

**Program Book**

# **ISNNM-2012**

**12<sup>th</sup> International Symposium on Novel and Nano Materials**

**August 26(Sun) ~ 30(Thu), 2012**

**Istanbul, Turkey**

**ISNNM-2012**

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12<sup>th</sup> International Symposium on Novel and Nano Materials

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<http://www.isnnm.org>

## Program Book

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# Contents

1. Welcome Message .....	5
2. Organizing Committee .....	6
3. Program .....	9
4. Opening Speeches.....	10
5. Plenary Lecture.....	10
6. Invited Lecture.....	11
7. Technical Program.....	14



# 1. Welcome Message

The 12<sup>th</sup> International Symposium on Novel and Nano Materials(ISNNM) will focus on the overall nanomaterials researches such as Advanced Powder Metallurgy, Advanced Material Processing, Novel Functional Materials, Nanocomposites & Nanoporous materials, Energy & Nuclear Materials, Characterization & Modeling, Resources & Recycling, Rare Metals and Mechanical Alloying & Mechanochemistry. All main aspects of these materials will be covered, including synthesis, mechanism, microstructures, properties and applications. The symposium will provide the latest research results and a state-of-the-art overview of technology in the exciting and rapidly evolving field of nanomaterials. Symposium sessions will also include invited lectures from internationally distinguished scientists discussing topics ranging from the most recent discovered materials to the latest techniques of production. Manufacture's contributions and exhibits are welcome to promote further interaction between the scientists and the industry. Registration and contributions for the Symposium in the form of oral or poster presentations are warmly invited and is open to all. Selected papers will be published in SCI/SCIE journal after peer review.

*Yoo-Dong Hahn*

*Byoung Kee Kim*

*Gultekin Goller*

*Sadriye Kucukbayrak-Oskay*

Chairmen of Organizing Committee  
International Symposium on Novel and Nano Materials

## 2. Organizing Committee

### General Chair

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<b>Byoung Kee Kim</b>	Univ. of Ulsan
<b>Yoo-Dong Hahn</b>	Korea Institute of Materials Science
<b>Gultekin Goller</b>	Istanbul Technical Univ.
<b>Sadriye Kucukbayrak-Oskay</b>	Istanbul Technical Univ.

### International Advisory Committee

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<b>In-Shup Ahn</b>	Gyungsan Nat'l Univ.
<b>Jong San Chang</b>	Korea Research Institute of Chemical Technology
<b>Wen-Cheng Chang</b>	Chung Cheng Nat'l Univ.
<b>Hyung-Sik Chung</b>	Ajou Univ.
<b>S. X. Dou</b>	Wollongong Univ.
<b>Hong Gao</b>	Dalian Jiaotong Univ.
<b>C. Hakan Gur</b>	Middle East Technical Univ.
<b>Sebahattin Gurmen</b>	Istanbul Technical Univ.
<b>Soon Hyung Hong</b>	Korea Advanced Institute of Science and Technology
<b>K. S. Hwang</b>	Taiwan Nat'l Univ.
<b>Eugene Ivanov</b>	Tosoh SMD
<b>Sung Hwa Jhung</b>	Kyungbuk Nat'l Univ.
<b>Suk-Joong L. Kang</b>	Korea Advanced Institute of Science and Technology
<b>Deug Joong Kim</b>	Sungkyunkwan Univ.
<b>Whung Whoe Kim</b>	Korea Atomic Energy Research Institute

Ji-Soon Kim	Univ. of Ulsan
Young-Soon Kwon	Univ. of Ulsan
Jai-Sung Lee	Hanyang Univ.
M. L. Ovecoglu	Istanbul Technical Univ.
Tayfur Ozturk	Middle East Technical Univ.
Sang Eon Park	Inha Univ.
Soo Jin Park	Inha Univ.
Jong Ku Park	Korea Institute of Science and Technology
In-Jin Shon	Chonbuk Nat'l. Univ.
Servet Timur	Istanbul Technical Univ.
Mustafa Urgan	Istanbul Technical Univ.
Guoxiu Wang	Univ. of Technology Sydney
Xiaolin Wang	Wollongong Univ.
Ali Kalkanli	Middle East Technical Univ.
Vedat Akdeniz	Middle East Technical Univ.
Macit Ozenbas	Middle East Technical Univ.
Mehmet Turker	Gazi Univ.

Secretary General

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Burak Ozkal	Istanbul Technical Univ.
Chang Kyu Rhee	Korea Atomic Energy Research Institute



### Steering Committee

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Jung-Ho Ahn	Andong Nat' l. Univ.
Si-Young Chang	Korea Aerospace Univ.
Tae Suk Jang	Sunmoon Univ.
In Bum Jeong	Changsung Corp.
Young Do Kim	Hanyang Univ.
H. Emrah Unalan	Middle East Technical Univ.

### Technical Committee

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Jae-Pyoung Ahn	Korea Institute of Science and Technology
Yong Ho Choa	Hanyang Univ.
Caner Durucan	Middle East Technical Univ.
Hyun Seon Hong	Institute for Advanced Engineering
Soon-Jik Hong	Kongju Nat' l. Univ.
Kursat Kazmanli	Istanbul Technical Univ.
Hwi Jun Kim	Korea Institute of Industrial Technology
Jin-Chun Kim	Univ. of Ulsan
Taek-Soo Kim	Korea Institute of Industrial Technology
Kee Ahn Lee	Andong Nat' l. Univ.
Min Ku Lee	Korea Atomic Energy Research Institute
Sung Tag Oh	Seoul Sci. Tech Univ.
Ji Hun Yu	Korea Institute of Materials Science

12<sup>th</sup> International Symposium on Novel and Nano Materials

## 3. Program

	2012-08-26 (Sun)	2012-08-27 (Mon)		2012-08-28 (Tue)		2012-08-29 (Wed)		2012-08-30 (Thu)	
	Room A&B	Room A	Room B	Room A	Room B	Room A	Room B	Room A	Room B
09:00~10:00		Registration (09:00~16:00)		Registration (09:00~16:00)		Registration (09:00~16:00)		Nano composites and Nanoporous materials (I19~I21, A22) (09:00~10:20)	Resources & Recycling (B20~B23) (09:00~10:20)
10:00~10:30		Plenary Lecture (Prof. Suk-Joong L. Kang)		Plenary Lecture (Dr. Eugene Ivanov)		Plenary Lecture (Prof. M.L.Ovecoglu)			
10:30~10:50		Coffee Break		Coffee Break		Coffee Break		Nano composites and Nanoporous materials (I22, A23) (10:20~11:10)	Energy & Nuclear Materials (B24~B26) (10:20~11:10)
10:50~12:10		Advanced Material Processing (I1~I2, A1~A2)	Mechanical Alloying & Mechano chemistry (I6~I7, B1~B2)	Advanced Powder Metallurgy (I11, A7~A10)	Energy & Nuclear Materials (I12, B9~B12)	Advanced Powder Metallurgy (A11~A14)	Energy & Nuclear Materials (I14, B14)		
12:10~13:00		Lunch		Panel Discussion (Advanced Powder Metallurgy)	Panel Discussion (Energy & Nuclear Materials)	Lunch		Technical Tour	
13:00~14:20		Rare Metals (I3~I4, A3~A4)	Resources & Recycling (I8~I9, B3~B4)	Panel Discussion (Mechanical Alloying & Mechano chemistry)	Panel Discussion (Advanced Material Processing)	Advanced Material Processing (A15~A17)	Novel Functional Materials (I15~I16, B15~B16)		
14:20~14:40		Coffee Break		Coffee Break		Coffee Break			
14:40~16:00		Rare Metals (I5, A5~A6)	Resources & Recycling (I10, B5~B8)	Panel Discussion (Rare Metals)	Panel Discussion (Nano composites and Nanoporous materials)	Advanced Material Processing (A18~A21)	Novel Functional Materials (I17~I18, B17~B19)		
16:00~18:00	Registration (16:00~20:00)	Poster Session (AMP, MAM, RM, RR, CM)		Panel Discussion (Resources & Recycling)	Panel Discussion (Novel Functional Materials)	Poster Session (APM, ENM, NNM, NFM)			
18:00~20:00	Welcome Reception								

## 4. Opening Speeches

### ISNNM–2012 Chairmen

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**Byoung Kee Kim** (Univ. of Ulsan)

**Yoo–Dong Hahn** (Korea Institute of Materials Science)

**Gultekin Goller** (Istanbul Technical Univ.)

**Sadriye Kucukbayrak–Oskay** (Istanbul Technical Univ.)

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## 5. Plenary Lecture

P–01

2012–08–27(Mon)

10:00~10:30

**Prof. Suk–Joong L. Kang**(KAIST)

What Else do We Need to Know to Understand Sintering Phenomena?

P–02

2012–08–28(Tue)

10:00~10:30

**Dr. Eugene Ivanov**(Tosoh SMD)

Mechanochemical Synthesis of Nanocrystalline Metal Powders

P–03

2012–08–29(Wed)

10:00~10:30

**Prof. M.L.Ovecoglu**(Istanbul Technical Univ.)

Characterization Investigations During Mechanochemical Synthesis of Some Transition Metal Borides

## 6. Invited Lecture

### Advanced Material Processing

[I-01] Dr. Tetsuo Uchikoshi (National Institute for Materials Science)	Electrophoretic Deposition of SiAlON: Eu <sup>2+</sup> Phosphor Particles for Packaging of Flat Pseudo-White Light Emitting Devices
[I-02] Prof. Young Do Kim (Hanyang Univ.)	Dispersion of Cobalt Nanoparticles Synthesized by Liquid Phase Reduction Method

### Advanced Powder Metallurgy

[I-11] Prof. Jai Sung Lee (Hanyang Univ.)	Advances in Processing of PM Microcomponents Using a Bimodal Mixture of Micro-Nano Powders
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### Energy & Nuclear Materials

[I-12] Dr. Yong Hwan Jeong (Korea Atomic Energy Research Institute)	Development of Advanced Nuclear Materials for Future Nuclear Systems in Korea
[I-14] Prof. N. Baydogan (Istanbul Technical Univ.)	The Effect of Neutron and Mixed Gamma/Neutron Irradiation on The Solar Parameters of Borosilicate Glass

### Mechanical Alloying & Mechanochemistry

[I-06] Prof. R. Martínez-Sánchez (Centro de Investigacion en Materiales Avanzados)	HRTEM of CNT/Al <sub>2</sub> O <sub>3</sub> Composites by Mechanical Alloying
[I-07] Prof. Jung-Ho Ahn (Andong National Univ.)	Effect of Carbon Addition on the Microstructure of Mechanically Alloys Ni-Y <sub>2</sub> O <sub>3</sub>

***Nanocomposite and Nanoporousmaterials***

<b>[I-19] Dr. Jenő Gubicza</b> (Eotvos Lorand Univ.)	Defect Structure and Mechanical Properties of Metal Matrix – carbon Nanotube Composites
<b>[I-20] Dr. Junggoo Lee</b> (Korea Institute of Materials Science)	Formation of Hollow Copper Oxide by Oxidation of Cu Nanoparticles
<b>[I-21] Prof. Sang Chai Kim</b> (Mokpo National Univ.)	Influence of Reducing Agents and a Stabilizing Agent on the Preparation of Nano-Size Platinum Metals
<b>[I-22] Dr. Juergen Schreiber</b> (Fraunhofer-Institut für Zerstorungsfreie Prüfverfahren)	Application of Nano-diamond in Biomedicine

***Novel Functional Materials***

<b>[I-15] Prof. Hong-Baek Cho</b> (Nagaoka Univ. of Technology)	Exfoliation and Functionalization of BN Nanosheets and Fabrication of Densely Packed Linear Assembly in Polymer Nanocomposites
<b>[I-16] Dr. Ozgür Birer</b> (Koc Univ.)	Sonochemical Synthesis of Nanomaterials
<b>[I-17] Prof. Mustafa Ürgen</b> (Istanbul Technical Univ.)	Chemical and Electrochemical Processes for the Production of Nanotemplates, Nanowires, Nanopatterned and Functional Surfaces
<b>[I-18] Dr. Frank Uwe Renner</b> (Max-Planck-Institut für Eisenforschung, Germany)	Mesoporous Structures by Selective Dissolution of Alloys

**Rare Metal**

<b>[I-03] Prof. Takashi Goto</b> (Tohoku Univ.)	High-Speed Deposition of Super-Conducting Film by Laser CVD for Rare-Metal Substitution
<b>[I-04] Dr. Ryan T. Ott</b> (Ames Laboratory (USDOE))	Recycling of Rare Earth Metals Using Liquid Metal Extraction
<b>[I-05] Prof. J. Eckert</b> (IFW Dresden)	Stability and Recycling of Rare Earth Permanent Magnets

**Resources & Recycling**

<b>[I-08] Dr. Joerg Woidasky</b> (Fraunhofer-Institute for Chemical Technology)	Molecular Sorting-Next Generation Recovery and Recycling Processes
<b>[I-09] Dr. Yoo-Dong Hahn</b> (Korea Institute of Materials Science)	Fundamental Study on the Recycling Technology of End-of-Life Magnesium Scrap
<b>[I-10] Dr. A. Waske</b> (IFW Dresden)	The Role of Structural Transitions for Magnetocaloric Cooling

## 7. Technical Program

### Oral Session (ex. 27A-I-01-0300)

27	A	I-01	0300
Date	Room	Presentation No.	Abstract No.

### Poster Session (ex. 27-PA-001-0026)

27	PA-001	0026
Date	Presentation No.	Abstract No.

### Author (ex. Tetsuo Uchikoshi\*)

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Presenter	Corresponding Author

Monday, 27 August 2012

### Oral Session

Room A 10:50 ~ 12:10

**Simposia** : Advanced Material Processing

**Chairman** : Prof. Soon-Jik Hong (Kongju  
Nat'l. Univ., Korea)

27A-I-01-0300 [Invited Lecture]  
Electrophoretic Deposition of SiAlON : Eu<sup>2+</sup>  
Phosphor Particles for Packaging of Flat  
Pseudo-White Light Emitting Devices  
Tetsuo Uchikoshi\*  
Nat'l. Institute for Materials Science, Japan

**27A-I-02-0246 [Invited Lecture]****Dispersion of Cobalt Nanoparticles Synthesized by Liquid Phase Reduction Method**

Jin Ho Lee<sup>1</sup>, Jin Woo Kim<sup>1</sup>, Jong Min Byun<sup>1</sup>,  
Seoung Yeul Kwak<sup>1</sup>, Hyun Seon Hong<sup>2</sup> and  
Young Do Kim<sup>1\*</sup>

<sup>1</sup>Hanyang Univ., Korea

<sup>2</sup>Institute for Advanced Engineering, Korea

**27A-A-01-0206****Fabrication of Si-SiC Materials with a High Strength and High Purity using SiC-C Hybrid Composite Powders Synthesized by a Carbothermal Reduction Process**

Sang Whan Park<sup>1\*</sup>, Gyoung Sun Cho<sup>1</sup>,  
SungHoYoon<sup>1</sup>, SungilYoon<sup>1,2</sup>

<sup>1</sup>Korea Institute of Science and Technology, Korea

<sup>2</sup>Seoul Nat'l. Univ. of Science and Engineering, Korea

**27A-A-02-0224****Structural, Morphological and Up-Converting Luminescence Characteristics of Nanocrystalline Y2O3:Yb/Er Powders**

L.Mancic<sup>1\*</sup>, V. Lojpur<sup>1</sup>, P.Vulic<sup>2</sup>, M.E.Rabanal<sup>2</sup>,  
M.Dramicanin<sup>3</sup>, and O.Milosevic<sup>1</sup>

<sup>1</sup>Institute of Technical Sciences of SASA, Serbia

<sup>2</sup>Univ. of Belgrade, Serbia

<sup>3</sup>Univ. Carlos III of Madrid, Spain

===== Lunch (12:10~13:00) =====

**Room A** **13:00 ~ 14:20**

**Simposia** : Rare Metal

**Chairman** : Dr. Min-Ha Lee (KITECH, Korea)

**27A-I-03-0127 [Invited Lecture]****High-Speed Deposition of Super-Conducting Film by Laser CVD for Rare-Metal Substitution**

Takashi Goto<sup>\*</sup>, Pei Zhao, Akihiko Ito, and  
Rong Tu

Tohoku Univ., Japan

**27A-I-04-0008 [Invited Lecture]****Recycling of Rare Earth Metals using Liquid Metal Extraction**

Ryan T. Ott<sup>\*</sup>, Larry L. Jones<sup>1</sup>, and Taek-Soo Kim<sup>2</sup>

<sup>1</sup>Ames Laboratory, USA

<sup>2</sup>Korea Institute for Rare Metals, Korea

**27A-A-03-0091****Corrosion Behavior of Rapidly Solidified Mg-Zn-Y-Sn Alloys in 0.01M NaCl Solution**

S.W. Nam<sup>1,3</sup>, W.T. Kim<sup>2</sup>, D.H. Kim<sup>1</sup>, and T.S. Kim<sup>3\*</sup>

<sup>1</sup>Yonsei Univ., Korea

<sup>2</sup>Cheongju Univ., Korea

<sup>3</sup>Korea Institute of Industrial Technology, Korea

**27A-A-04-0177****Development of High Efficiency Thermoelectric Materials by New Powder Metallurgy Process**

Hyo-Seob Kim, Soon-Jik Hong<sup>\*</sup>

Kongju Nat'l. Univ., Korea

===== Break (14:20~14:40) =====

**Room A** **14:40 ~ 16:00**

**Simposia** : Rare Metal

**Chairman** : Prof. Takashi Goto (Tohoku Univ., Japan)



12<sup>th</sup> International Symposium on Novel and Nano Materials

27A-I-05-0180 [Invited Lecture]

Stability and Recycling of Rare Earth Permanent Magnets

J. Eckert<sup>1,2</sup>, A. Gebert<sup>1</sup>, M. Uhlemann<sup>1</sup>, R. Suetpitz<sup>1</sup>, U. Kühn<sup>1</sup>, B.S. Kim<sup>3</sup>, M.H. Lee<sup>3</sup>, and T.S. Kim<sup>3</sup>

<sup>1</sup>IFW Dresden, Germany

<sup>2</sup>TU Dresden, Germany

<sup>3</sup>Korea Institute of Industrial Technology, Korea

27A-A-05-0028

Formation of Nanoscale Twins under the Geometrical Constraints Condition Within Rare Metals Including Metallic Glass Composite

Min Ha Lee<sup>1</sup>, Bum Sung Kim<sup>1</sup>, Do Hayng Kim<sup>2</sup>, and Jürgen Eckert<sup>3</sup>

<sup>1</sup>Korea Institute of Industrial Technology, Korea

<sup>2</sup>Yonsei Univ., Korea

<sup>3</sup>IFW Dresden, Germany

27A-A-06-0053

Effect of Condition of Mechanical Alloying on CaO Coated Mg Powders and Property of Desulfurization

Tae Bum Kim, Sun Mi Kim and Taek Soo Kim\*  
Korea Institute of Industrial Technology, Korea

Room B

10:50 ~ 12:10

**Symposia** : Mechanical Alloying & Mechanochemistry

**Chairman** : Dr. Roberto Martinez (Centro de Investigacion en Materiales Avanzados, Mexico)  
Dr. Jung Goo Lee (Korea Institute of Materials Science, Korea)

27B-I-06-0315 [Invited Lecture]

HRTEM of CNT/Al<sub>2</sub>O<sub>3</sub> Composites by Mechanical Alloying

R. Pérez-Bustamante, R. Martínez-Sánchez\*

Centro de Investigación en Materiales Avanzados, México

27B-I-07-0214 [Invited Lecture]

Effect of Carbon Addition on the Microstructure of Mechanically Alloys Ni-Y<sub>2</sub>O<sub>3</sub>

Jinsung Jang, TaeKyu Kim<sup>1</sup>, and Jung-Ho Ahn<sup>2</sup>\*

<sup>1</sup>Korea Atomic Energy Research Institute, Korea

<sup>2</sup>Andong Nat'l. Univ., Korea

27B-B-01-0083

The Evolution from Binary to Ternary with the Effect of Nitrogen in TiC-Based Cermet: Experimental and Theoretical Investigations

Zhe GAO, Shinhoo Kang\*

Seoul Nat'l. Univ., Korea

27B-B-02-0102

Effect of Carbide Particle Size on the Properties of W-ZrC Composites

Jae-Hee Kim, Moonsu Seo, Choongkwon Park, and Shinhoo Kang\*

Seoul Nat'l. Univ., Korea

===== Lunch (12:10~13:00) =====

Room B

13:00 ~ 14:20

**Symposia** : Resources & Recycling

**Chairman** : Dr. Anja Waske (IFW Dresden, Germany)  
Prof. Kyoungkeun Yoo (Korea Maritime Univ., Korea)

**27B-I-08-0169 [Invited Lecture]****Molecular Sorting – Next Generation Recovery and Recycling Processes**Joerg Woidasky\*

Fraunhofer-Institute for Chemical Technology, Germany

**27B-I-09-0227 [Invited Lecture]****Fundamental Study on the Recycling Technology of End-of-Life Magnesium Scrap**Y.D. Hahn<sup>1</sup>\*, B.G. Moon<sup>1</sup>, B.S. You<sup>1</sup>, W.W.Park<sup>2</sup>, K.Y. Sohn<sup>2</sup>, and K.H. Koh<sup>2</sup><sup>1</sup>Korea Institute of Materials Science, Korea<sup>2</sup>Inje Univ., Korea**27B-B-03-0170****The Recycling of Slag from Cobalt Concentrate with Red Mud and Waste Limestone as Fluxes using the Sag Atomizing Technology**Jeongsoo Sohn, Sookyung Kim, Kangin Rhee, and Donghyo Yang\*

Korean Institute of Geoscience and Mineral Resources, Korea

**27B-B-04-0183****Development of Total Recycling Technologies for Flat Panel Display Devices**Sungkyu Lee, Chan Gi Lee, Sung-Su Cho, Myung Hwan Hong, Hyun Seon Hong\*  
Institute for Advanced Engineering, Korea

===== Break (14:20~14:40) =====

**Room B****14:40 ~ 16:00****Simposia** : Resources & Recycling**Chairman** : Dr. Joerg Woidasky (Fraunhofer-Institute for Chemical Technology, Germany)  
Prof. Kyoungkeun Yoo (Korea Maritime Univ.)**27B-I-10-0334 [Invited Lecture]****The Role of Structural Transitions for Magnetocaloric Cooling**A. Waske<sup>1</sup>\*, K. Skokov<sup>2</sup>, L. Giebeler<sup>1</sup>, O. Gutfleisch<sup>2</sup>, and J. Eckert<sup>1,3</sup><sup>1</sup>FW Dresden, Germany<sup>2</sup>TU Darmstadt, Germany<sup>3</sup>TU Dresden, Germany**27B-B-05-0259****Material Flow Analysis of Neodymium and Dysprosium in Korea**Chan Gi Lee<sup>1</sup>\*, Kang Ryong Choi<sup>2</sup>, Lee Seung Kang<sup>1</sup> and Hyun Sun Hong<sup>1</sup><sup>1</sup>Institute for Advanced Engineering, Korea<sup>2</sup>Samsung Electro-Mechanics Co, Korea**27B-B-06-0155****Recycling Process of Spent Battery Modules in Used Hybrid Electric Vehicles using Physical/Chemical Treatments**Sookyung Kim, Donghyo Yang, Kangin Rhee, and Jeongsoo Sohn\*

Korean Institute of Geoscience and Mineral Resources, Korea

27B-B-07-0086

**A Study on the Manufacture of Iron Powder from Forge Scale with Hydrogen**

Shun-Myung Shin<sup>1</sup>, Chang-Yong Kang<sup>2</sup>, and Jei-Pil Wang<sup>3,\*</sup>

<sup>1</sup>Korea Institute of Geoscience and Mineral Resources, Korea

<sup>2</sup>Pukyong Nat'l. Univ., Korea

27B-B-08-0050

**Leaching Behavior of Heavy Metals in Contaminated Soils with Citric Acid**

Kyoungeun Yoo<sup>3,\*</sup>, Hongki Park, and Kyungbae Jung

Korea Maritime Univ., Korea

**Poster Session**

Room A

16:00 ~ 18:00

**Symposia** : Advanced Material Processing

**Chairman** : Jung-Ho Ahn (Andong Nat'l. Univ., Korea)

27-PA-001-0026

**Densification Behavior Analysis of ZrO<sub>2</sub> Nanopowders by Magnetic Pulsed Compaction**

Hyo-Young Park<sup>1</sup>, M. Fatih Kilicaslan<sup>2</sup>, Uk-HyonJoo<sup>3</sup>, and Soon-Jik Hong<sup>1,\*</sup>

<sup>1</sup>Kongju Nat'l. Univ., Korea

<sup>2</sup>Kastamonu Univ., Turkey

<sup>3</sup>Bio Materials Korea Inc., Korea

27-PA-002-0027

**Effect of Co on the Microstructure of Al-25Si-5Fe Alloys**

M. F. Kilicaslan<sup>1</sup>, F.Yilmaz<sup>2</sup>, O. Uzun<sup>2,\*</sup>, and

S.J. Hong<sup>3,\*</sup>

<sup>1</sup>Kastamonu Univ., Turkey

<sup>2</sup>Gaziosmanpa Univ., Turkey

<sup>3</sup>Kongju Nat'l. Univ., Korea

27-PA-003-0040

**Preparation of MgAl<sub>2</sub>O<sub>4</sub> Spinel Nano-powders by Hydrolyzing Magnesium Aluminum Isopropoxide**

Xiuhui Wang<sup>1</sup>, Huanhuan Ni<sup>1,\*</sup>, Ye Cao<sup>1</sup>,

Chengmin Wang<sup>2</sup>, Hong Gao<sup>1</sup>, Jinlong Yang<sup>3</sup>

<sup>1</sup>Dalian Jiaotong Univ., China

<sup>2</sup>Hanghai Bcsapphire Technology Co., LTD., China

<sup>3</sup>Tsinghua Univ., China

27-PA-004-0060

**Preparation and Characterization of Copper Nanoparticles via the Liquid Phase Plasma Method**

H.G. Kim<sup>1</sup>, H. Lee<sup>1</sup>, B.H. Kim<sup>2</sup>, S.J. Kim<sup>3</sup>,

S.C. Kim<sup>4</sup>, and S.C. Jung<sup>1,\*</sup>

<sup>1</sup>Sunchon Nat'l. Univ., Sunchon, Korea

<sup>2</sup>Chosun Univ., Korea

<sup>3</sup>Sejong Univ., Korea

<sup>4</sup>Mokpo Nat'l. Univ., Korea

27-PA-005-0061

**Thermal Properties of Epoxy/Heat-treated Pitch Composites**

Gun-Young Heo, Soo-Jin Park<sup>\*</sup>

Inha Univ., Korea

27-PA-006-0088

**Fabrication and Property Evaluation of Mo Sputtering Target by Spark Plasma Sintering Process**

Hee Jun. Youn, Hyun Kuk. Park, Jung Han Ryu, Ik Hyun. Oh\*  
Korea Institute of Industrial Technology,  
Korea

27-PA-007-0108

**Morphological Control of High Thermal Conductive Ceramic Materials**

Dang Thi My Linh<sup>1,2</sup>, Chang-Yeoul Kim<sup>1\*</sup>, Kwang-Yeoul Cho<sup>1</sup>, Hyo-Tae Kim<sup>1</sup>, Jong-Hee Kim<sup>1</sup>, and Dae-Ho Yoon<sup>2</sup>

<sup>1</sup>Korea Institute of Ceramic Eng. & Tech, Korea

<sup>2</sup>Sungkyunkwan Univ., Korea

27-PA-008-0111

**Effect of Re-immersion and Carbonization Treatments on the Properties of Carbon Foam Prepared by Carbonization of Resorcinol-Formaldehyde Precursor**

Youngmok Rhyim<sup>1\*</sup>, Chang-Woo Lee<sup>1</sup>, Eunju Yi<sup>2</sup>, Si-Young Choi<sup>1</sup> and Yangdo Kim<sup>2</sup>

<sup>1</sup>Korea Institute of Materials Science, Korea

<sup>2</sup>Pusan Nat'l. Univ., Korea

27-PA-009-0118

**Experimental Study on Impact Properties of Composites with Aluminum Foam and Honeycomb**

Y. C. Kim<sup>1</sup>, H. K. Choi<sup>1</sup>, S. Lee<sup>2</sup>, C. Cho<sup>2</sup>, and J. U. Cho<sup>1\*</sup>

<sup>1</sup>Kongju Nat'l. Univ., Korea

<sup>2</sup>Inha Univ., Korea

27-PA-010-0120

**Preparation of Solder Paste Containing Submicron Sn Powders Synthesized via Chemical Reduction and Its Reflow**

**Soldering Characteristics**

Sang-Soo Chee, Jong-Hyun Lee\*  
Seoul Nat'l. Univ., Korea

27-PA-011-0125

**Synthesis of SiO<sub>2</sub>-SnO<sub>2</sub>-Pt Composite Nanowires via Co-electrospinning**

YuJin Lee, Hyo-Jin Ahn<sup>\*</sup>

Seoul Nat'l. Univ., Korea

27-PA-012-0126

**Fabrication and Characterization of Nb-doped TiO<sub>2</sub> Nanofibers via Electrospinning**

Hye Lan An, Hyo-Jin Ahn<sup>\*</sup>

Seoul Nat'l. Univ., Korea

27-PA-013-0132

**An Analysis of Stress Intensity Factor Due to Normal Stress for the Cracked Plate Reinforced with a Plate by Seam Welding**

Ok-Hwan Kim<sup>\*</sup>, Young-Choon Kim

Kongju Nat'l. Univ., Korea

27-PA-014-0133

**Adhesion Behavior and Corrosion Property of CaO-SiO<sub>2</sub> Nanocomposites on Pure Magnesium by a Sol-gel Dip Coating Technique**

Hye Sung Kim<sup>\*</sup>, Jin Woo Ahn, Yoon-Hwae Hwang, Tae Gyu Kim, Jin kon Kim, and Hyun Cho

Pusan Nat'l. Univ., Korea

27-PA-015-0135

**Microwave Technique: A Powerful Tool for Sintering Ceramic Materials**

A. Borrelli<sup>\*</sup>, M. D. Salvador<sup>1</sup>, M. Miranda<sup>2</sup>, F. L. Peñaranda-Foix<sup>3</sup>, and J. M. Catalá<sup>3</sup>

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<sup>2</sup>Centro de Investigación en Nanomateriales y Nanotecnología, Spain

<sup>3</sup>Instituto de Aplicaciones de las Tecnologías de la Información y de las Comunicaciones Avanzadas, Spain

27-PA-016-0137

**Synthesis of Porous Cu-Sn using Freeze-Drying Process of CuO-SnO<sub>2</sub>/Camphene Slurries**  
Sung-Tag Oh<sup>1</sup>, Si-Young Chang<sup>2</sup>, and Myung-Jin Suk<sup>3\*</sup>

<sup>1</sup>Seoul Nat'l. Univ. Korea

<sup>2</sup>Korea Aerospace Univ., Korea

<sup>3</sup>Kangwon Nat'l. Univ., Korea

27-PA-017-0151

**Rapid Consolidation of Nanostructured Ti-TiC Composite from Mechanically Grinded Ti-10vol% CNT and TiH<sub>2</sub>-10vol% CNT Powders by High Frequency Induction Heating and its Mechanical Properties.**

Na-Ra Park, In-Jin Shon\*

Chonbuk Nat'l. Univ., Korea

27-PA-018-0157

**Structural Stability of Si Powder Coated Under High Temperature Plasma Flame**

Byung Hwan Hong<sup>1</sup>, Jeong Min Kim<sup>1</sup>, Young Il Son<sup>2</sup>, and Joon Sik Park<sup>1\*</sup>

<sup>1</sup>Hanbat Nat'l. Univ., Korea

<sup>2</sup>Agency for Defense Development, Korea

27-PA-019-0164

**Surface Modified TiO<sub>2</sub> Particles Obtained Through Aerosol Processing of Colloid Precursors**

L. Mancic<sup>1\*</sup>, I. Dugandzic<sup>1</sup>, D. Jovanovic<sup>2</sup>, Z. Saponjic<sup>2</sup>, O. Milosevic<sup>1</sup>, and J. Nedeljkovic<sup>2</sup>

<sup>1</sup>Institute of Technical Sciences of SASA, Serbia

<sup>2</sup>Univ. of Belgrade, Serbia

27-PA-020-0167

**The Mechanical Properties and Hot-extrusion of CNT-reinforced AZ31 Magnesium based Composites**

Daehwan Kim, Bonghak Seong, Guenho Van, Inshup Ahn and Sugun Lim\*

Gyeongsang Nat'l. Univ., Korea

27-PA-021-0185

**Influence of Heat Treatment and Interlayer on Interface of Al/Ti Clad Composite Fabricated by Groove Rolling**

T.H. Lee<sup>1</sup>, K.T. Park<sup>2</sup>, K.M. Ku<sup>1</sup>, W.G. Kim<sup>1</sup>, H.H. Nersisyan<sup>3</sup>, H.G. Jeong<sup>4</sup>, and J.H. Lee<sup>1,2,\*</sup>

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<sup>3</sup>Chungnam Nat'l. Univ., Korea

<sup>4</sup>Korea Institute of Industrial Technology, Korea

27-PA-022-0192

**Characteristic Analysis of Forging Processes for Driving Gear of Automobile Part**

Key-sun Kim\*

Kongju Nat'l. Univ., Korea

27-PA-023-0195

**Characteristics of Machined Surface Layer of Cemented Carbide by Wire Cutting Electrical Discharge Machine with Various Discharge Energies.**

Woo Gun Sim<sup>1</sup>, Key-sun Kim<sup>2\*</sup>

<sup>1</sup>Hannam Univ., Korea

<sup>2</sup>Kongju Nat'l. Univ., Korea

27-PA-024-0200

**Microstructures and Mechanical Properties of Cemented Carbide Fabricated by New Consolidation Processes**

Joon-Woo Song<sup>1\*</sup>, Rumman Md. Raihanuzzaman<sup>1</sup>, Hyun Seon Hong<sup>2</sup>, and Soon-Jik Hong<sup>1</sup>

<sup>1</sup>Kongju Nat'l. Univ., 2Korea

<sup>2</sup>Institute for Advanced Engineering, Korea

27-PA-025-0203

**Evaluation of Mechanical Properties and Microstructural Analysis of WC-7.5wt% nanoCo at Low Sintering Temperature and with Increasing Sintering Pressure**

Rumman Md. Raihanuzzaman, Joon-Woo Song, and Soon-Jik Hong<sup>\*</sup>  
Kongju Nat'l. Univ., Korea

27-PA-026-0207

**Fabrication of CNT/AZ31 Mg-based Nanocomposite by Friction Stir Processing**

Byeong Cheol You<sup>1</sup>, Chan-Yang Choi<sup>1</sup>, Seung-Mi Lee<sup>1</sup>, Jai-Won Park<sup>2</sup>, Jai-Won Byeon<sup>1\*</sup>

<sup>1</sup>Seoul Nat'l. Univ., Korea

<sup>2</sup>Asea Aviation College, Korea

27-PA-027-0210

**Fabrication of Li<sub>2</sub>TiO<sub>5</sub> Pebbles by a Novel Freeze Drying Process**

Sang-Jin Lee<sup>\*</sup>, Min-Woo Yoo  
Mokpo Nat'l. Univ., Korea

27-PA-028-0225

**Effect of Strontium Addition on the Microstructures and Mechanical Properties of Mg-5Al-2Ca Alloys**

B.G. Moon<sup>\*</sup>

Korea Institute of Materials Science, Korea

27-PA-029-0233

**Chemical and Morphological Characterization of Cu/Zn Alloy Spherical Microparticles Generated in a Solid Flame**

T.H. Lee<sup>1</sup>, W.G. Kim<sup>1</sup>, K.M. Ku<sup>1</sup>, H.H. Nersisyan<sup>3</sup>, H.G. Jeong<sup>4</sup>, and J.H. Lee<sup>1,2\*</sup>

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<sup>3</sup>Chungnam Nat'l. Univ., Korea

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27-PA-030-0242

**Molybdenum Nanopowders Prepared by the Reduction of Molybdenum Oxide in RF Plasma**  
Jong-Il Park<sup>\*</sup>

Research Institute of Industrial Science and Technology, Korea

27-PA-031-0247

**Microstructure and Texture in Asymmetrical Cross-roll Rolled AA5052 Sheets**

Kye-Man Lee, Moo-Young Huh<sup>\*</sup>

Korea Univ., Korea

27-PA-032-0271

**The Effect of Sc on the Microstructure and Mechanical Properties of Hypereutectic Al-Si Alloy Fabricated by Gas Atomization**

**Process**

Tae-Haeng Lee<sup>\*</sup>, Han-Jin Ko, and Soon-Jik Hong  
Kongju Nat'l. Univ., Korea

**27-PA-033-0273**

**A Novel Method for Fabricating Fe-Cr-Al Alloyed Foam for Catalyzed Soot Filter**

Luong Huu Bac<sup>1,2</sup>, Byoung-Kee Kim<sup>1</sup>, and Young-Min Kong<sup>1\*</sup>

<sup>1</sup>Univ. of Ulsan, Korea

<sup>2</sup>Hanoi Univ. of Science and Technology, VietNam

**27-PA-034-0276**

**Features of Formation Metal Doped Titanium Dioxide Nanotube Films Obtained in Different Anodizing Condition**

Li Li He, Tursunkulov Oybek, Bunyod Allabergenov, SangYup Kim, EunYoung Lee, Jeong Ae Park, and Sungjin Kim<sup>\*</sup>  
Kumoh Nat'l. Institute of Technology, Korea

**27-PA-035-0283**

**Synthesis of BaFe<sub>10</sub>Al<sub>2</sub>O<sub>19</sub> Nanoparticles by a Salt-matrix Method**

S. G. Cho, K. W. Jeon, M. Kang, Y. H. Choa, and J. Kim<sup>\*</sup>

Hanyang Univ., Korea

**27-PA-036-0298**

**Preparation and Characterization of AgNO<sub>3</sub> Doped ZnO-PVA and TiO<sub>2</sub>-PVA Composite Powders by Spray Drying**

Seyma Duman, Burak Özkal<sup>\*</sup>

Istanbul Technical Univ., Turkey

**27-PA-037-0299**

**Effects of High-Energy Ball-Milling Treatment and Bi Addition on Hydrogen Storage Performance of Melt-spun LaNi<sub>4.7-x</sub>Al<sub>0.3</sub>Bi<sub>x</sub> (x=0,0.1,0.2,0.3)Alloys**

F. Yi Imaz<sup>1</sup>, O. Uzun<sup>1\*</sup>, M. F. Kiliçaslan<sup>2</sup>, O.

M. Atanur<sup>3</sup>, and S. J. Hong<sup>4</sup>

<sup>1</sup>Gaziosmanpa Univ., Turkey

<sup>2</sup>Kastamonu Univ., Turkey

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Technologies, UNIDO-ICHET, Turkey

<sup>4</sup>Kongju Nat'l. Univ., Korea

**27-PA-038-0300**

**Effects of Milling Time on Microstructural and Mechanical Properties of Al-20Si-5Fe Alloy Fabricated by High-Energy Ball-Milling**

O. Uzun<sup>1\*</sup>, F. Yılmaz<sup>2</sup>, M. F. Kiliçaslan<sup>2</sup>, and S. J. Hong<sup>3</sup>

<sup>1</sup>Gaziosmanpa Univ., Turkey

<sup>2</sup>Kastamonu Univ., Turkey

<sup>3</sup>Kongju Nat'l. Univ., Korea

**27-PA-039-0307**

**Density and Porosity Changes as a function of Forming Pressure for Graphite Bulks**

Hyun-Yong Lee<sup>\*</sup>, Seung-Kuk Seo, Beom-Jun Kim, Sang-Min Lee, Heui-Sook Choi, and Jae-Seung Roh

Kumoh Nat'l. Institute of Technology, Korea

**27-PA-040-0308**

**Effects of Graphite Flakes Contents and Roughness under Magnetic Field on the Thermal Emissivity of Graphite Coated Aluminum Sheets for Electric Parts**

Beom-Jun Kim<sup>\*</sup>, Hyun-yong Lee, Seung-

Kuk Seo, Jae-Hong Kim, Youn-Gwan Lee,  
Woo-Suk Kim, and Jae-Seung Roh  
Kumoh Nat'l. Institute of Technology, Korea

27-PA-041-0325

**Mechanical Properties and Frictional Behaviors of Brass Composites Dispersed with Fe Powder**  
D. H. Kwon<sup>1,2</sup>, H. J. Kim<sup>1\*</sup>, J. C. Bae<sup>1</sup>, and M. Y. Hu<sup>2</sup>

<sup>1</sup>Korea Institute of Industrial Technology, Korea

<sup>2</sup>Korea Univ., Korea

27-PA-042-0328

**Investigation of Interaction System of H – H + Pt(111): A Molecular Dynamics Study**  
Can Doğan Vurdu<sup>1\*</sup>, S. K. Deb Nath<sup>2</sup>, Fatma Kandemirli<sup>3</sup>, ZiyaB. Güvenc<sup>4</sup>, and Soon-Jik Hong<sup>2</sup>

<sup>1</sup>Kastamonu Univ., Turkey

<sup>2</sup>Kongju Nat'l. Univ., Korea

<sup>3</sup>Niğde Univ., Turkey

<sup>4</sup>Çankaya Univ., Turkey

27-PA-043-0329

**Determination of Potential Energy Surface of H Interaction with Pt(111) Covered with H: using Density Functional Methods**

Can Doğan Vurdu<sup>1\*</sup>, Fatma Kandemirli<sup>2</sup>, ZiyaB. Güvenc<sup>3</sup>, and Soon-Jik Hong<sup>4</sup>

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<sup>2</sup>Niğde Univ., Turkey

<sup>3</sup>Çankaya Univ., Turkey

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27-PA-044-0335

**Crystallization and Hardness Behavior of**

**an Amorphous Al<sub>88</sub>Co<sub>7</sub>Y<sub>5</sub> Alloy**

B. Avar<sup>\*</sup>, M. Gogebakan  
Kahramanmaraş Sutcu Imam Univ., Turkey

27-PA-045-0337

**Phase-dependent Corrosion in the Titanium-super Stainless Steel Joints Brazed by the Commercial 72Ag-28Cu Alloy Foils**

M. K. Lee<sup>\*</sup>, J. G. Lee, C. K. Rhee  
Korea Atomic Energy Research Institute, Korea

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**Simposia** : Mechanical Alloying & Mechanochemistry

**Chairman** : Jung-Ho Ahn (Andong Nat'l. Univ., Korea)

27-PA-046-0079

**Influence of the Microstructure and Mechanical Properties by Phase Selection in Ti-Fe-Ni Nanostructure Dendrite Composite**

C. H. Lee<sup>1</sup>, G. A. Song<sup>2</sup>, J. H. Han<sup>3</sup>, E. M. Park<sup>1</sup>, and K. B. Kim<sup>1\*</sup>

<sup>1</sup>Sejong Univ., Korea

<sup>2</sup>Univ. of Tennessee, U.S.A

<sup>3</sup>IFW Dresden, Germany

27-PA-047-0081

**Development of Rapidly Solidified Al-Ni-Y-X Amorphous Alloys**

E. J. Yeo, J. H. Jo, J. T. Kim, and K. B. Kim<sup>\*</sup>  
Sejong Univ., Korea

27-PA-048-0087

**Improvement of the Mechanical Properties of Mg-Li based Bulk Metallic Glasses**



12<sup>th</sup> International Symposium on Novel and Nano Materials

J. H. Jo<sup>1</sup>, S. C. Mun<sup>1</sup>, H. S. Cho<sup>2</sup>, Y. H. Kim<sup>2</sup>,  
H. T. Son<sup>2</sup>, and K. B. Kim<sup>1\*</sup>

<sup>1</sup>Sejong Univ., Korea

<sup>2</sup>Korea Institute of Industrial Technology,  
Korea

27-PA-049-0089

**Influence of Boron Addition on Microstructure  
and Mechanical Properties of Fe-Nb-B  
Eutectic Composite Alloys**

J. T. Kim, C. H. Lee, E. J. Yeo, J. H. Jo, S.  
C. Mun, and K. B. Kim\*

<sup>1</sup>Sejong Univ., Korea

27-PA-050-0119

**Synthesis and Characterization of IVB Group  
Transition Metal Borides**

Duygu Ağaoğulları\*, Özge Balci, İsmail  
Duman, M. Lütfi Öveçoğlu  
Istanbul Technical Univ., Turkey

27-PA-051-0173

**Structural and Physical Properties of Bulk  
Ni-B Alloys Processed Through Powder  
Metallurgy**

Wook Jin Lee<sup>1</sup>, Sung kyun Park<sup>1</sup>, Jung Geun  
Kim<sup>1</sup>, Dae Han Kim<sup>1</sup>, Jong Seong Bae<sup>2</sup>, Yong  
Ho Park<sup>1\*</sup>

<sup>1</sup>Pusan Nat'l. Univ., Korea

<sup>2</sup>Korea Basic Science Institute, Korea

27-PA-052-0295

**Infiltration Behaviour of Mechanical Alloyed  
75 wt% Cu – 25 wt% WC Powders into Porous  
WC Compacts**

Aydin SELTE, Burak ÖZKAL\*

Istanbul Technical Univ., Turkey

27-PA-053-0296

**The Effect of High Energy Milling on Production  
of 8% mole Y<sub>2</sub>O<sub>3</sub> doped ZrO<sub>2</sub> Powders**

D. Yilmaz, B. Özkal\*

Istanbul Technical Univ., Turkey

27-PA-054-0312

**Preparation of b-eucryptite from Powder  
Mixture of Pyrophyllite, Gibbsite and Lithium  
Carbonate by Mechanochemical Treatment**

Wantae Kim<sup>1</sup>, Kwanho Kim<sup>1</sup>, Hoon Lee<sup>1</sup>,

Hwasung Lee<sup>2</sup> and Sangbae Kim<sup>1\*</sup>

<sup>1</sup>Korea Institute of Geoscience and Mineral  
Resources, Korea

<sup>2</sup>Hanbat National Univ., Korea

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**Symposia : Rare Metal**

**Chairman :** Jung-Ho Ahn (Andong Nat'l.  
Univ., Korea)

27-PA-055-0046

**Separation of Rare Earth Elements using  
Adsorbent Materials with Functional Groups**

Jae-Kil Han<sup>1\*</sup>, Sun-A Ju<sup>1</sup>, In-Cheol Kang<sup>1</sup>  
and Taek-Soo Kim<sup>2</sup>

<sup>1</sup>Songdo Techno Park, Korea

<sup>2</sup>Korea Institute of Industrial Technology,  
Korea

27-PA-056-0077

**Separation of Heavy Rare Earth Elements  
with Extraction Chromatography Method**

Jeong-Gon Kim\*, Eun-Ah Joo

Univ. of Incheon, Korea

27-PA-057-0094

**Optical Properties of Red-emitting (Gd<sub>1-x</sub>Eu<sub>x</sub>)-WO<sub>3</sub> Phosphors**Gil Jae Lee<sup>1,2</sup>, Nu Si A Eom<sup>1</sup>, Taek-Soo Kim<sup>1</sup> and Bum Sung Kim<sup>1\*</sup><sup>1</sup>Korea Institute of Industrial Technology, Korea<sup>2</sup>Incheon Univ., Korea

27-PA-058-0129

**Effect of Dysprosium-compounds Treatment on Coercivity of Nd-Fe-B Sintered Magnets**D. R. Dhakal, S. Namkung, M. W. Lee, and T. S. Jang<sup>\*</sup>

Sun Moon Univ., Korea

27-PA-059-0136

**Extraction, Stripping and Separation Possibilities of Rhenium and Molybdenum using Amine Based Extractant (TOA)**Jin Gu Kang<sup>2</sup>, Yung-Uk Kim<sup>2</sup>, Ho-Sung Yoon<sup>1</sup>, J. RAJESHKUMAR<sup>1</sup>, Sung Ho Joo<sup>1,2</sup>, Shun Myung Shin<sup>1,2,\*</sup><sup>1</sup>Korea Institute of Geoscience & Mineral Resources, Korea<sup>2</sup>Univ. of Science & Technology, Korea

27-PA-060-0221

**An Enhancement of Rapid SiO<sub>2</sub> Atomic Layer Deposition Layerby Nitric Acid Treatment**J. -S. Park, D. -W. Choi, and W. -B. Kim<sup>\*</sup>

Dankook Univ., Korea

27-PA-061-0240

**Effect of Phase on Magnetic Properties in (Nd, Dy)-Fe-B Magnet Fabricated by Spark Plasma Sintering Process**Sun Yong Song, Jin Woo Kim, and YoungDo Kim<sup>\*</sup>

Hanyang Univ., Korea

27-PA-062-0311

**In-situ Tungsten Nano Attached Particle Synthesis from Tungsten**Chulwoong Han, Jiwon Oh, Yonghwan Kim, and Hanshin Choi<sup>\*</sup>

Korea institute of industrial technology, Korea

**Simposia** : Resources & Recycling**Chairman** : Jung-Ho Ahn (Andong Nat'l. Univ., Korea)

27-PA-063-0019

**Preparation and Characterization of Ni Substituted Li<sub>2</sub>Mn<sub>2</sub>O<sub>4</sub> and their Lilon Adsorption Behaviorsin Aqueous Medium**Seul-Yi Lee, Hey-Min Yoo, Ki-Seok Kim, Gun-Young Heo, and Soo-Jin Park<sup>\*</sup>

Inha Univ., Korea

27-PA-064-0048

**Sequestering Properties and Syntheses of Polyacrylate Copolymers with Various Molecular Weight**Jong-Mok Park, Min Bae Choi, and Ho-Cheol Kang<sup>\*</sup>

Korea Research Institute of Chemical Technology, Korea

27-PA-065-0049

**Effective Separation of Lanthanum and Cerium by using Surfactants with Various Alkyl Chains**

Se Mi Kim, Eun Su Lee, Jong-Mok Park,  
Jeong-Hoon Kim, and Ho-Cheol Kang\*  
Korea Research Institute of Chemical  
Technology, Korea

27-PA-066-0051

**Separation of Iron Components from Waste  
NdFeB Magnet by Roasting**

Kyoungeun Yoo<sup>1\*</sup>, Kwangseok Lee<sup>1</sup>,  
ChulJoo Kim<sup>2</sup> and Ho-SungYoon<sup>2</sup>  
<sup>1</sup>Korea Maritime Univ., Korea

<sup>2</sup>Korea Institute of Geoscience & Mineral  
Resources, Korea

27-PA-067-0052

**Synthesis of Stannic Acid from Waste Pb-  
free Solder by Nitric Acid Leaching**

Kyoungeun Yoo<sup>1\*</sup>, Kwangseok Lee<sup>1</sup>, Jae-  
chun Lee<sup>2</sup>

<sup>1</sup>Korea Maritime Univ., Korea

<sup>2</sup>Korea Institute of Geoscience & Mineral  
Resources, Korea

27-PA-068-0076

**Development of Recycling Process of HREE  
from CCFL with Ion-chromatography Method**

Jeong-Gon Kim<sup>\*</sup>, Bae-Yeon Kim  
Univ. of Incheon, Korea

27-PA-069-0113

**Recovery of Neodymium from Nd-Fe-B  
Magnet by Liquid Metal Extraction**

Hyun Woong Na, Jin Woo Ahn, Han Shin  
Choi, and Yong Hwan Kim\*

Korea Institute of Industrial Technology,  
Korea

27-PA-070-0115

**Recovery of Tungsten from Cemented  
Carbide Alloy Hard Scrap by Hydrometallurgical  
Process**

Jin Woo Ahn, Seong Ho Son, Han Shin Choi  
and Yong Hwan Kim\*

Korea Institute of Industrial Technology, Korea

27-PA-071-0178

**The New Approach for Utilization of Mn  
Sulfate and Zn Sulfate from Spent Zinc-  
Carbon and Alkaline Batteries**

Jeongsoo Sohn, Donghyo Yang, Kangin  
Rhee, Sookyung Kim\*

Korean Institute of Geoscience and Mineral  
Resources, Korea

27-PA-072-0232

**Dissolution Properties of Valuable Metals in  
PDP Cullets Fabricated by High Energy Ball  
Milling (HEBM)**

Cheol-Hee Lee<sup>1</sup>, Chan-Mi Kim<sup>1</sup>, Sung-Kyu  
Lee<sup>2</sup>, Hyun Seon Hong<sup>2</sup>, Soon-Jik Hong<sup>1</sup>,  
and Jar-Myung Koo<sup>1\*</sup>

<sup>1</sup>Kongju Nat'l. Univ., Korea

<sup>2</sup>Institute for Advanced Engineering, Korea

27-PA-073-0241

**Recovery and Separation of the Phosphor  
from the CCFL in End-of-Life LCD Units**

Hyun Seon Hong<sup>\*</sup>, Hangchul Jung, Minhye  
Seo, Sunghyun Uhm

Institute for Advanced Engineering, Korea

27-PA-074-0254

**Investigation of Selectively Dismantle  
Efficiency for Recovery of Precious Materials**

**from Waste Refrigerators**

Hyunseok Yang<sup>1\*</sup>, Geonhong Kim<sup>1</sup>, Mansik Kong<sup>1</sup>, Kiejin Park<sup>2</sup>, BoSaeng Kim<sup>3</sup>, and Gwangwon Lee<sup>4</sup>

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<sup>3</sup>Association of Electronics Environment, Korea

<sup>4</sup>Weltop Technos Corporation, Korea

**27-PA-075-0257**

**Recovery of the In from Waste Solutions Produced in the Leaching Process**

Hyun Seon Hong, Hangchul Jung<sup>\*</sup>, Geonhong Kim, and Mansik Kong  
Institute for Advanced Engineering, Korea

**27-PA-076-0264**

**Purification of AM50 Magnesium Alloy Melt Containing Polymeric Contamination**

B. G. Moon<sup>\*</sup>, B. S. You, Y. D. Hahn, and D. Y. Kim  
Korea Institute of Materials Science, Korea

**27-PA-077-0266**

**The Preliminary Electrochemical Study on Electrolytic Dissolution Behavior of Tin from Waste Lead-free Solder in NaOH Solutions**

Sookyung Kim<sup>1</sup>, Jae-chun Lee<sup>1</sup>, Jinki Jeong<sup>1</sup>, Byungsoo Kim<sup>1</sup>, Kyoungeun Yoo<sup>2\*</sup>

<sup>1</sup>Korea Institute of Geoscience and Mineral Resources, Korea

<sup>2</sup>Korea Maritime Univ., Korea

**27-PA-078-0277**

**Evaluation of Safety for LCC Crucible using Reactivity Test with Cadmium alloy containing Lanthanoids Elements**

K. M. Ku<sup>1</sup>, T. H. Lee<sup>1</sup>, W. G. Kim<sup>1</sup>, H. Y. Ryu<sup>2</sup>, S. H. Kim<sup>2</sup>, D. Y. Kim<sup>2</sup>, and J. H. Lee<sup>12\*</sup>

<sup>1</sup>Graduate School of Department of Advanced Materials Engineering, Korea

<sup>2</sup>Graduate School of Green Energy Technology, Korea

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**Simposia** : Characterization and Modeling

**Chairman** : Jung-Ho Ahn (Andong Nat'l. Univ., Korea)

**27-PA-079-0007**

**Oxidation of  $Ti_3Al_{0.5}Si_{0.5}C_2$  Compounds at 900–1100°C in Air**

Jae Chun Lee<sup>1</sup>, Sang Hwan Park<sup>2</sup>, and Dong Bok Lee<sup>3\*</sup>

<sup>1</sup>Myongji Univ., Korea

<sup>2</sup>Korean Institute for Science and Technology, Korea

<sup>3</sup>Sungkyunkwan Univ., Korea

**27-PA-080-0085**

**Molecular Dynamics Studies of Quenching Rate Effects on Short to Medium Range order in Amorphous Structure of Zr50Cu50 Metallic Glasses**

S. C. Mun<sup>1</sup>, S. C. H. Lee<sup>1</sup>, J. H. Jo<sup>1</sup>, J. T. Kim<sup>1</sup>, E. J. Yeo<sup>1</sup>, H. S. Nam<sup>2</sup>, P. R. Cha<sup>2</sup>, and K. B. Kim<sup>1\*</sup>

<sup>1</sup>Sejjing Univ., Korea

<sup>2</sup>Kookmin Univ., Korea

**27-PA-081-0158**

**In-situ Monitoring of Micro-scale PWSCC of Ni-based Alloys in a Simulated Primary Water Chemistry of PWR using an EN-DCPD Technique**

12<sup>th</sup> International Symposium on Novel and Nano Materials

Sung-Woo Kim<sup>1\*</sup>, Yeon-Ju Lee<sup>1,2</sup>, and  
Seong-Sik Hwang<sup>1</sup>

<sup>1</sup>Korea Atomic Energy Research Institute, Korea

<sup>2</sup>Univ. of Science and Technology, Korea

27-PA-082-0179

**Real-Time Monitoring of Charge/Discharge  
Degradation and Reliability of Lithium Ion  
Secondary Battery by using Acoustic  
Emission Technique**

Chan-Yang Choi, Jai-Won Byeon\*

Seoul Nat'l. Univ. of Science and Technology,  
Korea

27-PA-083-0205

**Acoustic In-situ Monitoring of Low Temperature  
Degradation of 3Y-TZP Zirconia Ceramic**

Kaige Wu, Chan-Yang Choi, Seung-Mi Lee,  
and Jai-Won Byeon\*

Seoul Nat'l. Univ. of Science and Technology,  
Korea

27-PA-084-0270

**Catalyst Characteristic of Hybrid Pt/SiO<sub>2</sub>  
Powder by Spray Pyrolysis Process**

Jaecheol Yoon, Jin Ho Choi, Hye Young  
Koo, and Jung-Yeul Yun\*

Korea Institute of Materials Science, Korea

Tuesday, 28 August 2012

**Oral Session**

Room A

10:50 ~ 12:10

**Symposia** : Advanced Powder Metallurgy

**Chairman** : Prof. M. L. Ovecoglu (Istanbul  
Technical Univ., Turkey)

28A-I-11-0332 [Invited Lecture]

**Advances in Processing of PM Microcomponents  
using a Bimodal Mixture of Micro-Nano  
Powders**

Jai-Sung Lee\*, Joon-Phil Choi, Hyun-Gon Lyu,  
and Woo-Kyung You

Hanyang Univ., Korea

28A-A-07-0218

**Effects of Alloying Elements on the Sintering  
of Elementally Mixed Titanium Powder Alloys**

Moontae Kim\*, Hyungsik Chung<sup>2</sup>

<sup>1</sup>Sinteron Co., Ltd., Korea

<sup>2</sup>Ajou Univ., Korea

28A-A-08-0287

**Effect of Cold Deformation on the Microstructure  
and Transformation Properties of Fe-14Mn-  
6Si-9Cr-5Ni Shape Memory Alloy, Prepared  
by P/M Route**

A. U. Söyler<sup>1</sup>, B. Özkal<sup>1</sup>, and L. G. Bujoreanu<sup>2</sup>

<sup>1</sup>Istanbul Technical Univ., Turkey

<sup>2</sup>The "Gh.Asachi" Technical Univ., Romania

28A-A-09-0067

**Mechanical Properties of Extruded Al-Si-  
Fe-Cu-SiC Composite Materials**

S. Yang<sup>1</sup>, H. Rudianto<sup>1,2</sup>, J. Gwak<sup>1,3</sup>, T. S. Lim<sup>1</sup>,  
and Y. J. Kim<sup>1,\*</sup>

<sup>1</sup>Korea Institute of Materials Science, Korea

<sup>2</sup>Bukeyoung Nat'l. Univ., Korea

<sup>3</sup>Busan Nat'l. Univ., Korea

28A-A-10-0288

**Biodegradable Poly(Lactic Acid)/Multiwalled  
Carbon Nanotube Nanocomposites Fabricated  
Via Simple Technique**

Seok Geun Park<sup>1</sup>, Abdalla Abdal-hay<sup>1,2</sup>,  
Do Yeon Jung<sup>1</sup>, Jae Kyoo Lim<sup>1\*</sup>  
<sup>1</sup>Chonbuk Nat'l. Univ., Korea,  
<sup>2</sup>South valley of Univ., Egypt

==== Panel Discussion ====

**Room B** **10:50 ~ 12:10**

**Simposia** : Energy & Nuclear Materials

**Chairman** : Dr. Yong Hwan Jeong (Korea  
Atomic Energy Research Institute,  
Korea)

**28B-I-12-0160 [Invited Lecture]**

**Development of Advanced Nuclear Materials  
for Future Nuclear Systems in Korea**

Yong Hwan Jeong\*, Weon Ju Kim, Dong Jin  
Kim, Junhyun Kwon, Jinsung Jang, and Tae  
Kyu Kim

Korea Atomic Energy Research Institute, Korea

**28B-B-09-0162**

**Effects of Oxygen Concentration on the Size  
Distribution of Oxide Particles in 12Cr ODS  
Steel**

Tae Kyu Kim\*, Chang Hee Han, Jinsung Jang  
Korea Atomic Energy Research Institute,  
Korea

**28B-B-10-0172**

**Rate Theory Based Modeling of Defects  
Evolution in Reactor Pressure Vessel  
Steels: Application to Irradiation Hardening**

Gyeong-Geun Lee\*, Yong-Bok Lee, Min-  
Chul Kim, and Junhyun Kwon  
Korea Atomic Energy Research Institute, Korea

**28B-B-11-0181**

**Evaluation of SA508 Gr4N High Strength  
Low Alloy Steel for Application to Nuclear  
Pressure Vessel**

Bong-Sang Lee\*, Min-Chul Kim, Ki-Hyoung  
Lee, and Sang-Gyu Park  
Korea Atomic Energy Research Institute,  
Korea

**28B-B-12-0025**

**The Corrosion Behavior of Ni-Cr-Fe Alloy  
Applied with Nano-TiO<sub>2</sub> in High Temperature  
Caustic Water**

Kyung Mo Kim\*, Eun Hee Lee, and Do  
Haeng Hur  
Korea Atomic Energy Research Institute,  
Korea

==== Panel Discussion ====

**Wednesday, 29 August 2012**

**Oral Session**

**Room A** **10:50 ~ 12:10**

**Simposia** : Advanced Powder Metallurgy

**Chairman** : Dr. Yong-Jin Kim (Korea Institute  
of Materials Science, Korea)

**29A-A-11-0211**

**Development for Fabrication of Refined  
Silicon Nanoparticles by Transferred arc  
Plasma System**

Byungkwon Kim<sup>1,2</sup>, Jungho Hwang<sup>1</sup>, Jeong-  
Yeol Kim<sup>2</sup>, Dongho Park<sup>2,\*</sup>  
<sup>1</sup>Yonsei Univ., Korea

12<sup>th</sup> International Symposium on Novel and Nano Materials

<sup>2</sup>Korea Institute of Industrial Technology,  
Korea

29A-A-12-0286

**Enhancing the Sinterability of ZnO  
Nanopowders Via Short Time Cryogenic  
Milling**

Aziz Genç<sup>\*</sup>, Şeyma Duman, Burak Özkal, M.  
Lütfi Öveçoğlu  
Istanbul Technical Univ., Turkey

29A-A-13-0147

**Synthesis of High Purity  $\beta$ -SiC Powders  
Synthesized by Modified Carbothermal  
Reduction using TEOS and Phenol Resin  
Mi-Rae Youm**<sup>1,2</sup>, Young-Churl Cho, Sang-  
Whan Park<sup>1\*</sup>

<sup>1</sup>Korea Institute of Science and Technology,  
Korea

<sup>2</sup>Univ. of Seoul, Korea

29A-A-14-0202

**Characterization and Cell Performance of  
Al Paste with an Inorganic Binder of Bi<sub>2</sub>O<sub>3</sub>-  
B<sub>2</sub>O<sub>3</sub>-ZnO System in Si Solar Cells**

Bit-Na Kim<sup>1,2</sup>, Do-Hyung Kim<sup>1</sup>, Hyung Jun  
Kim<sup>1</sup>, Heon Lee<sup>2</sup>, Hyo Sik Chang<sup>2</sup>, and  
Sung-Soo Ryu<sup>1\*</sup>

<sup>1</sup>Korea Institute of Ceramic Engineering and  
Technology, Korea

<sup>2</sup>Korea Univ., Korea

<sup>3</sup>Chungnam Nat'l. Univ., Korea

===== Lunch (12:10~13:00) =====

**Room A**

**13:00 ~ 14:20**

**Simposia** : Advanced Material Processing

**Chairman** : Prof. Orhan Uzun  
(Gaziosmanpasa Univ., Turkey)

29A-A-15-0099

**Cu based Sputtering Target Materials for  
Solar Cell Manufactured by Cold Spray  
Deposition**

Kee-Ahn Lee<sup>1\*</sup>, Ji-Sang Yu<sup>1</sup>, Dong Yong  
Park<sup>2</sup>, and Hyung-Jun Kim<sup>3</sup>

<sup>1</sup>Andong Nat'l. Univ., Korea

<sup>2</sup>Tae-Kwang Tech., Korea

<sup>3</sup>Research Institute of Industrial Science &  
Technology, Korea

29A-A-16-0139

**Supercritical Carbon Dioxide Assisted  
Synthesis of Nanostructured Magnesium  
Compound Particles**

Sang Woo Kim<sup>\*</sup>, Hee Chul Yeom, and Dong  
Ju Moon

Korea Institute of Science and Technology,  
Korea

29A-A-17-0144

**Microstructural Control of Particle-Stabilized  
Zirconia Toughened Alumina Foams Produced  
by Direct Foaming Method**

Rizwan Ahmad<sup>1</sup>, In-Hyuck Song<sup>1,2\*</sup>, Jang-  
Hoon Ha<sup>2</sup>, Yoo-Dong Hahn<sup>2</sup>

<sup>1</sup>Univ. of Science & Technology, Korea

<sup>2</sup>Korea Institute of Materials Science, Korea

===== Break (14:20~14:40) =====

12<sup>th</sup> International Symposium on Novel and Nano Materials**Room A** 14:40 ~ 16:00**Symposia** : Advanced Material Processing**Chairman** : Prof. Kee-Ahn Lee (Andong Nat'l. Univ., Korea)**29A-A-18-0187****Enhancement of Transparency of Nanoporous Silica Aerogels by Ambient Drying**Young-Jei Oh\*, Kyung-Ho Kim

Korea Institute of Science &amp; Technology, Korea

**29A-A-19-0313****Effect of Particle Boundary on Soft Magnetic Properties of Fe-6.5wt.%Si Sheet Consolidated by Powder Hot Rolling**H. J. Kim<sup>1\*</sup>, J. C. Bae<sup>1</sup>, H. J. Lee<sup>2</sup> and M. Y. Huh<sup>2</sup><sup>1</sup>Korea Institute of Industrial Technology, Korea<sup>2</sup>Korea Univ., Korea**29A-A-20-0342****Fabrication Process of Inorganic-Thermoelectric Nanocomposites using Carbon Nanotubes**Kyung Tae Kim\*, Hye Young Koo, and Gook Hyun Ha

Korea Institute of Materials Science, Korea

**29A-A-21-0344****Fabrication of Silver Powder Added Polypropylene Matrix Composites via Injection Molding**Kübra Yumakgil, Burak Özkal\*

Istanbul Technical Univ., Turkey

**Room B** 10:50 ~ 12:10**Symposia** : Energy & Nuclear Materials**Chairman** : Dr. Chang Kyu Rhee (Korea Atomic Energy Research Institute, Korea)**29B-I-14-0347 [Invited Lecture]****The Effect of Neutron and Mixed Gamma/ Neutron Irradiation on The Solar Parameters of Borosilicate Glass**N. Baydoğan\*, A. B. Tugrul

Istanbul Technical Univ., Turkey

**29B-B-14-0112****Optical Properties and Thermal Stability of Ultrathin TaN-Ag-Si Films for Low Emissivity Applications**Sivasankar Reddy Akepati<sup>1</sup>, HoTak Yu<sup>2</sup>, Chadraseshar Loka<sup>2</sup>, and Kee-Sun Lee<sup>1,2\*</sup><sup>1</sup>Cheonan City, Korea<sup>2</sup>Kongju Nat'l. Univ., Korea

===== Lunch (12:10~13:00) =====

**Room B** 13:00 ~ 14:20**Symposia** : Novel Functional Materials**Chairman** : Dr. Kun Jae Lee (Institute for Advanced Engineering, Korea)  
Prof. Yong Ho Choa (Hanyang Univ., Korea)**29B-I-15-0116 [Invited Lecture]****Exfoliation and Functionalization of BN Nanosheets and Fabrication of Densely**



**Packed Linear Assembly in Polymer Nanocomposites**

Hong-Baek Cho<sup>1,\*</sup>, Tadachika Nakayama<sup>1,\*</sup>, Hisayuki Suematsu<sup>1</sup>, Tsuneo Suzuki<sup>1</sup>, Weihua Jiang<sup>1</sup>, Satoshi Tanaka<sup>1</sup>, Yoshinori Tokoi<sup>2</sup>, and Koichi Niihara<sup>1</sup>

<sup>1</sup>Nagaoka Univ. of Technology, Japan

<sup>2</sup>Nagaoka Nat'l. College of Technology, Japan

**29B-I-16-0348 [Invited Lecture]**

**Sonochemical Synthesis of Nanomaterials**

Özgür Birer<sup>\*</sup>

Koç Univ., Turkey

**29B-B-15-0014**

**CFD Simulation of Chemical Vapor Deposition of Silicon Carbide in CH<sub>3</sub>SiCl<sub>3</sub>-H<sub>2</sub>system**

Kyoon Choi<sup>\*</sup>, Jun-Woo Kim

Korea Institute of Ceramic Engineering and Technology, Korea

**29B-B-16-0042**

**Synthesis of Pd Particle with Various Shapes by Ionic Liquids for HFP Hydrogenation Catalyst**

Chang Soo Kim<sup>1</sup>, Kye Sang Yoo<sup>2,\*</sup>

<sup>1</sup>Korean Institute for Science and Technology, Korea

<sup>2</sup>Seoul Nat'l. Univ. of Sci. & Tech., Korea

===== Break (14:20~14:40) =====

**Room B**

**14:40 ~ 16:00**

**Simposia : Novel Functional Materials**

**Chairman :** Prof. Hong-Baek Cho (Nagaoka Univ. of Technology, Japan)  
Dr. Chan Gi Lee (Institute for Advanced Engineering, Korea)

**29B-I-17-0349 [Invited Lecture]**

**Chemical and Electrochemical Processes for the Production of Nanotemplates, Nanowires, Nanopatterned and Functional Surfaces**

Mustafa Ürgen<sup>\*</sup>

Istanbul Technical Univ., Turkey

**29B-I-18-0343 [Invited Lecture]**

**Mesoporous Structures by Selective Dissolution of Alloys**

Frank Uwe Renner<sup>\*</sup>

Max-Planck-Institut für Eisenforschung, Germany

**29B-B-17-0068**

**Preparation of Conductive Metal Patterns using Cu Nano-Colloids Prepared Electrical Wire Explosion**

S. Yang<sup>1</sup>, J. Yoon<sup>1,2</sup>, J. Y. Yun<sup>1</sup>, T. S. Lim<sup>1</sup>, Y. J. Kim<sup>1</sup>, and J. H. Yu<sup>1,\*</sup>

<sup>1</sup>Korea Institute of Materials Science, Korea

<sup>2</sup>Busan Nat'l. Univ., Korea

**29B-B-18-0351**

**Green fluorescent nanodiamond conjugates and their possible applications for biosensing**

Joerg Opitz<sup>\*</sup>

Fraunhofer-Institut für Zerstörungstreue

Prüfverfahren, Germany

29B-B-19-0121

**Diameter-Controlled Carbon Nanotubes from metal catalyst nanoparticles with different sizes**

W. Zhao, I. J. Kim\*

Hanseo Univ., Korea

### Poster Session

Room A

16:00 ~ 18:00

**Simposia** : Advanced Powder Metallurgy

**Chairman** : Dr. Chang Kyu Rhee (Korea Atomic Energy Research Institute)

29-PB-001-0017

**Fabrication of W-1 wt% Ni Matrix Composites reinforced with TiB<sub>2</sub> and Y<sub>2</sub>O<sub>3</sub> via Mechanical Alloying at Ambient/Cryogenic Conditions and Activated Sintering Methods**

Özge Balci\*, Duygu Ağaoğullari, Hasan

Gökçe, M. Lütfi Öveçoğlu, and İsmail Duman  
Istanbul Technical Univ., Turkey

29-PB-002-0020

**Characteristic of Niobium Powder Produced under Reduction Temperature and Reductant**  
Jae-sik Yoon\*, Jae-yeol Yang<sup>1</sup>, and Byung Il Kim<sup>2</sup>

<sup>1</sup>Korea Basic Science Institute, Korea

<sup>2</sup>Suncheon Nat'l. Univ., Korea

29-PB-003-0024

**Fabrication and Mechanical Properties of B<sub>4</sub>C Sintered-body for Friction Stir Welding**

**Tool Application by Rapid Sintering Method**  
Hyun-Kuk Park<sup>1,2,\*</sup>, In-Jin Shon<sup>2</sup>, and Ik-Hyun Oh<sup>1</sup>

<sup>1</sup>Korea Institute of Industrial Technology, Korea

<sup>2</sup>Chonbuk Nat'l. Univ., Korea

29-PB-004-0078

**Mechanical Properties and Fabrication of Sintered-body Ti from Hydride dehydride Ti powder for Machine Tool by Spark Plasma Sintering Method**

Hyun-Kuk Park<sup>1,2</sup>, Hee-Jun Youn<sup>1</sup>, J ung-Han Ryu<sup>1</sup> and Ik-Hyun Oh<sup>1,\*</sup>

<sup>1</sup>Korea Institute of Industrial Technology, Korea

<sup>2</sup>Chonbuk Nat'l. Univ., Korea

29-PB-005-0080

**Fabrication and Property Evaluation of Ti Sputtering Target by SPS Process**

Hyun-Kuk Park<sup>1</sup>, Jung Han Ryu<sup>1</sup>, Hee-Jun Youn<sup>1</sup>, In-Jin Shon<sup>2</sup>, and Ik-Hyun Oh<sup>1,\*</sup>

<sup>1</sup>Korea Institute of Industrial Technology, Korea

<sup>2</sup>Chonbuk Nat'l. Univ., Korea

29-PB-006-0165

**Analysis of Potential use of Powder Metallurgy Route with Ti-12.5Mo-4Sn Beta Titanium Alloy for Load Bearing Implants**

J.J. Candel, P. Franconetti, F. Devesa, M. D. Salvador\*, V. Amigo

Universitat Politècnica de Valencia, Spain

12<sup>th</sup> International Symposium on Novel and Nano Materials

29-PB-007-0168

**A Study on the Debinding and Sintering Behavior of T42 High Speed Steel by Powder Injection Molding (PIM)**

Dae-Hwan Kim, Dong-Wook Park, Hye-Seong Kim, Kwon-Koo Cho, Su-Gun Lim, and In-Shup Ahn\*  
Gyeongsang Nat'l. Univ., Korea

29-PB-008-0191

**Microstructure and Mechanical Properties of Ultra Fine Grained TiC-Nicrobraz Hard Materials Fabricated by a High Frequency Induction Heated Sintering**

Kee-Do Woo\*, Duck-Soo Kang, Sang-Hyuk Kim, and In-Jin Shon  
Chonbuk Nat'l. Univ., Korea

29-PB-009-0226

**Effect of Crystallization Condition of FeSiBNbCu Amorphous Alloy on the Microwave Properties**

B.G. Moon\*  
Korea Institute of Materials Science, Korea

29-PB-010-0230

**Effect of Fe<sub>2</sub>O<sub>3</sub> and Bi<sub>2</sub>O<sub>3</sub> on Color and Transmittance of Dental Zirconia**

Seung Mi Lee, Jai-Won Byeon\*  
Seoul Nat'l. Univ. of Science and Technology, Korea

29-PB-011-0249

**A Study about Electro - Discharge - Sintering Process of the Ti-6Al-4V Powder doped with Hydroxyapatite**

YUJeong. Jo, Geonhoon Lee<sup>1</sup>, Sangmincheon<sup>1</sup>, Ukhyun. Joo<sup>2</sup>, WonHee. Lee<sup>1\*</sup>

<sup>1</sup>Sejong Univ., Korea

<sup>2</sup>Biomaterials Korea Inc., Korea

29-PB-012-0279

**Preparation and Characterization of Copper - Graphite Composites by Electrical Explosion of Wire in Liquid**

Jin-Chun Kim\*, T. N. Bien, L. H. Bac, B. K. Kim, Ji-Soon Kim  
Univ. of Ulsan, Korea

29-PB-013-0304

**Formation and Corrosion Behavior of Cu-Zr-Ti Bulk Metallic Glasses Prepared by Mechanical Alloying and Vacuum Hot-pressing**

P. Y. Lee\*  
Nat'l. Taiwan Ocean Univ., Taiwan

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Simposia : Energy & Nuclear Materials

Chairman : Dr. Chang Kyu Rhee (Korea Atomic Energy Research Institute)

29-PB-014-0062

**Preparation and Electrochemical Behaviors of Pitch-based Activated Carbon**

Gun-Young Heo, Soo-Jin Park\*  
Inha Univ., Korea

29-PB-015-0082

**Synthesis of Nano-scale Coated Manganese Oxide/Graphene and their High Electrochemical Performance**

Ki-Seok Kim, Soo-Jin Park\*  
Inha Univ., Korea

29-PB-016-0084

**Synthesis and Electrochemical Performance of Bi-functional Group doped Microporous Carbons**Ki-Seok Kim, Soo-Jin Park\*  
Inha Univ., Korea

29-PB-017-0114

**Electrospray Direct Deposition of Catalyst Layer on Membrane for Polymer Electrolyte Membrane Fuel Cells**Hyesook Joo<sup>1</sup>, Do Hyang Kim<sup>2</sup>, and Hanshin Choi<sup>1\*</sup><sup>1</sup>Korea institute of industrial technology, Korea<sup>2</sup>Yonsei Univ., Korea

29-PB-018-0117

**Consolidation Methods and Anisotropy of Beryllium**Suk Hoon Kang<sup>1\*</sup>, Jinsung Jang<sup>1</sup>, Yong-Hwan Jeong<sup>1</sup>, Tae Kyu Kim<sup>1</sup>, Yong Seok Choi<sup>2</sup>, and Kyu Hwan Oh<sup>2</sup><sup>1</sup>Korea Atomic Energy Research Institute, Korea<sup>2</sup>Seoul Nat'l. Univ., Korea

29-PB-019-0159

**Relation Between Surface Oxide and SCC of Alloy 600**Dong-Jin Kim<sup>\*</sup>, Hong Pyo Kim, and Seong Sik Hwang

Korea Atomic Energy Research Institute, Korea

29-PB-020-0171

**Effects of Partial Phase Transformation on Characteristics of 9Cr Nanostructured Ferritic Alloy**Ji-Hyun Yoon<sup>1\*</sup>, Yongbok Lee<sup>1</sup>, Suk-HoonKang<sup>1</sup>, Bong-Sang Lee<sup>1</sup>, Thak S. Byun<sup>2</sup>, and David T. Hoelzer<sup>2</sup><sup>1</sup>Korea Atomic Energy Research Institute, Korea<sup>2</sup>Oak Ridge Nat'l. Laboratory, USA

29-PB-021-0182

**Evaluation of Microstructure and Mechanical Properties in a Thick Plate of G91 Steel and Its Weld for High Temperature Nuclear System**Min-Chul Kim, Sang-Gyu Park, Ki-Hyoung Lee, Sung Ho Kim, and Bong-SangLee<sup>\*</sup>

Korea Atomic Energy Research Institute, Korea

29-PB-022-0197

**Influence of Physico-chemical Properties of Porous Carbon Nanofibers on Characteristics of Electric Double-layer Capacitors**Min-Jung Jung<sup>1</sup>, Yesol Kim<sup>1</sup>, Sanglck Lee<sup>2</sup>, and Young-SeakLee<sup>1\*</sup><sup>1</sup>Chungnam Nat'l. Univ., Korea<sup>2</sup>Value Creation Center GS Caltex Corporation, Korea

29-PB-023-0204

**Microstructures and Electrochemical Properties of Si-Ni-Ti Alloys Mixed with Various Carbon**Dae Yeong Jeong, Seong Min Bae, Won-Wook park, and Keun Yong Sohn<sup>\*</sup>  
Inje Univ., Korea

29-PB-024-0209

Seong Min Bae, Dae Yeong Jeong, Keun Yong Sohn, and Won-Wook Park<sup>\*</sup>  
Inje Univ., Korea

29-PB-025-0215

**Superconducting Properties of Powder-in-tube Processed Fe-Se-Te**

Jaeil Lee, Jung-Ho Ahn\*  
Andong Nat'l. Univ., Korea

29-PB-026-0231

**Characteristics of Intergranular Attack in Alloy 600 Steam Generator Tubing Observed in an Operating Plant and Laboratory**

Kyung Soo Im\*, Myung Sik Choi, Kyung Mo Kim, and Do Haeng Hur  
Korea Atomic Energy Research Institute,  
Korea

29-PB-027-0234

**Effect of Environmental Factors on the Dispersion Behavior of Iron Oxide in Aqueous Solution with Poly Acrylic Acid**

E. H. Lee\*, K. M. Kim, W. Y. Maeng, and D. H. Hur  
Korea Atomic Energy Research Institute,  
Korea

29-PB-028-0251

**Silicon Solar Cell Coupled with Graphene Electrodes for Charge Collection**

Sang-yeop Kim, Jeong-Ae Park, Eun-Young Lee, Young Cheol Lee, Taeyong Kim, Heung Woo Jeon\*, and Sungjin Kim  
Kumoh Nat'l. Institute of Technology, Korea

29-PB-032-0280

**Microstructural Characterization of Nano-sized Oxide Dispersion Strengthened Steel**

Jun-Hwa Hong, Chang Hee Han<sup>1</sup>, Tae Kyu Kim<sup>1</sup>, Yong Hwan Jeong<sup>1</sup>, Jinsung Jang<sup>1,\*</sup>,

Xiaodong Mao<sup>1,2</sup>, and Kyu Hwan Oh<sup>2</sup>

<sup>1</sup>Korea Atomic Energy Research Institute,  
Korea

<sup>2</sup>Seoul Nat'l. Univ., Korea

29-PB-033-0284

**Effect of Thermal Annealing Process on Mechanical of Behavior of STS 430-TiCxNy Composites Prepared by Spark Plasma Sintering**

Bunyod Allabergenov, Oybek Tursunkulov, Sang-yeop Kim, Eun-young Lee, Seung Jin Yun, Jeong-Ae Park, He Li Li, and Sungjin Kim  
Kumoh Nat'l. Institute of Technology, Korea

29-PB-034-0309

**Manufacturing of Hollow Carbon Ball from Carbon Blacks by Oxidation in CO<sub>2</sub>**

Jae-Seung Roh\*, Seung-Kuk Seo, Beom-Jun Kim, Hyun-yong Lee, Kwang-Ju Lee, Sang-Min Lee, and Suk-Hwan Kim  
Kumoh Nat'l. Institute of Technology, Korea

29-PB-035-0324

**Microstructure and Soft Magnetic Properties of Fe-4.5Si and Fe-6.5Si Disc Consolidated by Spark Plasma Sintering Process**

E.J. Cha, H.J. Kim\*  
Korea Institute of Industrial Technology, Korea

29-PB-036-0338

**Microstructure of Friction Stir Welded Modified 9Cr-1Mo Steel**

Jung G. Lee\*, M. K. Lee, and C. K. Rhee  
Korea Atomic Energy Research Institute,  
Korea

**Simposia** : Nanocomposite and Nanoporous materials

**Chairman** : Dr. Chang Kyu Rhee (Korea Atomic Energy Research Institute)

29-PB-037-0021

**Preparation and Characterization of Anode Materials using Expanded Graphite/Pitch Composite for High Power Li-ion Secondary Battery**

Hua Zheng, Mi-Jung Yoo, and Myung Soo Kim\*  
Myongji Univ., Korea

29-PB-038-0029

**Synthesis of Silver-deposited PAN/TiO<sub>2</sub> Nanofibers for Bactericidal and Photocatalytic Activity by Electron Beam Irradiation**

Joon-Pyo Jeun<sup>1,2</sup>, Hyun-Bin Kim<sup>1</sup>, Jung-Ki Park<sup>2</sup>, and Phil-Hyun Kang<sup>1\*</sup>

<sup>1</sup>Korea Atomic Energy Research Institute, Korea

<sup>2</sup>Korea Advanced Institute of Science and Technology, Korea

29-PB-039-0043

**Porous Magnesium Aluminate Spinel by Hydrothermal Process as Catalyst Support**

Xiuhui Wang<sup>1</sup>, Jianlong Yin<sup>1\*</sup>, Miaoyan Huang<sup>1</sup>, Shengbo Lu<sup>1</sup>, Hong Gao<sup>1</sup>, Jinlong Yang<sup>2</sup>

<sup>1</sup>Dalian Jiaotong Univ., China

<sup>2</sup>State Key Lab of New Ceramics and Fine Processing, China

29-PB-040-0045

**Synthesis and Visible Light Photocatalytic Activity of Ag spot-coated TiO<sub>2</sub>-SrO Composite**

## Powders

Hyeong-Chul Kim<sup>1</sup>, Jae-Kil Han<sup>2\*</sup>

<sup>1</sup>Univ. of Incheon, Korea

<sup>2</sup>Songdo Techno Park, Korea

29-PB-041-0064

**Electric Double Layer Capacitive Performance of Coal-tar Pitch-based Activated Carbons**

Min-Kang Seo<sup>1</sup>, Yun-Su Kuk<sup>1</sup>, and Soo-Jin Park<sup>2\*</sup>

<sup>1</sup>Jeonju Institute of Machinery and Carbon composites, Korea

<sup>2</sup>Inha Univ., Korea

29-PB-043-0092

**Effect of Alumina Nanofiller on Viscosity and Electrical Conductivity of Glass Nanocomposites for Solid Oxide Fuel Cell Seals**

Sung-Min Park, Su-Mi Jo, Sung Park<sup>1</sup>, Jae Chun Lee<sup>1\*</sup>, Jong-Ho Lee<sup>2</sup>, Hae-Weon Lee<sup>2</sup>, and Dong Bok Lee<sup>3</sup>

<sup>1</sup>Myongji Univ., Korea

<sup>2</sup>Korean Institute for Science and Technology, Korea

<sup>3</sup>Sungkyunkwan Univ., Korea

29-PB-044-0101

**The Effect of Vertically Aligned CNTs Length on the Mechanical and Electrical Properties in CNTs-Reinforced Polymer Composites**

Youngsoo Park<sup>1,2</sup>, Mongyong Huh<sup>1,2</sup>, Byung-Joo Kim<sup>2</sup>, Yun-Su Kuk<sup>1,2</sup>, Sin-Jae Kang<sup>1,2</sup>, and Kay-Hyeok An<sup>2\*</sup>

<sup>1</sup>Chonbuk Univ., Korea

<sup>2</sup>Jeonju Institute of Machinery and Carbon Composites, Korea

29-PB-045-0107

**Dye Sensitized Solar Cell Using TiO<sub>2</sub> Nanopowders and Nanoporous Composite Electrode**

Hong-Jin Kim<sup>1,2</sup>, Hae-Jin Hwang<sup>2</sup>, Chang-Yeoul Kim<sup>1,\*</sup>

<sup>1</sup>Korea Institute of Ceramic Eng. & Tech., Korea

<sup>2</sup>Inha Univ., Korea

29-PB-046-0109

**Cellulose Aerogel/Polymer Composite Membrane for Drug Delivery**

Eun-Byul Ko<sup>1,2</sup>, Sang-Il Hyun<sup>1</sup>, Don-Haeng Lee<sup>2</sup>, and Chang-Yeoul Kim<sup>1,\*</sup>

<sup>1</sup>Inha Univ., Korea

<sup>2</sup>Korea Institute of Ceramic Eng. & Tech., Korea

29-PB-047-0123

**Electromagnetic Interference Shielding Effectiveness of Fluorinated Graphene-filled Epoxy Matrix Nanocomposites**

Byung-Joo Kim<sup>1</sup>, Kyong-Min Bae<sup>2</sup>, Soo-Jin Park<sup>2</sup>, and Kay-Hyeok An<sup>1,\*</sup>

<sup>1</sup>Jeonju Institute of Machinery and Carbon Composites, Korea

<sup>2</sup>Inha Univ., Korea

29-PB-048-0130

**Preparation of Highly Dispersed Carbon Black using Liquid Phase Plasma Process.**

Kang-Seop Yun<sup>1</sup>, Hyo-Keun Ahn<sup>1</sup>, Bo-Ra Kim<sup>1</sup>, Sang-Chai Kim<sup>2</sup>, Woo-Seung Kang<sup>3</sup>, Sang-Chul Jung<sup>4</sup>, and Sun-Jae Kim<sup>1,\*</sup>

<sup>1</sup>Sejong Univ., Korea

<sup>2</sup>Inha Technical College, Korea

<sup>3</sup>Mokpo Nat'l. Univ., Korea

<sup>4</sup>Sunchon Nat'l. Univ., Korea

29-PB-049-0134

**Fabrication of Nano-Crystalline WC-0.5wt% Co-0.3wt% VC-0.4wt% Cr-1.0wt% Mo:C Composite by Sinter-HI Pandits Mechanical Properties.**

Dong Ki Kim<sup>1</sup>, Geun Sung Jung<sup>1</sup>, Je Ha Oh<sup>1</sup>, In Jin Shon<sup>2</sup>, Ki Yeol Kim<sup>3</sup>, Seung Pil Seo<sup>3</sup>, and Sin Jae Kang<sup>2,\*</sup>

<sup>1</sup>Jeonju Institute of Machinery and Carbon composites, Korea

<sup>2</sup>Chonbuk Nat'l. Univ., Korea

<sup>3</sup>High Material Cooperation Ltd., Korea

29-PB-050-013

**Peel Strength of Copper Circuit Layers on Nanoporous Anodic Aluminum Oxide Layer for High Power LED Packages**

Hyeong-Won Shin, Hyo-Soo Lee<sup>\*</sup>

Korea Institute of Industrial Technology, Korea

29-PB-051-0150

**Rapid Consolidation of Nanocrystalline Al<sub>2</sub>O<sub>3</sub> Reinforced Co Composite from Mechanically Alloyed Powders by High Frequency Induction Heated Sintering and its Mechanical Properties.**

Na-Ra Park, In-Jin Shon<sup>\*</sup>

Chonbuk Nat'l. Univ., Korea

29-PB-052-0152

**Rapid Synthesis and Consolidation of Nanostructured 2MgAl<sub>2</sub>O<sub>4</sub>-MgAl<sub>2</sub>Ti<sub>3</sub>O<sub>10</sub> Composite and Its Mechanical Properties**

In-Jin Shon<sup>\*</sup>, Hyun-Su Kang

Chonbuk Nat'l. Univ., Korea

29-PB-053-0153

**Mechanical Properties and Fabrication of Nanostructured TiN-AlN Composite by High-Frequency Induction Heated Sintering**

In-Jin Shon<sup>\*</sup>, Hyun-Bo Shim  
Chonbuk Nat'l. Univ., Korea

29-PB-054-0154

**Properties and Rapid Consolidation of TiCN-TiAl Compound by Pulsed Current Activated Sintering**

In-Jin Shon<sup>\*</sup>, Song-Lee Du  
Chonbuk Nat'l. Univ., Korea

29-PB-055-0163

**Irradiation Aging of Ternary SBR/CSM/Silica Nanocomposites**

M. Marinović-Cincović<sup>1\*</sup>, G. Marković<sup>2</sup>, V. Jovanović<sup>3</sup>, S. Samaržija-Jovanović<sup>3</sup>, and J. Budinski-Simendić<sup>4</sup>

<sup>1</sup>Univ. of Belgrade, Serbia

<sup>2</sup>Tigar, Serbia

<sup>3</sup>Univ. of Pristina, Serbia

<sup>4</sup>Univ. of NoviSad, Serbia

29-PB-056-0193

**Effects of Chemical Activation and Heat-treatment on Pitch-based Nonwoven Nanofibers for Gas-sensor Electrode**

Jin-hoon Kim<sup>1</sup>, Sung ho Lee<sup>2</sup>, and Young-Seak Lee<sup>1\*</sup>

<sup>1</sup>Chungnam Nat'l. Univ., Korea

<sup>2</sup>Korea Institute of Science and Technology, Korea

29-PB-057-0196

**Functionalized Carbon Molecular Sieves by**

**Oxyfluorination for Biomass Gas Separation**

Se Ho Cho<sup>1</sup>, Hye-Ryeon Yu<sup>1</sup>, Ki-Dong Kim<sup>2</sup>, Kwang Seok Oh<sup>3</sup>, and Young-Seak Lee<sup>1\*</sup>

<sup>1</sup>Chungnam Nat'l. Univ., Korea

<sup>2</sup>Korea Gas Corporation, Korea

<sup>3</sup>Hyundai Engineering & Construction Co., LTD., Korea

29-PB-058-0198

**Electrochemical and Structural Characteristics of Activated Carbon-Based Electrodes by Phosphoric Acid Treatment**

Hye-Ryeon Yu, Min-Jung Jung, and Young-Seak Lee<sup>\*</sup>

Chungnam Nat'l. Univ., Korea

29-PB-059-0199

**Improved CO<sub>2</sub>/CH<sub>4</sub> Separation Behavior of Carbon Molecular Sieve Treated by Amino-fluorination**

Do Young Kim<sup>1</sup>, Byong Chol Bai<sup>1</sup>, Se Ho Cho<sup>1</sup>, Ki-Dong Kim<sup>2</sup>, Young-Seak Lee<sup>1\*</sup>

<sup>1</sup>Chungnam Nat'l. Univ., Korea

<sup>2</sup>Korea Gas Corporation, Korea

29-PB-060-0201

**Porous PAN/Pitch Based Carbon Fabric Derived from Magnesium Oxide Template for Nitrogen Monoxide Gas Sensibility**

Yeseol Kim, Se Ho Cho, and Young-Seak Lee<sup>\*</sup>

Chungnam Nat'l. Univ., Korea

29-PB-061-0236

**Hydroisomerization of N-dodecane Over Pt/Al-MCM-48**

Hyung Won Lee<sup>1</sup>, Kwang-Eun Jeong<sup>2</sup>, Soon Yong Jeong<sup>2</sup>, Jeong Sik Han<sup>2</sup>,



Sung Hoon Park<sup>4</sup>, Jong-Ki Jeon<sup>5</sup>, and  
Young-Kwon Park<sup>1\*</sup>

<sup>1</sup>Univ. of Seoul, Korea

<sup>2</sup>Korea Research Institute of Chemical  
Technology, Korea

<sup>3</sup>Agency for Defense Development, Korea

<sup>4</sup>Sunchon Nat'l. Univ., Korea

<sup>5</sup>Kongju Nat'l. Univ., Korea

29-PB-062-0250

**Crystallization Mechanism and Grain Growth  
of Amorphous Fe-Si-B-Nb-Cu Base Alloy  
Ribbons Containing a Small Amount of  
Additional Elements**

Seul Ki Nam, Sung Choon Yoon, Keun Yong  
Sohn, and Won-Wook Park<sup>\*</sup>  
Inje Univ., Korea

29-PB-063-0272

**Manufacturing of Hybrid Nano Particles in  
Various Pt Salt Solvent by Electrical Wire  
Explosion Method**

Jin-Ho Choi, Jae-Cheol Yoon,  
Hye-Young Koo, and Jung-Yeul Yun<sup>\*</sup>  
Korea Institute of Materials Science, Korea

29-PB-064-0285

**Air Spray Jet of Biodegradable Poly(Lactic  
Acid)/ Hydroxyapatite Hybrid Composite  
Mats for Tissue Engineering Applications**

Abdalla Abdal-hay<sup>1,2</sup>, Seok Geun Park<sup>1</sup>,  
Do Yeon Jung<sup>1</sup>, Jae Kyoo Lim<sup>1\*</sup>  
<sup>1</sup>Chonbuk Nat'l. Univ., Korea,  
<sup>2</sup>South valley of Univ., Egypt

29-PB-065-0290

**Dehydration of 2-Butanol over Platinum**

**Supported on Ferrierite**

Jung-hyun Bae<sup>1</sup>, Young-Kwon Park<sup>2</sup>,  
Jong-Ki Jeon<sup>1\*</sup>

<sup>1</sup>Kongju Nat'l. Univ., Korea.

<sup>2</sup>Univ. of Seoul, Korea

29-PB-066-0297

**Production and Characterization of Undoped  
and Ag and B Doped ZnO Nanoparticles via  
Spray Drying and Thermal Decomposition  
Techniques**

Seyma Duman, Burak Özkal<sup>\*</sup>  
Istanbul Technical Univ., Turkey

29-PB-067-0318

**Study on Optical Interference Effect of  
Graphene-based Films on SiO<sub>2</sub> and Si<sub>3</sub>N<sub>4</sub>  
Dielectric Films**

Inhwa Jung, Kyong-Yop Rhee<sup>\*</sup>  
Kyung Hee Univ., Korea

29-PB-068-0319

**Experimental Investigation on the Conductive  
Behavior of Carbon Nanotube Reinforced  
Natural Polymer Nanocomposites**

J. H. Lee, K. Y. Rhee<sup>\*</sup>  
Kyung Hee Univ., Korea

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**Simposia : Novel Functional Materials**

**Chairman : Dr. Chang Kyu Rhee (Korea  
Atomic Energy Research Institute)**

29-PB-069-0011

**Characteristic of CdSe and CdSe/CdS  
Quantum Dots with Synthesis Condition**  
Nu Si A Eom<sup>1,2</sup>, Taek-Soo Kim<sup>1</sup>,

Yong-Ho Choa<sup>2</sup> and Bum Sung Kim<sup>1\*</sup>

<sup>1</sup>Korea Institute of Industrial Technology, Korea

<sup>2</sup>Hanyang Univ., Korea

**29-PB-070-0031**

**Fabrication and Sensing property for conducting polymer nanowire based biosensor for detection of immunoglobulin G**

Eun-Sil Park<sup>1</sup>, Dae-Hwan Jang<sup>1</sup>, Young-In Lee<sup>1</sup>, Chan Woo Jung<sup>1</sup>, Dongwoo Lim<sup>1</sup>, Bum Sung Kim<sup>2</sup>, Young-keun Jeong<sup>3</sup>, Nosang V. Myung<sup>4</sup>, and Yong-Ho Choa<sup>1\*</sup>

<sup>1</sup>Hanyang Univ., Korea

<sup>2</sup>Korea Institute of Industrial Technology, Korea

<sup>3</sup>Pusan Nat'l. Univ., Korea

<sup>4</sup>Univ. of California Riverside, USA

**29-PB-071-0035**

**Enhanced Electromagnetic Wave Absorption Properties of Fe-Ni Alloy Nanowires Prepared by Electrospinning Method**

Sang-Kwan Lee<sup>1</sup>, Dae-Hwan Jang<sup>2</sup>, Sang-Geun Cho<sup>2</sup>, Sang-Bok Lee<sup>1</sup>, Young-In Lee<sup>2</sup>, Eun-sil Park<sup>2</sup>, Bum Sung Kim<sup>3</sup>, Jongryoul Kim<sup>2</sup>, and Yong-Ho Choa<sup>2\*</sup>

<sup>1</sup>Korea Institute of Machinery & Materials, Korea

<sup>2</sup>Hanyang Univ., Korea

<sup>3</sup>Korea Institute of Industrial Technology, Korea

**29-PB-072-0036**

**Production of Titania-Silica Aerogel Powders by Cost-effective Facile Process**

You Na Kim, Godlisten N. Shao, Sun Jeong Jeon, and Hee Taik Kim\*  
Hanyang Univ., Korea

**29-PB-073-0038**

**Preparation of SiO<sub>2</sub>/TiO<sub>2</sub> Composite Materials via with Industrial by-product of Carbon Dioxide Gas**

Sun Jeong Jeon, You Na Kim, Si Nae Song, and Hee Taik Kim\*

Hanyang Univ., Korea

**29-PB-074-0075**

**A Spherical Silica Aerogel/Magnetite Nanocomposite by Simple Synthesis Technique**

Jun Sung Lee, Mi Young Yoon, Namjung Hur, and Hae Jin Hwang\*

Inha Univ., Korea

**29-PB-075-0098**

**Low Current Resistive Switching Behavior in Semiconductor/Ferroelectric Coupling**

Hongsu Park<sup>2\*</sup>, Young Woong Moon<sup>1</sup> and Duck Kyun Choi<sup>1</sup>

<sup>1</sup>Hanyang Univ., Korea

<sup>2</sup>SK Hynix semiconductor inc., Korea

**29-PB-076-0105**

**Microstructure of Cu/SiC Composite Powders Derived from Cu-nitrate and Polycarbosilane**

Sung-Tag Oh\*, Sunmi Park, Won-Suk Lee, Na-Yeon Kwon, and Doh-Hyung Riu  
Seoul Nat'l. Univ. of Science and Technology, Korea

**29-PB-077-0122**

**Carbon Nanotube Formation and Application using Zeolite Template**

W. Zhao, I. J. Kim\*  
Hanseu Univ., 3Korea

29-PB-078-0124

**Effect of Heat-treatment on the PL Spectra and Photocatalytic Properties of Solution Combusted ZnO Nanopowders**

Sung Park<sup>1\*</sup>, Ji Hye Kim<sup>1</sup>, Gil Rak Choi<sup>1</sup>, Youn Cheol Kim<sup>2</sup>, Jae Chun Lee<sup>1</sup>, and Ju Hyeon Lee<sup>3</sup>

<sup>1</sup>Myongji Univ., Korea

<sup>2</sup>Kongju Nat'l. Univ., Korea

<sup>3</sup>Sun Moon Univ., Korea

29-PB-079-0140

**Microstructure of Porous Tungsten Fabricated by Freeze-Drying and Hydrogen Reduction of Tungsten Oxide/Camphene Slurries**

Young-Sook Lee<sup>1</sup>, Yong-Ho Choa<sup>1</sup>, Sung-Tag Oh<sup>2</sup>, and Chang-Yong Hyun<sup>2\*</sup>

<sup>1</sup>Hanyang Univ., Korea

<sup>2</sup>Seoul Nat'l. Univ. of Science and Technology, Korea

29-PB-080-0148

**Influence of Magnetic and Dielectric Loss of Polymer Composites Containing Magnetic Flake Particles (Sendust, Permalloy) on the Noise Absorption in Microstrip Line**

Joon-Hee Lim, Sung-Soo Kim<sup>\*</sup>

Chungbuk Nat'l. Univ., Korea

29-PB-081-0149

**Preparation of Ag-coated Hollow Microspheres by Electroless Plating for the Application to Lightweight Microwave Absorbers**

Wook-Joong Kim, Sung-Soo Kim<sup>\*</sup>

Chungbuk Nat'l. Univ., Korea

29-PB-082-0220

**Fabrication of Photo-luminescent Silicon Quantum Dots using Photo-induced Chemical Etching**

B. -S. Kim<sup>1</sup>, W. -B. Kim<sup>2\*</sup>

<sup>1</sup>Korea Institute of Industrial Technology, Korea

<sup>2</sup>Dankook Univ., Korea

29-PB-083-0289

**Synthesis of Large-Scale of Few-layered Graphene Films using a Chemical Vapor Deposition and Surface Studies of the Resulting Films**

Oybek Tursunkulov, Bunyod Allabergenov, Sang-Yeop Kim, Eun-young Lee, Jeong-Ae Park, He Li Li, and Sungjin Kim<sup>\*</sup>  
Kumoh Nat'l. Institute of Technology, Korea

29-PB-084-0339

**The Role of Multi-walled Carbon Nanotube on the Magnetic Properties of Cobalt Oxide Powders**

Kyung Tae Kim<sup>1\*</sup>, Eun-Hye Shin<sup>1</sup>,

Jürgen Eckert<sup>2</sup>

<sup>1</sup>Korea Institute of Materials Science, Korea

<sup>2</sup>Leibniz-IFW Dresden, Germany

29-PB-085-0340

**Al-AlN Composite Manufactured by Gas Reaction Method for High Thermal Conductivity and Low Thermal Expansion**

Hyo-Jin Kim<sup>1,2</sup>, Kyung-Won Park<sup>1</sup>, Hye-Jung Jang<sup>1</sup>, Kun-Bae Lee<sup>3</sup>, Jae-Chul Lee<sup>2</sup>, and Jae-Pyoung Ahn<sup>1\*</sup>

<sup>1</sup>Korea Institute of Science and Technology, Korea

<sup>2</sup>Korea Univ., Korea

<sup>3</sup>Kookmin Univ., Korea

29-PB-086-0341

**Euler Buckling Behavior and Electrical Contact Resistance of Highly Flexible Single Crystalline Au Nanowire**

Jong-Hyun Seo<sup>1,2</sup>, Yigil Cho<sup>1</sup>, Tae-Yeon Sung<sup>2</sup>, Kun-Bae Lee<sup>3</sup>, In-Suk Choi<sup>1</sup>, and Jae-Pyoung Ahn<sup>1\*</sup>

<sup>1</sup>Korea Institute of Science and Technology, Korea

<sup>2</sup>Korea Univ., Korea

<sup>3</sup>Kookmin Univ., Korea

**Symposia** : Energy & Nuclear Materials

**Chairman** : Dr. Chang Kyu Rhee (Korea Atomic Energy Research Institute)

29-PB-087-0269

**The Effects of Synthesis Temperatures and Times on Physical Properties and Catalytic Activities of Synthesized Mesoporous ZSM-5 Zeolites**

S. Vichaphund<sup>1</sup>, D. Aht-Ong<sup>1</sup>, V. Sricharoenchaikul<sup>1</sup>, and D. Atong<sup>2,\*</sup>

<sup>1</sup>Chulalongkorn Univ., Thailand

<sup>2</sup>Nat'l. Metal and Materials Technology Center, Thailand

Thursday, 30 August 2012

### Oral Session

Room A

09:00 ~ 10:20

**Symposia** : Nanocomposite and Nanoporous materials

**Chairman** : Prof. Soo-Jin Park (Inha Univ., Korea)

30A-I-19-0326 [Invited Lecture]

**Defect Structure and Mechanical Properties of Metal Matrix – Carbon Nanotube Composites**

Jenő Gubicza<sup>1,\*</sup>, Hyoung Seop Kim<sup>2</sup>

<sup>1</sup>Eötvös Lorand Univ., Hungary

<sup>2</sup>Pohang Univ. of Science and Technology, Korea

30A-I-20-0071 [Invited Lecture]

**Formation of Hollow Copper Oxide by Oxidation of Cu Nanoparticles**

J. -G. Lee<sup>1,\*</sup>, R. Nakamura<sup>2</sup>, Y. -S. Cho, J. -H. Yu<sup>1</sup>, and C. -J. Choi<sup>1</sup>

<sup>1</sup>Korea Institute of Materials Science, Korea

<sup>2</sup>Osaka Univ., Japan

30A-A-22-0291

**Size Effect on Equilibrium Atomic Structure of Pt-Based Bimetallic Nanoparticles**

Ho-Seok Nam<sup>1,\*</sup>, Kayoung Yun<sup>1</sup>, and Seung-Chul Lee<sup>2</sup>

<sup>1</sup>Kookmin Univ., Korea

<sup>2</sup>Korea Institute of Science and Technology, Korea

12<sup>th</sup> International Symposium on Novel and Nano Materials

30A-I-21-0189 [Invited Lecture]

**Influence of Reducing Agents and a Stabilizing Agent on the Preparation of Nano-Size Platinum Metals**

Sang Chai Kim<sup>1\*</sup>, Sang Chul Jung<sup>2</sup>,  
Young Kwon Park<sup>3</sup>, Sun-Jae Kim<sup>4</sup>, and  
Seong Gyu Seo<sup>5</sup>

<sup>1</sup>Mokpo Nat'l. Univ., Korea

<sup>2</sup>Sunchon Nat'l. Univ., Korea

<sup>3</sup>Univ. of Seoul, Korea

<sup>4</sup>Sejong Univ., Korea

<sup>5</sup>DChonnam Nat'l. Univ., Korea

**Room A**

**10:20 ~ 11:10**

**Symposia** : Nanocomposite and  
Nanoporous materials

**Chairman** : Dr. Jenó Gubicza (Eötvös Loránd  
Univ., Hungary)

30A-I-22-0350 [Invited Lecture]

**Functionalized Nanodiamond – New Perspective  
Material for Smart Coatings and Biomedical  
Application**

Juergen Schreiber<sup>\*</sup>

Fraunhofer-Institut für Zerstörungstreue  
Prüfverfahren, Germany

30A-A-23-0106

**Magnetite Nanoparticles in Hybrid Aerogel  
and Its Hyperthermia Application**

Eun-Hee Lee<sup>1,2</sup>, Yong-Ho Choa<sup>2</sup>,

Chang-yeoul Kim<sup>1,\*</sup>

<sup>1</sup>Korea Institute of Ceramic Eng. & Tech.,  
Korea

<sup>2</sup>Hanyang Univ., Korea

**Room B**

**09:00 ~ 10:20**

**Symposia** : Resources & Recycling

**Chairman** : Dr. Sungkyu Lee (Institute for  
Advanced Engineering, Korea)  
Dr. Hyun Seon Hong (Institute  
for Advanced Engineering)

30B-B-20-0217

**Mechanical Properties of Al<sub>2</sub>TiO<sub>5</sub> Ceramics  
for High Temperature Application**

Dami Kim<sup>1,2</sup>, Hyungjun KIM<sup>1</sup>, Hyung-Tae  
Kim<sup>1</sup>, Jung Nam kung<sup>3</sup>, Ikjin Kim<sup>4</sup>,  
Seongcheol Choi<sup>4</sup>, and Sung-Soo Ryu<sup>1\*</sup>

<sup>1</sup>Korea Institute of Ceramic Engineering &  
Technology, Korea

<sup>2</sup>Hanyang Univ., Korea

<sup>3</sup>Hanseo Univ., Korea

<sup>4</sup>Research Institute of Industrial Science &  
Technology, Korea

30B-B-21-0188

**Fabrication of LiFeBO<sub>3</sub> and Li<sub>2</sub>MnSiO<sub>4</sub> Powders  
for Lithium Ion Battery**

Kun-Jae Lee<sup>\*</sup>, Lee-Seung Kang, Yun-Ho  
Jin, Hang-Chul Jung, and Hyun Seon Hong  
Institute for Advanced Engineering, Korea

30B-B-22-0047

**Study on Chemical Oxidative Precipitation  
to Recover Manganese Dioxide from Lithium  
Ion Battery**

Sung Ho Joo<sup>1,2</sup>, Jin Gu Kang<sup>1,2</sup>,

Shun Myung Shin<sup>1,2,\*</sup>

<sup>1</sup>Univ. of Science & Technology of Korea,  
Korea

<sup>2</sup>Korea Institute of Geoscience & Mineral

Resources, Korea

**30B-B-23-0237**

**Methanol Synthesis from Syngas Produced via Gasification of Municipal Solid Waste**

Gwan Hyung Lee<sup>1</sup>, Jong Wan Lim<sup>1</sup>, Jong-In Dong<sup>1</sup>, Sung Hoon Park<sup>2</sup>, Jong-Ki Jeon<sup>3</sup>, Yong-Taek Lim<sup>4</sup>, Young-Kwon Park<sup>1,\*</sup>

<sup>1</sup>Univ. of Seoul, Korea

<sup>2</sup>Sunchon Nat'l. Univ., Korea

<sup>3</sup>Kongju Nat'l. Univ., Korea

<sup>4</sup>Institute for Advanced Engineering, Korea

**30B-B-26-0323**

**Effect of Boron Addition on Soft Magnetic Properties of FeCo-Metalloid-Nb Amorphous Alloys**

J. Y. Cho, H. J. Kim\*

Korea Institute of Industrial Technology, Korea

**Room B**

**10:20 ~ 11:10**

**Simposia** : Energy & Nuclear Materials

**Chairman** : Prof. Nilgun Baydogan (Istanbul Technical Univ., Turkey)

**30B-B-24-0321**

**Microstructure and Soft Magnetic Properties of Fe-based Amorphous and Bulk Metallic Glass Alloys with Annealing Conditions**

J. H. Lee<sup>1,2,\*</sup>, H. J. Kim<sup>1</sup>, and D. H. Kim<sup>2</sup>

<sup>1</sup>Korea Institute of Industrial Technology, Korea

<sup>2</sup>Yonsei Univ., Korea

**30B-B-25-0322**

**Soft Magnetic Properties of Fe-based Soft Magnetic Composites with Oxide and Nitride Layer**

K. C. Hwang, H. J. Kim\*

Korea Institute of Industrial Technology, Korea



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## Organized by

-The Korean Powder Metallurgy Institute (KPMI)

-Istanbul Technical University (ITU)

**ISNNM-2012 Secretariat**

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