sunil Kim  
*School of Materials Engineering, Inha University, Korea*

### **S2-75-P**

#### **Study on the Correlation of the Voltage Signals for the Image Stability of the Low Voltage Scanning Electron Microscopy**

Taeyoung Kim, Seungjoon Ahn  
*Sun Moon University, Korea*

### **S2-76-P**

#### **High-temperature Oxidation of Ni-based Inconel 713 Alloys at 800-1100°C in Air**

Min Jung Kim, Dong Bok Lee, Seul Ki Kim  
*Sungkyunkwan University, Korea*

### **S2-77-P**

#### **High-temperature Oxidation of Magnesium Alloys Containing Y<sub>2</sub>O<sub>3</sub> Particles in Air**

Min Jung Kim, Dong Bok Lee, Seul Ki Kim  
*Sungkyunkwan University, Korea*

### **S2-78-P**

#### **Effect of bioleaching from the copper matte by indigenous bacteria at 32°C**

Cheon Young Park, Gwon Seung Yang  
*Department of Energy and Resource Engineering, Chosun University, 375 Seouk-dong, Dong-gu, Gwangju 501-759, Korea, Department of Advanced Materials Engineering, Chosun University, 375 Seouk-dong, Dong-gu, Gwangju 501-759, Korea*

### **S2-79-P**

#### **Synthesis Process Development of Cerium exchanged zeolite as the Novel anti-corrosion pigment**

Jung Teag Kim, Jong Myung Park, Ho Su Jeong, Young Woo Kim  
*Graduate Institute of Ferrous Technology, Postech, Korea*

### **S2-80-P**

#### **Effect of Process Parameters on Quality in Joint for Al/Cu Dissimilar Metal Joining a MPW**

Bong-Yong Kang, Ji-Yeon Shim  
*Korea Institute of Industrial Technology, Korea Institute of Industrial Technology, Korea*

### **S2-81-P**

#### **Oxidation of Cr<sub>2</sub>AlC and (Cr<sub>0.95</sub>Ti<sub>0.05</sub>)<sub>2</sub>AlC compounds between 700 and 1000°C**

Seul Ki Kim, Dong Bok Lee, Xu Chunyu, Min Jung Kim  
*Sungkyunkwan University, Korea*

### **S2-82-P**

#### **Drawing Characteristics on the Press Dies with drawbead for High Strength Steel Sheet Adapted to Lighten the weight of the Automobile.**

Sung-ho Chang, Young-Moo Heo  
*KITECH, Korea*

## **S2-83-P**

### **The Friction Characteristics of High Strength Steel Sheet During Pressing Process in Order to Reduce the Weight of Car.**

Kwang-Ho Shin, Young-Moo Heo, Sung-Ho Chang  
*KITECH, Korea*

## **S2-84-P**

### **A study on Piston Seal Design for a Automobile using the CAE**

Youngbae Ko  
*Korea Institute of Industrial Technology, Korea*

## **S3: Nano-structured and/or hybrid materials, porous materials**

### **S3-01-I**

#### **Deposition of Pyrolytic Carbon Coating on Carbon Nanotube**

Yasuo Uchiyama, Nobuhiro Shiraishi, Hideaki Sano, GuoBin Zheng  
*Nagasaki University, Japan*

### **S3-02-I**

#### **Structure and Electrochemical Properties of Spherical Carbon Nanoparticles Synthesized by Sol-gel Method**

Guobin Zheng, Hideaki Sano, Yasuo Uchiyama  
*Graduate School of Engineering, Nagasaki University, Japan*

### **S3-03-O**

#### **Synthesizing of ZnO Nanorods with Tunable Aspect Ratio**

Liyang Zhang, Fen Wang, Jianfeng Zhu, Changjiang Zhou, Jianqiao Han  
*Shaanxi University of Science and Technology, China*

### **S3-04-I**

#### **Architecture Control of TiO<sub>2</sub> Nanotubes under Solution Chemical Processing and their Role on DSSC Performance**

Tohru Sekino, Jang-Yul Kim<sup>(1)</sup>, Satoshi Tsukuda<sup>(1)</sup>, Takafumi Kusunose<sup>(2)</sup>, Soo Whon Lee<sup>(3)</sup>, Shun-ichiro Tanaka<sup>(1)</sup>  
*IMRAM, Tohoku University, (1) Institute of Multidisciplinary Research for Advanced Materials (IMRAM), Tohoku University, Katahira 2-1-1, Aoba-ku, Sendai 980-8577, Japan. (2) Faculty of Engineering, Kagawa University, Hayashi 2217-20, Takamatsu, Kagawa 761-0396, Japan (3) Department of Environmental Engineering, SunMoon University, Asan 336-708, Korea*

### **S3-05-I**

#### **Efficient One-pot Oxidation Reaction by Designing Pd/SiO<sub>2</sub>@Ti-containing Mesoporous Silica Core-shell Catalyst**

Shusuke Okada, Hiromi Yamashita, Shohei Ikurumi, Takashi Kamegawa, Kohsuke Mori  
*Graduate School of Engineering, Osaka University, Japan*

### **S3-06-I**

#### **Unique Catalytic Performances of Single-site Ti-containing Silica with Three-dimensional Hierarchical Porous Structure**

Takashi Kamegawa, Norihiko Suzuki, and Hiromi Yamashita  
*Graduate School of Engineering, Osaka University, Japan*

**S3-07-I****Shape-Controlled Synthesis and Characterization of Nanostructured Magnesium Oxide Carrier for Heterogeneous Catalysis**

Sang Woo Kim, Inho Kim

*Clean Energy Research Center, Korea Institute of Science and Technology, Seoul, Republic of Korea***S3-08-O****Preparation and Characterization of Polyethylene/Ethylene Vinyl Acetate Composite Non-dropping Greenhouse Film**

Jiacheng Wei, Xuegang Luo, Xiaoyan Lin, Hongping Zhang

*South West University of Science and Technology, China***S3-09-O****Ultrahigh Specific Strength and Toughness Borosilicate Glass with Pressurized Argon-filled Pores by Hot Isostatic Pressing**Bo Wang<sup>1</sup>, Koji Matsumaru<sup>1</sup>, Jianfeng Yang<sup>2</sup>, Kozo Ishizaki<sup>1</sup><sup>1</sup>*Nagaoka University of Technology, Japan,* <sup>2</sup>*Xi'an Jiaotong University, China***S3-10-O****Effect of Particle Sizes of Filler on the Viscous Behavior of Glass Composites**

Sneha Samal, Hyungsun Kim, Sunil Kim

*School of Materials Science and Engineering, Inha University, Korea,***S3-11-O****Property and Application of Conductive Porous Alumina Prepared by the Combination of Gelcasting and Reductive Sintering**

Chunxi Hai, Masayoshi Fuji, Takashi Shirai

*Ceramics Research Lab., Nagoya Institute of Technology, Japan, Chika Takai, Ceramics Research Lab., Nagoya Institute of Technology, Japan***S3-12-O****Electrochemical Synthesis of Cu-based Alloy Foams Using Porous Template**

Binh Ha Bui, Sunjung Kim, Byoungyong Im, Kyeongmi Kim, Jieun Lee

*University of Ulsan, Korea***S3-13-I****Porosity Measurement of Porous Copper by Unidirectional Solidification**

Hao Du, Jianzhong Qi, Yuanxia Lao, Tianying Xiong

*Institute of Metal Research, Chinese Academy of Sciences, Shenyang, China***S3-14-P****Bending Strength and Oxidation Resistance of Porous Micro- and Nano-MgO Reinforced Fe–Cr–Ni Metal Matrix Composites at High Temperature**

Chang Chen, Dongping Tian, Jianfeng Yang, Tingshu He, Yonghua Wu

*Xi'an University of Architecture & Technology, China*

### **S3-15-P**

#### **Evaluations of Hydrogen Permeation on NiO-doped Alumina Based Nickel Composite Membrane.**

Boyoung Shon, Miewon Jung  
*Sungshin women's University, Korea*

### **S3-16-P**

#### **CoO/Al<sub>2</sub>O<sub>3</sub> Composite Powders as a Environmentally Effective Heterogeneous Catalyst**

Youngsil Kim, Miewon Jung  
*Sungshin woman's university, Korea*

### **S3-17-P**

#### **Thermal Conductivity of Polyamide/graphite Intercalated Compounds**

Young Hui Koh, Sung Ryong Kim, Mohammad Poostforush  
*Chungju National University, Korea*

### **S3-18-P**

#### **A Non-linear Parameter Q from FT-Rheology under LAOS Flow for Polymer Composite System**

Kyu Hyun, Wonho Kim  
*Pusan National University, Korea*

### **S3-19-P**

#### **Design of Metal-Organic Framework Photocatalysts for Efficient Hydrogen Production with Visible-Light**

Takashi Toyao, Masaya Matsuoka, Masakazu Saito, Yu Horiuchi, Masatoshi Iwata and Hideyuki Higashimura  
*Osaka prefecture university, Sumitomo-Chemical Co., Ltd. Japan*

### **S3-20-P**

#### **The Effect Exfoliated Graphite Addition on Microstructural and Mechanical Properties of Copper Based Composites Prepared by Spark Plasma Sintering**

Bunyod Allabergenov, Sung Jin Kim, Soo Jeong Jo, Amir Abidov, Oybek Tursunkulov, Eun Young Lee, Jeong Ae Park, Sung Bum Park, Dong Hwan Cho\*, Insoo Kim  
*School of Advanced Materials and System Engineering, Kumoh National Institute of Technology, Korea, \*School of Advanced Polymer Engineering, Kumoh National Institute of Technology, Korea*

### **S3-21-P**

#### **Properties of Coatings Synthesized from Boehmite and Alkoxysilane**

Hoyyul Park  
*Korea Electrotechnology Research Institute, Korea*

### **S3-22-P**

#### **UV-IR Simultaneously Absorbing Hybrid Materials**

Seong Jin Kim, Seong Soo Park, Hye Hyeon Kim, Seong-Soo Hong, Geun-Dae Lee  
*Dept. of Industrial & Applied Chemistry, Pukyung National University, Korea*

### **S3-23-P**

#### **Dispersion and Impact Strength of Epoxy Resin/Nano-Al<sub>2</sub>O<sub>3</sub> Composites**

Naikui Gao, Xin Yu, Pu Dong, Bo He, Haiyun Jin  
*State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, China*

**S3-24-P****Synthesis of Indium Doped ZnO Nanostructures by Chemical Vapor Deposition Using In and Zn Powders and their Characteristics to Hydrogen Sensing**

Eadi Sunil Babu, Soon-Ku Hong, Seok Kyu Han, Hyo Sung Lee, Hyojin Kim, Dojin Kim, Young Eon Ihm  
*Chungnam National University, Korea*

**S3-25-P****The Effects of Pre- and Post-plasma Treatment of Electroplated Cu Film on the Defect Generation at the Interface of Cu and Diffusion Barrier**

Min Hyung Lee, Hong-Kee Lee, Mun-Jin Kang  
*Korea Institute of Industrial Technology, Korea*

**S3-26-P****High Thermal Conductivity Materials by Diamond - Epoxy Resin Composite.**

Yoshiyuki Oda, Koji Matsumaru and Kozo Ishizaki  
*Nagaoka university of technology, Japan*

**S3-27-P****Characterization of Cold-Rolled Nickel Electroplated Copper Sheet**

Jung-II Lee, Chang-Woo Hong  
*Dept. of Mat. Sci. and Eng., Chungju Nat'l Univ., Chungju, Chungbuk, Korea*

**S3-28-P****PEG-supported Ionic Liquids as Catalysts for the Cycloaddition of Carbon Dioxide to Epoxide**

Hye-Ji Choi, Dae-Won Park, Soo-Jin Choi  
*Pusan National University, Korea*

**S3-29-P****Fluoride and Nitrate Removal in Water by Electroadsorption Equipped with Carbon Nano-tube Electrodes**

Sun-Hee Yang, In-Soung Chang, S-Y Kim and Han Song-Hee  
*Hoseo University, Korea*

**S3-30-P****External Electric Field Modulated Electronic Properties of Nanogenerators Based on ZnO**

He Cheng, Wenxue Zhang  
*Xi'an Jiaotong University, China, Chang'an University, China*

**S3-31-P****Analysis of CuO-CeO-Al<sub>2</sub>O<sub>3</sub> Powder with and without Oxalic Acid via Sol-gel Process**

Hyoimin Lee, Miewon Jung, Tae-whan Hong  
*Sungshin Women's University, Korea, Chungju National University, Korea*

**S3-32-P****Synthesis of Ni<sub>0.25</sub>Mn<sub>0.25</sub>Zn<sub>0.50</sub>Fe<sub>2</sub>O<sub>4</sub> Ferrite Nanoparticles via Low Temperature Combustion Reaction Route**

Xi Xia Liu, Jianfeng Zhu  
*Shaan Xi University of Science & Technology, China*

### **S3-33-P**

#### **Controllable Synthesis and Magnetic Properties of Octahedral Fe<sub>3</sub>O<sub>4</sub> via a Simple Hydrothermal Route**

Tao Han, Xiuzhi Jin, Xiangnan Zhang

*School of Materials Science and Engineering, North University of China, China*

### **S3-34-P**

#### **Synthesis and Characterization of TiO<sub>2</sub> Nanoparticles by Reverse Micelle and Hydrothermal Process**

Ho-Jung Kim, Dong- Sik Bae, Soo-Wohn Lee,

*Department of Environmental Engineering, Sun Moon University, South Korea, Department of Convergence Materials Science and Engineering, Changwon National University, Korea*

### **S3-35-P**

#### **Synthesis and Characterization of TiO<sub>2</sub> Nanoparticles by Reverse Micelle Processing**

Ho-Jung Kim, Dong- Sik Bae, Soo-Wohn Lee,

*Department of Environmental Engineering, Sun Moon University, South Korea, Department of Convergence Materials Science and Engineering, Changwon National University, Korea*

### **S3-36-P**

#### **Synthesis and Characterization of ZnGa<sub>2</sub>O<sub>4</sub> Nanopowders by a Reverse Micelle Processing**

Ho-Jung Kim, Dong-Sik Bae, Jeong-Hun Son

*Department of Convergence Materials Science and Engineering, Changwon National Univ., Korea*

### **S3-37-P**

#### **Synthesis of Mono-dispersed Submicron Spherical Silica Particles by Sol-precipitation**

Dejun Zeng, Jianfeng Yang

*State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, China*

### **S3-38-P**

#### **Synthesis and Characterization of Sn Doped SiO<sub>2</sub> by Reverse Micelle and Sol-gel Process.**

Kwang-Jin Jeong, Dong-Sik Bae

*Changwon National University, Korea*

### **S3-39-P**

#### **Development of Dynamically-formed Membranes Using Nano-sized Colloidal Silica**

Yun-Jin Kim, Sangho Lee, Taekgun Yun, Jihee Han, JinSik Sohn, June-Seok Choi

*Kookmin University, Korea Institute of Construction Technology, Korea*

### **S3-40-P**

#### **Nano-scale Size Control in LED Color Organic Pigment**

An ba ryoung, Seong Soo Park, <sup>1</sup>Song Hyuk Kim, <sup>1</sup>Jea Hwan Kim, <sup>2</sup>Seong-Soo Hong, <sup>2</sup>Geun-Dae Lee,

*Dept. of Industrial & Applied Chemistry, Pukyung National University, Korea, <sup>1</sup> R & D Center, First Color Co. Led. <sup>2</sup>*

*Dept. of Industrial & Applied Chemistry, Pukyung National University, Korea*

### **S3-41-P**

#### **Effect of Surface Modification of TiO<sub>2</sub> nanoparticles on the Anticorrosive Properties of Epoxy Nanocomposite Coating**

Sang Jin Lee, Gun Dae Lee, Du-Chul Shin<sup>1</sup>, Seong Soo Park<sup>1</sup>, Seong Soo Hong<sup>2</sup>, Jong Myung Park<sup>3</sup>

*<sup>1</sup>Dept. Industrial chemistry, <sup>2</sup>Dept. Chemical Engineering, Pukyong National University, Korea, <sup>3</sup>Graduate Institute of Ferrous Technology, Pohang University of Science and Technology, Korea*

**S3-42-P****Preparation of Lanthanum Oxide Nanoparticles by Chemical Precipitation Method**

Qiuli Zhang, Zhenjiang Ji, Jun Zhou, Yonghui Song, Xinzhe Lan  
*Xi'an university of architecture and technology, China*

**S3-43-P****Synthesis of Sn Triflate Incorporated into Mesoporous Silica as Heterogeneous Lewis Acid Catalyst**

Hikaru Ikeda, Masaya Matsuoka, Masakazu Saito, Yu Horiuchi  
*Department of Applied Chemistry, Graduate School of Engineering, Osaka Prefecture University, Japan*

**S3-44-P****Synthesis of  $\text{Ni}_{0.25}\text{Mn}_{0.25}\text{Zn}_{0.50}\text{Fe}_2\text{O}_4$  Ferrite Nanoparticles via Low Temperature Combustion Reaction Route**

Xiaxia Liu, Jianfeng Zhu  
*Shaan Xi University of Science & Technology, China*

**S3-45-P****Microstructure Characterization of Mesoporous Materials by FE-SEM**

Wei Wu, Yi Zeng, Ziwei Liu, Jiajie Hua, Yongsheng Li  
*The State Key Laboratory of High Performance Ceramics and Superfine Microstructures, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China*

**S3-46-P****Effects of  $\beta\text{-Si}_3\text{N}_4$  Seeds Addition on Microstructure and Mechanical Properties of Porous  $\text{Si}_3\text{N}_4$  Ceramics**

Fangli Yu, Yu Bai, Pingping Yu, Jianzhi Wang, Jianfeng Yang  
*Xi'an Jiaotong University, China*

**S3-47-P****Preparation of Porous Alumina Powder Using Sol Containing Trehalose Dihydrate**

Takeshi Miki, Yutaka Tai  
*National Institute of Advanced Industrial Science and Technology (AIST), Japan*

**S3-48-P****Effect of Hollow Glass Distribution on the Physical Properties of Sintered Stainless Steel and Titanium Hydride Porous Composite Materials for Eco-materials**

Bunyod Allabergenov, Sung Jin Kim, Soo Jeong Jo, Amir Abidov, Oybek Tursunkulov, Eun Young Lee, Jeong Ae Park, Sung Bum Park, In Soo Kim  
*School of Advanced Materials and System Engineering, Kumoh National Institute of Technology, Korea*

**S3-49-P****Study on Microstructure and Mechanical Properties of Porous  $\text{Si}_3\text{N}_4$  Ceramics**

Fangli Yu, Yu Bai, Jun Du, Ping-ping Yu, Jian-zhi Wang, Jian-feng Yang  
*Xi'an Jiaotong University, School of Materials engineering, Yancheng Institute of Technology, Yancheng 224051, China; National Key Laboratory of Remanufacture, No.21, DuJiaKan, ChangXinDian, Beijing 100072, China*

**S3-50-P****Macroporous Mullite Composites Derived from Coal Fly Ash**

Yong Ho Park, Hong Chae Park  
*Pusan National University, Korea*

### **S3-51-P**

#### **UV-IR Simultaneously Absorbing Hybrid Materials**

Seong Jin Kim, Seong Soo Park, An Ba Ryong, Hye Hyeon Kim, Seong-Soo Hong, Geun-Dae Lee  
*Dept. of Industrial & Applied Chemistry, Pukyung National University, Korea*

### **S3-52-P**

#### **Nanocrystallization of Metal Phthalocyanine Material by Ball-Milling**

An Ba Ryong, Seong Soo Park, Seong Jin Kim, Song hyuk Kim, Seong-Soo Hong, Geun-Dae Lee  
*Dept. of Industrial & Applied Chemistry, Pukyung National University, Korea*

### **S3-53-P**

#### **Polymer Surface Texturing by using a Modified Dielectric Barrier Discharge**

JaeBeom Park, GeunYoung Yeom, Jong Sik Oh, Kyong Nam Kim  
*Sungkyunkwan University, Korea*

### **S3-54-P**

#### **Porosity: the Requirement for High Response in Nanostructured Gas Sensors**

Dojin Kim, Nguyen Minh Vuong, Hoang Nhat Hieu, Young Eon Ihm, Soon-Ku Hong  
*Chungnam national university, Korea*

### **S3-55-P**

#### **Research of Precast Reinforced Concrete Frame Column With Spiral Hoop Jointed by Encased Steel and Bolts**

Jin Li, Xiaojie Li, Qingning Li, Weishan Jiang  
*Xi'an University of Architecture and technology, China*

### **S3-56-P**

#### **The effect of Zn on the microstructure and optical properties of $Y_{0.94-x}Zn_xVO_4:Eu_{0.06}$**

J. Kim, Kyeongsoon Park, K. Y. Kim,  
*Sejong University, Korea*

### **S3-57-P**

#### **Microstructure and electrical conductivity of Cu/YSZ composites for solid oxide fuel cells**

J. Kim, Kyeongsoon Park, K. Y. Kim,  
*Sejong University, Korea*

### **S3-58-P**

#### **Microstructure and mechanical properties of SPSed Fe-based self-fluxing alloy matrix composites with TiC particles**

Sung Jin Park, Si Young Chang, Won Hee Lee  
*Kora Aerospace University, Graduate student, Kora Aerospace University, Gyeonggi-do, 412-791, Korea Department of Materials Engineering, Kora Aerospace University, Gyeonggi-do, 412-791, Korea Department of Advanced Materials Engineering, Sejong University, Seoul, 720-747, Korea*

### **S3-59-P**

#### **Fabrication and Characterization of Alumina/Zirconia Ceramic Compound**

Jihoon Chae, Bumrae Cho, Bolang Kim, Jongbong Kang  
*Keimyung University, Korea*

**S3-60-P****P-type NiO-AZO TCO sputtered thin film for GaN LED TCEs**

H.W. Park, P.K. Song, J.H. Bang, K.N. Hui

*Pusan National University, Korea*

**S3-61-I****Magnetic Property Change in NiFe<sub>2</sub>O<sub>4</sub> Nanosized Particles with Organic Molecule Layers**

H. Suematsu, R. Kurosawa, T. Suzuki, T. Nakayama and K. Niihara

*Extreme Energy-Density Research Institute, Nagaoka University of Technology, Nagaoka, Japan*

**S4: High performance materials****S4-01-I****Low-temperature and Rapid Fabrication of Nano-TiO<sub>2</sub> Ceramic**

Guiwu Liu, Wenzheng Jian, Haiyun Jin, Zhongqi Shi, Guanjun Qiao

*State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, China*

**S4-02-O****Preparation and Mechanism of Nano-TiO<sub>2</sub> Coatings on Poly (P-phenylene-benzobisoxazole) (PBO) Fiber**

Yanyan Luan, Xuefeng Liu, Zhannan Peng Jianxin Xie

*School of Materials Science and Engineering, University of Science of Technology Beijing, China*

**S4-03-I****Microwave Synthesis of Nano-structured Materials in Zn-Fe-O System**

Hirotsugu Takizawa, Satomi Katayose, Yamato Hayashi

*Tohoku University, Japan*

**S4-04-O****Effect of Sintering Agents on the Sintering and Physical Properties of ATO (Antimony- doped Tin Oxide)**

Ji Yeon Ryu<sup>1</sup>, Younghee Kim<sup>1</sup>, Yoon Joo Lee<sup>1</sup>; Kim, Soo Ryong<sup>1</sup>; Woo Teck Kwon,<sup>1</sup>; Heon Jin Choi<sup>2</sup>; Young Soo Lim<sup>1</sup>; Won Seon Seo<sup>1</sup>, *Kicet<sup>1</sup>, Yonsei University<sup>2</sup>, Korea*

**S4-05-O****Synthesis of Submicron Compact Spherical Silica Particles with High Purity and Uniform Size**

Dejun Zeng, Jianfeng Yang,

*State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, China*

**S4-06-I****Plasma Etching Behavior of Materials: Polycrystalline and Glass Materials**

Hyungsun Kim, Jungki Lee, Dongsun Kim, Sungmin Lee

*Inha University, Korea Institute of Ceramic Engineering and Technology, Korea*

**S4-07-I****Fabrication of Highly Dense Pure SiC Ceramics via the HTPVT Method**

Jianfeng Yang, Peiyun Dai, Bobo Liu and Yonggui Shi

*Xi'an Jiaotong University, China*

## **S4-08-O**

### **Behaviors of C/SiC Composite under Dynamic Oxidation Conditions**

Qian Feng, Zhen Wang, Ping He, Xiangyu Zhang, Le Gao, Yusheng Ding

*Analysis and testing center, Donghua University, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China*

## **S4-09-I**

### **Silicon Boride Ceramics such as a Silicon Compound**

Junichi Matsushita, Soo Wahn Lee<sup>1</sup>, Zhengyi fu<sup>2</sup>, Koichi Niihara<sup>3</sup>

*Department of Materials Science, Tokai University, Japan, <sup>1</sup>Department of Environment Engineering, Sun Moon University, Asan, Korea, <sup>2</sup>State Key Laboratory for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan, China, <sup>3</sup>Nagaoka University of Technology, Nagaoka, Japan*

## **S4-10-O**

### **Interface Structure and Formation Mechanism of BN/Intergranular Amorphous Phase in Pressureless Sintered Si<sub>3</sub>N<sub>4</sub>/BN Composites**

Yongfeng Li, Guanjun Qiao, Ping Liu, Xiangdong Wang, Haiyun Jin, Jianfeng Yang

*Department of Microelectronics, School of Electronic Engineering, Xi'an University of Posts and Telecommunications, State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, China*

## **S4-11-I**

### **Synthesis of SiC Powders and Whiskers by Microwave Heating**

Wenbin Cao, Jianlei Kuang

*Department of Inorganic Nonmetallic Materials, University of Science and Technology Beijing, China*

## **S4-12-I**

### **Fabrication of Complex-shaped SiC Parts based on Polymerization -induced Phase Separation**

Guanjun Qiao\*<sup>1</sup>, Guiwu Liu<sup>1</sup>, Qian Wang<sup>1</sup>, Jie Li<sup>1</sup>, Shunjian Xu<sup>1,2</sup>

*<sup>1</sup>State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, Xi'an, 710049, China. <sup>2</sup>Department of Solar Energy Science and Engineering, Xinyu University*

## **S4-14-I**

### **Investigation of Surface Free Energy for Development of High Performance Materials**

Dong-Yong Kim<sup>1</sup>, Young-Rae Cho<sup>1</sup>, Jung-Ho Han<sup>2</sup>, Hoi-Bong Kim<sup>1</sup>

*<sup>1</sup>Pusan National University, <sup>2</sup>Pukyong National University, Korea*

## **S4-15-O**

### **Effect of TiC Content on the Phase Composition of Ti<sub>3</sub>AlC<sub>2</sub>/Al<sub>2</sub>O<sub>3</sub> and Ti<sub>2</sub>AlC/Al<sub>2</sub>O<sub>3</sub> in situ Composites Synthesized by Hot Pressing**

Jianfeng Zhu, Lan Ye

*Shaanxi University of Science and Technology, China*

## **S4-16-I**

### **Synthesis of Al<sub>2</sub>O<sub>3</sub> Reinforced Ti<sub>2</sub>AlC Composites by in Situ Reaction Method**

Ruijuan Pan, Jianfeng Zhu

*Shaanxi University of Science and Technology, China*

## **S4-17-O**

### **Surface Hardening of H13 Steel by Shot Peening and Plasma Nitriding**

Kyuntaek Cho, Wonbeom Lee, Younsuk Jong, Youngkook Lee

*Korea Institute of Industrial Technology, Yonsei University, Korea*

**S4-18-I****Effect of NiCoCrAlY Morphology and Size Distribution on the Oxidation Behavior of Coating Deposited by Supersonic Atmospheric Plasma Spraying**

Yu Bai, Z.H. Han, H.Q. Li, C. Xu, Y.L. Xu, C.H. Ding and J.F. Yang  
*Xi'an Jiaotong University, School of Aerospace, China*

**S4-19-P****Study on Preparation of Nano-SiC Fibers by Template Method Based on Waste Cotton liner**

Tao Xue, Jiaguang Meng, Zhihao Jin  
*School of Textile and Materials, Xi'an Polytechnic University; Xi'an Jiaotong University, China*

**S4-20-P****Shot Peening Characteristics of Cold-rolled Pure Mo Sheet**

Gueserb Cho, Kyeonghwan Choe, Haguk Jeong and Wonbeom Lee  
*Korea Institute of Industrial Technology, Korea*

**S4-21-P****Effects of a ZnO Interlayer on the Barrier Properties**

Junyong Song, Sungryong Kim  
*Chungju National University, Korea*

**S4-22-P****Formation of Intermetallics in FeCoNiTi System Multi-component Alloys**

Hui Xie, Xiao Wang, Lei Jia, Zhenlin Lu, Yongzhen Zhang  
*Xi'an University of Technology, School of Materials Science and Engineering, Henan University of Science and Technology, China*

**S4-23-P****Microstructure and Mechanical Properties of Pressureless Sintered Si<sub>3</sub>N<sub>4</sub>/BN Composites**

Yongfeng Li, Guanjun Qiao, Ping Liu, Guiwu Liu, Zhongqi Shi, Jianfeng Yang,  
*Xi'an University of Posts and Telecommunications, Xi'an Jiaotong University, China*

**S4-24-P****Effect of Y on Microstructure of Cu-Zr-Ti Bulk Metallic Glasses**

Guorong Zhou, Bo-Young Hur, Xuezheng Yue  
*University of Jinan, I-Cube Center, School of Nano and Advanced Materials Engineering, Gyeongsang National University, Jinju, Gyeongnam, (660-701) South Korea.*

**S4-25-P****Fabrication of Translucent Si<sub>3</sub>N<sub>4</sub> Ceramics**

Wenwu Yang, Junichi Hojo, Miki Inada, Yumi Tanaka, Naoya Enomoto  
*Department of Chemistry and Biochemistry, Graduate School of Engineering, Kyushu University, Department of Applied Chemistry, Faculty of Engineering, Kyushu University, Japan*

**S4-26-P****In-site Microstructure Characterization on ZrO<sub>2</sub> Coating at High Temperature**

Jiajie Hua, Ziwei Liu, Yongzhe Wang, Chucheng Lin, Yi Zeng, Xuebing Zheng  
*Shanghai institute of ceramics, Chinese Academy of Sciences, The State Key Lab of High Performance Ceramics and Superfine Microstructure, Chinese Academy of Sciences Key Laboratory of Inorganic Coating Materials, Chinese Academy of Sciences, China*

#### **S4-27-P**

##### **Eco-friendly Electrochemical Process of Nano-scale Copper Interconnects for Integrated Silicon Devices**

Byoungyong Im, Sunjung Kim, Kyesun Park  
*University of Ulsan, LS-Nikko Copper Inc., Korea*

#### **S4-28-P**

##### **The Dynamic Recrystallization of Hot-deformed Austenite in a Micro-alloyed Steel**

Yuan She, Zhaohui Zhang  
*Xi'an University of Architecture and Technology, China*

#### **S4-29-P**

##### **Synthesis and Adhesion Properties of Silane- and Thiol- modified Polyurethane Acrylates**

Hyunhee Chae, Youngson Choe, Seok Kim, Sunghoon Park, Youngson Choe†  
*Pusan National University, Korea*

#### **S4-30-P**

##### **Effect of Electromagnetic Stirring on the Microstructure and Mechanical Properties of the High Speed Steel**

Congrong Zhong, Jingwang Jun, Yangjie Dong  
*Xi'an University of Architecture and Technology, China*

#### **S4-31-P**

##### **Preparation and Properties of LiFePO<sub>4</sub>/C using Fe<sub>2</sub>O<sub>3</sub> as starting material**

Qiang Ren, Xiulan Wu, Yang Yang, Xiulan Wu  
*Shaanxi University of Science and Technology, China*

#### **S4-32-P**

##### **Synthesis and analysis of infrared reflecting materials**

Sungsoo Park, Daehee Son, Hundong Lee, Seungyup Jeon  
*Pukyong National University, CFC teramate Co., Ltd. , Korea*

#### **S4-33-P**

##### **Molten Salt Synthesis of Mullite Whiskers from Silicon Carbide Precursor**

Wei Wang, Guiwu Liu, Guanjun Qiao, Jianfeng Yang, Hongwei Li, Yajie Guo  
*Department of Chemical Engineering, College of Environment Science and Engineering, Chang'an University, Xi'an 710054, China, State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, Xi'an 710049, China, College of Materials Science and Engineering, Chang'an University, Xi'an 710061, China*

#### **S4-34-P**

##### **Ion Conductivity Enhancement of Poly(ethylene oxide) based Electrolytes incorporating Alkyl-imidazolium-cation Salts**

Seok Kim, Youngson Choe, Juhyun Kim, Sung Hoon Park  
*Pusan National University, Korea*

#### **S4-35-P**

##### **Thermal Shock Resistance and Mechanical Properties of TiO<sub>2</sub> Added Al<sub>2</sub>O<sub>3</sub>/ZrO<sub>2</sub>/h-BN Ceramic Composite**

Hyungsuk Kim, Soowohn Lee, Hyunhwi Lee  
*Research Center for Eco Multi-Functional Nano Materials, Sun Moon University, Korea*

**S4-36-P****Development of Electroless Nickel Deposits with High Ductility**

Junmi Jeon, Hongkee Lee, Honyun Lee, Minhyung Lee, Jinyoung Hur  
*Korea Institute of Industrial Technology, Korea*

**S4-37-P****Influence of High Temperature Oxidation Process on the Surface Phase Composition and Microstructure of the B<sub>4</sub>C/BN Composites Fabricated by Hot-pressing Process**

Tao Jiang, Haiyun Jin

*School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an 710065, People's Republic of China, State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an 710049, People's Republic of China*

**S4-38-P****Effects of Dipping Heat Treatment on the Oxidation and Thermal Shock Properties of Pressureless Sintered SiC/graphite Machinable Ceramics**

Wanli Yang, Guanjun Qiao, Zhongqi Shi, Zhihao Jin

*State Key Laboratory for Mechanical Behavior of Materials, School of Material Science and Engineering, Xi'an Jiao Tong University, China*

**S4-39-P****Microstructure Evolution During Combustion Synthesis of Ni/Ni-aluminide Laminated Composites**

Yajie Guo, Zhongqi Shi<sup>b</sup>, Haiyun Jin<sup>c</sup>, Guanjun Qiao<sup>b</sup>

*School of Materials Science and Engineering, Chang'an University, <sup>b</sup>State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, Xi'an 710049, China <sup>c</sup>School of Electrical Engineering, Xi'an Jiaotong University, Xi'an 710049, China*

**S4-40-P****Structure Transition of Fe-Si Mixtures in High-energy Ball Milling and Annealing**

Hongwei Li, Gangqiang Geng, Yajie Guo, Wei Wang

*Chang'an University, China*

**S4-41-P****Corrosion of Low Carbon Steel Weldment in NaCl and H<sub>2</sub>S Water Solutions**

Seulki Kim, Dongbok Lee, Minjung Kim, Chunyu Xu

*Sungkyunkwan University, Korea*

**S4-42-P****Effect of Fe and Mn Contents on the Morphology of Iron-containing Intermetallics in Hypereutectic Al-Si Casting Alloy**

Bonghwan Kim, Sangmok Lee

*Korea Institute of Industrial Technology, Korea.*

**S4-43-P****Effect of Sintering Temperature on the Microstructure and Electrical Properties of SnO<sub>2</sub>-based Varistors**

Jianfeng Zhu, Guangliang Hu

*Shaanxi University of Science & Technology, China*

#### **S4-44-P**

##### **Effect of Calcination Process of the Raw Materials on the Microstructure and Electrical Properties of ZnO-based Linear Resistance Ceramics**

Jianfeng Zhu, Yong Zhou  
*Shaanxi University of Science & Technology, China*

#### **S4-45-P**

##### **Wiggler shape effect of a miniaturized the free electron laser module**

Y C Kim, Seungjoon Ahn, Seong Joon Ahn, Ho Seob Kim, Dae-Wook Kim  
*Department of Optometry, Eulji University, 212 Yangji-dong, Sujeong-gu, Seongnam-si, Gyeonggi-do, 461-713, Department of Information Display, Sun Moon University, Tangjeong-myeon, Asan-si, Chungnam 336-708, Department of I&C Engineering, Sun Moon University, Tangjeong-myeon, Asan-si, Chungnam 336-708, Department of Information Display, Sun Moon University, Tangjeong-myeon, Asan-si, Chungnam 336-708*

#### **S4-46-P**

##### **Microwave-synthesized Silver-H<sub>2</sub>Ti<sub>3</sub>O<sub>7</sub> Nanotubes from Silver Nanocrystalline TiO<sub>2</sub>: Physicochemical and Photocatalytic Properties**

L. M. Lozano Sanchez, V. Rodriguez Gonzalez (1), S. Obregon Alfaro (2), Sung Hun Cho (3), Soo Wahn Lee (3), Tohru Sekino (4)  
*Ipicyt, (1)Advanced Materials Department. Institute for Scientific and Technological Research at San Luis Potosi, Mexico (Ipicyt). (2)Institute of Materials Science of Seville. University of Seville. (3)Global Research Laboratory, Sun Moon University. (4)IMRAM, Tohoku University, Japan.*

#### **S4-47-P**

##### **Structure and Properties in the CdO-B<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub> Glass System**

Taehee Kim, Bongki Ryu  
*Department of Material Science and Engineering, Pusan national university, Korea*

#### **S4-48-P**

##### **Structure and Properties of Tin Borophosphate Glass.**

Donghwan Kim, Donggun Gwoo, Taehee Kim, Jonghwan Kim and Bongki Ryu,  
*Pusan National University, Korea*

#### **S4-49-P**

##### **Conducting Polymer Actuator with a Linear Movement**

Namju Jo, Hyunju Bak, Yejin Cho  
*Pusan National University, Korea*

#### **S4-50-P**

##### **The Composition Analysis of Thermal Barrier Coatings Deposited by Supersonic Atmospheric Plasma Spraying System**

J.J. Tang, Z.Z. Han, Y. Bai, J.F. Yang  
*Xi'an Jiaotong University, China*

#### **S4-51-P**

##### **The effect of additives on the mechanical properties of rigid polyurethane**

Hwanho Choi, Changsik Ju, Seokeun Na, Siyoung Kim  
*Pukyong National University, Korea*

**S4-52-P****Study on Drawing Processes and Property of 316L Extra Fine Stainless steel Wires**

Shifeng Liu, Ping Xu, *Bojian Wang*  
*Xi'an University of Architecture and Technology, China*

**S4-53-P****Enhanced reflectance efficiency using  $\text{Ag}_x\text{Cu}_{1-x}$  alloys for GaN vertical light emitting diode**

Tae Hyung Kim, Geun Young Yeom, Jung Oun Bae, Kyong-Nam Kim  
*Sungkyunkwan University, Sungkyunkwan University*

**S4-54-P****Electric Conductivities of the  $\text{Na}_2\text{O-V}_2\text{O}_5\text{-P}_2\text{O}_5$  Glass System**

Donggun Gwoo, BongKi Ryu  
*PNU, Korea*

**S4-55-P****Microstructure and optical characteristic of the  $\text{CdO-B}_2\text{O}_3\text{-SiO}_2$  glass in the region of phase separation**

BongKi Ryu, Taehee Kim, Donghwan Kim, Donggun Gwoo, Chawon Hwang  
*Division of Materials Science and Engineering, Pusan National University Korea*

**S5: Biomaterials****S5-01-I****Silicate Bioceramics Induce Angiogenesis During Bone Regeneration**

Wanyin Zhai, Jiang Chang, Hongxu Lu, Guoping Chen  
*Shanghai Institute of Ceramics, CAS, China. Biomaterials Center, National Institute for Materials Science, 1-1 Namiki, Tsukuba, Ibaraki, 305-0044, Japan.*

**S5-02-P****Bio-Inspired Synthesis Of  $\text{Al}_2\text{O}_3$ /Polymer Composite**

Kyung Mok Nam, Younghee Kim, Yoon Joo Lee, Soo Ryong Kim, Woo Teck Kwon  
*Korea Institute of Ceramic Engineering and Technology, Korea*

**S5-03-P****Fabrication and Heat Treatment Influence on Fe Nanowires Structure and Iron-chitosan Nanoparticles for Biomedical Application**

Oybek Tursunkulov, Soo Jeong Jo, Abidov Amir, Eun Young Lee, Jeong Ae Park, Seungjin Yoon, Soon-Wook Jeong and Sungjin Kim\*  
*School of Advanced Materials and System Engineering, Kumoh National Institute of Technology, 1 Yangho-dong, Gumi, 730-701, Korea*

**S5-04-P****Porous Hydroxyapatite/calcium Phosphate Scaffolds Processed Using a TBA-based Freeze-gelcasting/polymer Sponge Technique**

Joo Hyeok Lee, Hong Chae Park, Seog Young Yoon  
*Pusan National University, Korea*

### **S5-05-P**

#### **TBA-based Freeze/gelcasting of Porous Hydroxyapatite Scaffolds with Calcium Phosphate Glass-ceramics Addition**

Hong Jun Choi, Hong Chae Park, Seog Young Yoon  
*Pusan National University, Korea*

### **S5-06-P**

#### **Effect of Glass Infiltration on Zirconia to Improve Shear Bond Strength with Dental Resin Cement**

Yongzhe Wang, Fujiang Zhang  
*Shanghai institute of ceramics, Shanghai Jiao tong University School of Medicine, China*

### **S5-07-P**

#### **A Unified Model for Electrochemical-mechanical Behaviors of Ionic Polymer Actuators**

Kang Sung Soo  
*Jeonju University, Korea*

### **S5-08-P**

#### **Synthesis of Glycerol Carbonate by Transedterification of Glycerol with Urea over Zn/Al Mixed Oxide**

Jaeho Baek, Man Sig Lee, Young Bok Ryu<sup>1</sup>, Myung Hwan Kim<sup>1</sup>, Myung Jun Moon<sup>2</sup>  
*Green Technology Center, Korea Institute of Industrial Technology(KITECH), <sup>1</sup>Green Technology Center, Korea Institute of Industrial Technology(KITECH), <sup>2</sup>Department of Industrial Chemistry, Pukyong National University, Korea*

### **S5-09-P**

#### **Modified Distillers' Grains by Microwave-assisted Pyrolysis for Cu<sup>2+</sup> Ions Absorption from Aqueous Solution**

Rongrong Su, Xiaoyan Lin, Yan Chen, Xiaoyan Lin, Juan Feng, Xueguang Luo  
*Engineering Research Center for Biomass Materials, Ministry of Education, School of Materials Science and Engineering, Southwest University of Science and Technology, China*

### **S5-10-P**

#### **Synthesis of Glycerol Carbonate from Biomass Glycerol : Focus on the Calcined Temperature**

Young Bok Ryu, Man Sig Lee, <sup>a</sup>Jaeho Baek, <sup>b</sup>Sun do Lee, <sup>c</sup>Yang Do Kim  
*Department of Materials Science and Engineering, Pusan National University, Korea Institute of Industrial Technology(KITECH), <sup>a</sup>Korea Institute of Industrial Technology(KITECH), <sup>b</sup>ZEUS OIL & CEHMICALS CO., LTD., <sup>c</sup>Department of Materials Science and Engineering, Pusan National University, Korea*

### **S5-11-P**

#### **Preparation and Microstructure of Biomorphic Hydroxyapatite Using Extracted Beech Wood Template**

Hou Guang Ya<sup>1</sup>, Jin Zhi Hao<sup>2</sup>, Qian Jun Min<sup>2</sup>, Zheng Guo Qu<sup>1</sup>  
*College of chemical Engineering and materials Science, Zhejiang University of Technology, <sup>2</sup> State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, Xi'an 710049, P. R. China*

### **S5-12-P**

#### **Microstructure Evolution During Combustion Synthesis of Ni/Ni-aluminide Laminated Composites**

Yajie Guo, Zhongqi Shi, Guiwu Liu, Haiyun Jin, Guanjun Qiao  
*School of Materials Science and Engineering, Chang'an University, State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, Xi'an 710049, China; School of Electrical Engineering, Xi'an Jiaotong University, Xi'an 710049, China*

**S5-13-P****Preparation of Antibody conjugated LMWSC-PX-PEG for Breast Cancer Therapy by using Herceptin**

Joung-Pyo Nam, Mi-Kyeong Jang, Jae-Woon Nah

*Department of Polymer Science and Engineering, Sunchon National University, Department of Polymer Science and Engineering, Sunchon National University, Korea*

**S5-14-P****Characterization of Thermosensitive Nanoparticle using Deoxycholic acid modified Chitosan oligosaccharide-g-PEG PPG**

Jae-Woon Nah, Mi-Kyeong Jang

*Department of Polymer Science and Engineering, Sunchon National University, Department of Polymer Science and Engineering, Sunchon National University, Korea*

**S5-15-P****Synthesis and Characterization of Core-crosslinked Polymeric Micelles for Cancer Drug Delivery System**

Mi-Kyeong Jang, Jae-Woon Nah

*Department of Polymer Science and Engineering, Sunchon National University, Korea*

**S5-16-P****Effect of Oxygen Working Pressure on Structural and Optical Properties of TiO<sub>2</sub> Films Grown on Glass Substrate**

Min Wook Pin, Won Jae Lee

*Donggeui University, Korea*

**S6: Energy related materials, carbon materials****S6-01-I****Properties of Organic Solar Cells with PCDTBT:PCBM Active Layer**

Kun Ho Kim, Ho Jung Chang, Jae Young Choi, Seong Kyu Jang

*Department of Electronics Engineering, Dankook University, Korea*

**S6-02-O****Preparation of Hydrogenated Amorphous Silicon and Silicon Carbon Nano-films and Its Application on p-i-n Junction Solar Cells**

Yi Qin, Jianfeng Yang

*State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, China*

**S6-03-O****Large area Dye-Sensitized Solar Cell Based on Nitrogen-Doped TiO<sub>2</sub> Powders Prepared by Hydrothermal Method**

Wenxiu Liu, Wenbin Cao, Zaiqiang Feng

*University of Science and Technology Beijing, North China University of Water Resource and Electric, China*

**S6-04-I****Novel Sulfonated Poly(ether sulfone)s Containing Conjugated Monomer for Fuel Cell Membrane Application**

Youngdon Lim, Whangi Kim, Dongwan Seo, Soonho Lee, Md. Awlad Hossain, Md. Monirul Islam,

*Konkuk University, Korea*

## **S6-05-O**

### **Influence of Composition of Gd-doped Ceria Electrolyte on Performance of Solid Oxide Fuel Cell**

Yuta Ibusuki, Yoshihiro Hirata, Soichiro Sameshima, Naoki Matsunaga  
*Kagoshima University, Japan*

## **S6-06-I**

### **Enhancing Hydrogen-Generation Performance of $\gamma$ -Al<sub>2</sub>O<sub>3</sub> Modified Al Powder by New Processing Routes**

Wenhui Liu, Zhenyan Deng, Weizhuo Gai  
*Shanghai University, China*

## **S6-07-O**

### **Synthesis of Carbon Nanotubes by CVD Using Gold-nickel Alloy Nanoparticles as Catalyst**

Sandip Vinayak Purane, Makoto Nanko  
*Nagaoka University of Technology, Japan.*

## **S6-08-P**

### **Thermoelectric Properties of Solid-State-Synthesized Magnesium Silicides Doped with Group B<sup>I-III</sup> Elements**

Sin-Wook You, Il-Ho Kim, Kyung-Wook Jang<sup>2</sup>, Soon-Mok Choi<sup>3</sup>, Won-Seon Seo<sup>3</sup>, Sun-Uk Kim<sup>4</sup>, Jung-Il Lee<sup>1</sup>, Soon-Chul Ur<sup>1</sup>

*Chungju National University, <sup>1</sup>Department of Materials Science and Engineering / RIC-ReSEM, Chungju National University, Chungju, Chungbuk 380-702, Korea <sup>2</sup>Department of Advanced Materials Engineering, Hanseo University, Seosan, Chungnam 356-706, Korea <sup>3</sup>Green Ceramic Division, Korea Institute of Ceramic Engineering and Technology, Seoul 153-801, Korea <sup>4</sup>Functional Materials Research Department, Research Institute of Industrial Science and Technology, Pohang, Gyeongbuk 790-330, Korea*

## **S6-09-P**

### **Thermally Coupled Distillation Process for Liquid Petroleum Gas recovery**

Uwitonze Hosanna, Kyu Suk Hwang, Amit Goyal, Minchul Ha, Dae Won Park  
*Pusan National University. Korea*

## **S6-10-P**

### **Fabrication of Novel Ag-Paste and Evaluation of Its Electrical Properties in Bulk-Si Solar Cell**

Ji-Hyun Jeong, Soon-Yong Kweon, Sung-Jin Kim, Chang-Rok Son, Soon-Chul Ur  
*Chungju National University, Zenixon Co., Ltd, Korea*

## **S6-11-P**

### **Post-annealing Effect on Dye-sensitized Solar Cell Efficiency of TiO<sub>2</sub> Films Formed on FTO/glass by Atomic Layer Deposition**

Kyun Ahn, Chae-Ryong Cho, De Pham-Cong<sup>1</sup>, Se-Hun Kwon<sup>2</sup>  
*Pusan National University, <sup>1</sup>Department of Nano Fusion Technology and College of Nanoscience and Nanotechnology, Pusan National University, Miryang 627706, Rep. of Korea <sup>2</sup>National Core Research Center, Pusan National University, Pusan 609735, Rep. of Korea*

## **S6-12-P**

### **Dye Sensitized Solar Cells Based on ZnO Nanorods / TiO<sub>2</sub> Nanoparticles Composite Films**

Hui Tong, Junichi Hojo, Miki Inada, Yumi Tanaka, Naoya Enomoto  
*Department of Chemistry and Biochemistry, Graduate School of Engineering, Kyushu University, Department of Applied Chemistry, Faculty of Engineering, Kyushu University, Japan*

**S6-13-P****Fabrication of TiO<sub>2</sub> Paste for Flexible Dye-sensitized Solar Cells**

Amir Abidov, Christian Gomez<sup>b</sup>, Soojeong Jo, Oybek Tursunkulov, Young Cheol Lee, Jeong Hwan Lee, Do-Kyung Lee<sup>a</sup>, Soon-Wook Jeong<sup>a</sup> and Sungjin Kim.

*Kumoh National Institute of Technology, School of Advanced Materials and System Engineering, Kumoh National Institute of Technology, 1 Yangho-dong, Gumi, 730-701, Korea. <sup>a</sup>Gumi Electronic and Information Research Center, Gumi, 730-031, Korea. <sup>b</sup>Facultad de Ciencias Quimicas, Universidad Autonoma de San Luis Potosi, Av. Manuel Nava #6, San Luis Potosi, S.L.P. 78290 Mexico.*

**S6-14-P****Efficiency Improvement of Organic-inorganic Photovoltaic Cells Using by ZnO and Graphene Based Scaffold**

Soo Jeong Jo, Sungjin Kim, Amir Abidov, SangYup kim, Li Li He, Jeong Ae Park, Jaejin Song\*. Heung Woo Jeon\*\*  
*School of Advanced Materials and System Engineering, Kumoh National Institute of Technology, , Korea \*Institute of Packaging of Electronic Device, Korea Electronic Company, Korea \*\*School of Electronic Engineering, Kumoh National Institute of Technology, , Korea*

**S6-15-P****Evaluation of Pt-Based Electrocatalyst for Ammonia Electrocatalytic Oxidation in Acid Electrolyte and Applied Fuel Cell Studies**

Changmao Hung

*Department of Recycle Engineering, Yung-Ta Institute of Technology & Commerce, Taiwan, China*

**S6-16-P****Surface-enhanced Raman Spectra of Individual Multiwalled Carbon Nanotube and Carbon Nanowire**

Xinluo Zhao, Xiaoning Hou, Leimei Sheng, Yoshinori Ando

*Department of Physics, Shanghai University, China, Meijo University, Japan*

**S6-17-P****A Study on Fabrication, Dispersion and Surface Coating of Nano Carbon for MgO-C Refractories**

Kwang-Jin Jeong, Dong-Sik Bae, Jeong-Hun Son

*Changwon National University, Korea*

**S6-18-P****Development of Nano-carbon Bulky-Paper Membranes for Membrane Distillation**

Seung-Min Park, Sangho Lee, Jae-Wuk Koo, Yong-Jae Kim, Jihee Han

*Kookmin University, Korea*

**S6-19-P****Electrical Properties of Sn-Ag-Cu-In-Bi Solder for Silicon Solar Cells**

Hyug Jong Kim, Byung Ho Choi, Jin Sik Kim, Hyo Jae Kim, Beom Jun Kim, Jae Seung Roh

*School of advanced Materials & System Engineering, Kumoh National Institute of Technology, Korea*

**S6-20-P****Electrical Properties of the Interconnected Copper Ribbon for Silicon Solar Cells**

Hyug Jong Kim, Byung Ho Choi, Jin Sik Kim, Hyo Jae Kim, Young Hyung Kim

*School of Advanced Materials and Systems Engineering, Green Energy System Education Center, Korea*

### **S6-21-P**

#### **Electrical Properties of Boronated Tetrahedral Amorphous Carbon Films**

Xiaoyan Wang, Yongfeng Kang, Liang Han, Xian Chen, Baonian Zhang, Xin Yang  
*Xi'an Jiaotong University, China*

### **S6-22-P**

#### **Simulation Study on the Proton Radiation Resistance of Tetrahedral Amorphous Carbon Films**

Yanwu Wang, Yongfeng Kang, Xin Liu, Baolian Zhang, Xian Chen, Xin Yang, Yuqing Zhao,  
*Xi'an Jiaotong University, China*

### **S6-23-P**

#### **Ta-C films for the suppression of the Secondary Electron Emission**

Yongfeng Kang, Xiaoyan Wang, Xian Chen, Yanwu Wang, Yuqing Zhao  
*Xi'an Jiaotong University, China*

### **S6-24-P**

#### **Synthesis and Characterization of Sulfonated Poly(diphenyl ether ketone sulfone)s Containing Dibenzoylebenzene Moiety for Proton Exchange Membrane Fuel Cell**

Hossain Mohammad Awlad, Whangi Kim, Young Don Lim, Dong Wan Seo, Soon Ho Lee, Hyunchul Lee, Ho Hyoun Jang, Md. Monirul Islam  
*Konkuk University, Korea*

### **S6-25-P**

#### **Nano Composite Membranes of Sulfonated Poly(ether sulfone)s Containing DHTPE and SiO<sub>2</sub> for PEMFC**

Youngdon Lim, Whangi Kim, Dongwan Seo, Soonho Lee, Md. Awlad. Hossain, Hyunchul Lee  
*Konkuk University, Korea*

### **S6-26-P**

#### **Synthesis and Characterization of Upconversion Photoluminescence Yb<sup>3+</sup>, Er<sup>3+</sup> Co-doped SrMoO<sub>4</sub> Particles via a Microwave-Assisted Metathetic Route**

Chang Sung Lim, (b) Tae Hyung Heo, Jun Ho Chung (c) Jeong Ho Ryu  
*Department of Advanced Materials Science & Engineering, Hanseo University, Seosan 356-706, Korea, Hanseo University, (b) Department of Materials Science and Engineering, Hanyang University, 17 Haengdang-dong, Seongdong-gu 133-791, Korea (c) Department of Materials Science and Engineering, Chungju National University, 50 Daehak-ro, Chungju-si, Chungbuk 380-702, Korea*

### **S6-27-P**

#### **Development of a Thermoelectric Power Generate Module with Mg<sub>2</sub>Si-MnSi<sub>1.73</sub>**

Teppei Tsuzuki, Hitoshi Abe, Makoto Nanko, Masatoshi Takeda  
*Nagaoka University of Technology, Japan*

### **S6-28-P**

#### **Thermochemical Reduction Synthesis of Fe<sub>2</sub>P<sub>2</sub>O<sub>7</sub> Nanostructures as for Li Ion Battery Electrode**

Gwang-Hee Lee, Dong-Wan Kim  
*Department of Materials Science and Engineering, Ajou University, Korea*

**S6-29-P****Research on Electrothermal Properties of a Composite Carbon Fiber Paper**

Jun Zhou, Lei Wu, Xinzhe Lan, Qiuli Zhang, Xiangyang Chen

*School of Metallurgical Engineering, Xi'an University of Architecture and Technology, Shaanxi Province Metallurgical Engineering and Technology Research Centre, China*

**S6-30-P****Research Progress on Production Process of Bluecoke with Low Temperature Carbonization**

Lei Wu, Jun Zhou, Xinzhe Lan, Xichen Zhao, Yonghui Song, Yuhong Tian

*School of Metallurgical Engineering, Xi'an University of Architecture and Technology, Shaanxi Province Metallurgical Engineering and Technology Research Centre, China*

**S6-31-P****Thermal Decomposition Characteristics of  $Mg(NO_3)_2 \cdot 6H_2O$  and  $MgCl_2 \cdot 6H_2O$  Composite as Phase Change Material**

Qing Ding, Xuegang Luo, Xiaoyan Lin, Hongping Zhang

*Engineering Research Center of Biomass Materials of Education Ministry Southwest University of Science and Technology, China*

**S6-32-P****Effects of Ion-beam Irradiation on  $TiO_2$  Film to Reduce Vacancies and to Improve the Performance of Dye-sensitized Solar Cell**

Young Hui Koh, Sung Ryong Kim, Jun Yong Song, Mohammad Al-Mamun

*Chungju National University, Korea*

**S6-33-P****Effect of Crystallization in Glass on the Contacts Between Ag Electrodes and Si Solar Cells Under Fast Firing**

Seunggon Choi, Hyungsun Kim, Dongsun Kim

*School of Materials Engineering, Inha University, Korea*

**S6-34-P****Hydrogenated Amorphous Silicon Carbon Films as Intrinsic Layer for Potential p-i-n Junction Solar Cells**

Yi Qin, Jianfeng Yang

*State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, China*

**S6-35-P****CdTe p-type Semiconductor-Gel Polymer Composited Electrolyte for Dye Sensitized Solar Cells (DSSCs)**

Wonchai Promnopas, Somchai Thongtem, Titipun Thongtem

*Department of Physics and Materials Science, Faculty of Science, Department of Chemistry, Faculty of Science, Chiang Mai University, Chiang Mai 50200, Thailand*

**S6-36-P****Low emissive property of oxide multilayer coating with Ag metal**

Sang Yeol Lee

*Department of Semiconductor Engineering, Cheongju University, Korea*

