[P1] Nano Photonics & Nano Materials I

Date & Time  
November 7, 2013 (Thursday) 09:00-10:30

Room  
Room D / Lobby 1F

---

**P1-1**  
**Study of Air-gap Structure for the Improvement of Light Extraction in AlGaInP-Based LED**

Hwa Sub Oh1, Ho-Soung Ryu1, Sueng Ho Park1, Young Jin Kim2, Hyung Joo Lee2, Young Dae Cho3, Joon-Seop Kwak3, and Jong Hyeob Baek3

1KOPTI, Korea, 2AUK Corp., Korea, 3Sunchon Nat’l Univ., Korea

---

**P1-2**  
**Effects of n-Type AlGaAs Layer on Efficiency Improvement of Omnidirectional Reflective AlGaInP Light Emitting Diodes**

Hyung Joo Lee4, Young Dae Cho1, Young Jin Kim1, In Kyu Jang5, Seong Un Kim1, Choong Hun Lee2, Jae Hoon Kim5, Hwa Sub Oh3, and Su Chang Ahn5

1AUK Corp., Korea, 2Wonkwang Univ, Korea, 5KOPTI, Korea

---

**P1-3**  
**A Study of the Phosphorescent Light Emitting using the Cyclometalated Pt(II) Complexes**

Seokhwan Son1, Hwangyu Lee1, Cheehun Kwak1, Jihoon Lee3, Hogeun Ahn1, and Minchul Chung1

1Sunchon Univ., Korea, 3Korea Nat’l Univ. of Transportation, Korea

---

**P1-4**  
**Fabrication Characteristics of Silicon Nanowires via Electrochemical Electroless Etching Method**

ByeongSu Kang1, Chae Hwan Jeong1, Changheon Kim1, Bum Ho Choi1, Moo Sung Lee2, and Ho-Sung Kim2

1KITECH, Korea, 2Chonnam Nat’l Univ., Korea

---

**P1-5**  
**Photoluminescence Properties and Site Occupation of Eu3+ in Nanorod Bundles Crystal Ln4O(OH)9NO3:1%Eu (Ln=Y , Lu)**

Ling Li1,2, Hyeon Mi Noh2, Byung Kee Moo2, Byung Chun Choi2, and Jung Hyun Jeong2

1Hubei Univ., China, 2Pukyong Nat’l Univ., Korea

---

ICNST 2013 Secretariat  
5F. Daehan Bldg., #1018 Dunsan-Dong, Seo-Gu, Daejeon 302-120, Korea  
Tel : +82-42-472-7461 / Fax : +82-42-472-7459 / Mobile: +82-10-4660-5102  
E-mail : icnst2013@geni-pco.com / Web : http://www.icnst.com/icnst2013/
<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1-6</td>
<td>Crystal Growth and Luminescence Investigations of Ce, Eu co-doped YAG Nanocomposite Powders for Warm WLED</td>
<td>Hyun Kyoung Yang, Hyeon Mi Noh, Jung Hyun Jeong, KIER, Korea, Pykyong Nat’l Univ., Korea</td>
</tr>
<tr>
<td>P1-7</td>
<td>Photoluminescence Properties and Site Occupation of Eu³⁺ in Nanorod Bundles Crystal Ln₄O(OH)₉NO₃:1%Eu (Ln=Y, Lu)</td>
<td>Ling Li, Hyeon Mi Noh, Byung Kee Moon, Byung Chun Choi, Jung Hyun Jeong, Pykyong Nat’l Univ., Korea</td>
</tr>
<tr>
<td>P1-8</td>
<td>Effect of Sapphire Substrate Thickness on the Characteristics of 450nm InGaN/GaN Multi-Quantum Well Light-Emitting Diodes</td>
<td>Wael Z. Tawfik, Seo-Jung Bea, June Key Lee, Chonnam Nat’l Univ., Beni-Suef Univ., Egypt</td>
</tr>
<tr>
<td>P1-9</td>
<td>Synthesis and Luminescent Property of Poly (9-(3-Vinyl-Phenyl)-Anthracene)</td>
<td>Sunmi Lee, Beom-Soo Michael Park, Jaehyun Lee, Jongwook Park, The Catholic Univ. of Korea, Deerfield Academy, USA</td>
</tr>
<tr>
<td>P1-13</td>
<td>Photoluminescence Enhancement of Silole-Capped Silicon Quantum Dots Based on FRET</td>
<td>Seongwoong Kim, Bomin Cho, Honglae Sohn, Chosun Univ., Korea</td>
</tr>
<tr>
<td>P1-14</td>
<td>Effects of Nickel Cobalt Oxide Nanoparticles on Luminous Efficiency of Light-Emitting-Diodes.</td>
<td>Do-Hyun Kim, G.Mohan Kumar, Seung-hwan Yeon, Tae-Joon Son, Jinsub Park, Hanyang Univ., Korea</td>
</tr>
<tr>
<td>P1-15</td>
<td>Improvement of Light Extraction Efficiency of InGaN/GaN Blue Light Emitting Diodes using ZnO Nanostructure Arrays</td>
<td>Jong-Hyun Jeon, Seung-Jong Oh, Pan-Ju Choi, Young-Jin Kang, Ja-Yeon Kim, Min-Ki Kwon, Chosun Univ., KOPTI, Korea</td>
</tr>
</tbody>
</table>
P1-16 Highly Efficient White OLEDs using New Blue Fluorescence Emitter
Seungho Kim, Beomjin Kim, Jaehyun Lee, and Jongwook Park
The Catholic Univ. of Korea, Korea

P1-17 Current Efficiency Enhancements of Organic Light-Emitting Devices Fabricated Utilizing Phosphonic Functional Group Self-Assembled Monolayers
Min Sung Kim, Young Pyo Jeon, Young Woo Kim, Jae Geun Noh, and Tae Whan Kim
Hanyang Univ., Korea

P1-18 Luminance Mechanisms for White Organic Light-Emitting Devices Fabricated Utilizing a Tungsten Oxide Interlayer
Ki Hyun Kim, Young Pyo Jeon, Dong Chul Choo, and Tae Whan Kim
Hanyang Univ., Korea

P1-19 Investigation on p-type Doping of InAs Nanowires Grown via Vapor-Liquid-Solid and Vapor-Solid Growth Mechanism
Jeongwoo Hwang¹, Ari Lee², Myung Sang Kim¹,², Sang Jun Lee³, and Jae Cheol Shin¹
¹KOPTI, Korea, ²Chonnam Nat’l Univ., Korea, ³KRIS, Korea

P1-20 Improvement of Light Extraction in Blue GaN Based Light-Emitting Diodes Structures by using Polystyrene/SiO2 Core-Shell Nanospheres
Seung Hwan Yeon, Do-Hyun Kim, and Jinsub Park
Hanyang Univ., Korea

P1-21 Blue Phosphorescent Organic Light Emitting Diodes with Efficient Charge Balance by Two Types of Mixed Layers
Hyung Jin Yang¹, Ho Won Lee¹, Seok Jae Lee¹, Song Eun Lee¹, Yong Sun¹, Ja Ryong Koo³, Woo Young Kim², and Young Kwan Kim¹
¹Hongik Univ., Korea, ²Hoseo Univ., Korea

P1-22 Fabrication of AlN Nano-Structure for Deep-Ultraviolet Light Emitting Diodes
Daeyong Eom, Jinwan Kim, Kyungjae Lee, Minhwan Jeon, Cheon Heo, Jaedo Pyeon, and Okhyun Nam
Korea Polytechnic Univ., Korea
P1-23 Improvement of Light Extraction Efficiency using Nanoimprint Lithography and Semitransparent Conductor on Organic Light-Emitting Diodes

Ho Won Lee¹, Sang Jun Park², Hyung Jin Yang³, Song Eun Lee⁴, Seok Jae Lee¹, Jae Woo Lee⁵, Yong Sun⁶, Ja Ryong Koo⁷, Woo Young Kim⁸, Heon Lee⁴, and Young Kwan Kim¹
¹Hongik Univ., Korea, ²Korea Univ., Korea, ³Hoseo Univ., Korea

P1-24 Enhanced Quality (11-22) Semipolar GaN with Sidewall Lateral Epitaxial Overgrowth

Dae-Woo Jeon, Jae-Chul Song, Tae Hoon Jeong, Tak Jeong, Sang-Heung Lee, Jong Hyeob Baek, and Jin-woo Ju
KOPTI, Korea

P1-25 Fabrication of Silicon Nanowire Array by Metal-Assisted Chemical Etching

Jeongwoo Hwang¹, Ari Lee¹, Sang Jun Lee², and Jae Cheol Shin¹
¹KOPTI, Korea, ²KRISS, Korea

P1-26 Structural and X-ray Photoelectron Spectroscope Properties of Al-doped Zinc Oxide Thin Films on Si Substrate

Jin Jeong and Bong Ju Lee
Chosun Univ., Korea

P1-27 Reverse Current Characteristics of InP Gunn Diodes for W-band Waveguide Applications

Hyun-Seok Kim, Jun-Woo Heo, Seok-Kyu Choi, Dong-Sik Ko, and Jin-Koo Rhee
Dongguk Univ., Korea

P1-28 Synthesis and Characteristics of Fullerene Derivative Having a Hexyl Perylene Moiety Type as an N-type Material in Organic Solar Cell

Seong Hun Han, Gyu Min Kim, and Se Young Oh
Sogang Univ., Korea

P1-29 Optimal Fabrication of Organic Solar Cells using DMDCNQI as N-type Dopant

Seong Hun Han, Ae Na Lee, and Se Young Oh
Sogang Univ., Korea
P1-30  A Study of Structural and Photoluminescence for Al-doped CdO Thin Films
Jin Jeong and Bong Ju Lee
Chosun Univ., Korea

Jae-Geon Choi, Min-Ji Jo, and Dae-Gyu Moon
Soonchunhyang Univ., Korea

P1-32  Highly Efficient Quantum Dot Light Emitting-Devices by Dispersing Red Emitting CdSe/ZnS Nanoparticles into Poly(N-vinylcarbazole) Layer
Kang-Hee Kim, Jong-Cheol Jun, and Dae-Gyu Moon
Soonchunhyang Univ., Korea

P1-33  Synthesis of ZnS Microsphere by Template-Free Hydrothermal Method for Photocatalytic Reaction
Seo-Jin Park1, Ju-Young Park1,2, Do-Young Choi1, Kyung-Jun Hwang3, Soon-Do Yoon4, and In-Hwa Lee1
1Chosun Univ., Korea, 2Seoul Nat’l Univ., Korea, 3Univ. of California at San Diego, USA, 4Chonnam Nat’l Univ., Korea

P1-34  Preparation, Characterization and Photocatalytic Activity of Hollow CeO2 Structures using Biomass Template
Ju-Young Park1,2, Kyung-Jun Hwang1, and Sungho Jin3, and In-Hwa Lee1
1Chosun Univ., Korea, 2Seoul Nat’l Univ., Korea, 3Univ. of California at San Diego, USA

P1-35  Fabrication and Characterization of Ag Doped TiO2 Nanofibers for Photocatalytic Decomposition of 2-Chlorophenol using near-UV LED Process
Ju-II Kim1, Ju-Young Park1,2, and In-Hwa Lee1
1Chosun Univ., Korea, 2Seoul Nat’l Univ., Korea

P1-36  Photoluminescence Properties of Red-Emitting Ca3Sr3-x(PO4)4:xEu3+ Phosphors for White Light-Emitting Diodes
A. Hakeem and K. Park
Sejong Univ., Korea
<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1-37</td>
<td>Synthesis and Luminescence Properties of Blue Na(Sr1-x-yCax)PO4:yEu2+ Phosphors for White LED Applications</td>
<td>A. Hakeem and K. Park Sejong Univ., Korea</td>
</tr>
<tr>
<td>P1-38</td>
<td>Growth Behavior of Cyclic Chemical Vapor Deposited Al2O3 Layer for Passivation of OLEDs Lighting Devices</td>
<td>Ha Jun Jang1,2, Jae Seok An1, Cheol Young Park1, Jong Ho Lee1, and Bum Ho Choi1 1KITECH, Korea, 2Chonnam Nat’l Univ., Korea</td>
</tr>
<tr>
<td>P1-39</td>
<td>Blue Fluorescent Materials Composed of Anthracene-Aryl Amine-Anthracene Derivatives for OLEDs</td>
<td>Seul Bee Lee1, Ji Young Song1, Hyung Jin Yang1, Young Kwan Kim1, and Seung Soo Yoon1 1Sungkyunkwan Univ., Korea, 2Hongik Univ., Korea</td>
</tr>
<tr>
<td>P1-40</td>
<td>Blue Emitters Based on Anthracene-Aryl-Anthracene Moieties End-Capped with 1-naphthyl Groups for Organic Light-Emitting Diodes</td>
<td>Su Na Park1, Hye Jeong Kim1, Seok Jae Lee1, Song Eun Lee2, Young Kwan Kim2, and Seung Soo Yoon1 1Sungkyunkwan Univ., Korea, 2Hongik Univ., Korea</td>
</tr>
<tr>
<td>P1-41</td>
<td>Various Blue Emitting Materials Based on Pyrene Derivatives for Organic Light-Emitting Diodes</td>
<td>Hyeon Gu Kim1, Jhin-yeong Yoon1, Seok Jae Lee1, Ho Won Lee2, Young Kwan Kim2, and Seung Soo Yoon1 1Sungkyunkwan Univ., Korea, 2Hongik Univ., Korea</td>
</tr>
<tr>
<td>P1-42</td>
<td>Study on CuPc for Hole Injection Layer in OLED Devices</td>
<td>Hyeongi Lee, Youngwook Hwang, and Taeyoung Won Inha Univ., Korea</td>
</tr>
<tr>
<td>P1-43</td>
<td>Numerical Study on Organic Light Emitting Diodes with Distributed Bragg Reflector</td>
<td>Young Wook Hwang, Hyeon Gi Lee, and Tae Young Won Inha Univ., Korea</td>
</tr>
</tbody>
</table>
P1-44  Enhancement of Light Extraction Efficiency of Nonpolar a-Plane GaN Based LED by using Plasma Damage-Free Sputtering
Min Joo Park and Joon Seop Kwak
Sunchon Nat’l Univ., Korea

P1-45  Combined Effect of Carrier Localization and Polarity in Polar and Semipolar InGaN/GaN Quantum Wells
Hyeong-Young Hwang, Sang-Bae Choi, Dong-Seon Lee, and Young-Dahl Jho
GIST, Korea

P1-46  Topological Analysis of Photoluminescence in ZnO Nanoneedles.
Keung-ji Choi¹, Dong-min Kim¹, Hyeonjun Baek², Gyu-Chul Yi², and Young-dahl Jho¹
¹GIST, Korea, ²Seoul Nat’l Univ., Korea

P1-52  Molecular Dynamics Study of a Graphene Nanodisk Pressure Sensor
Sun-Young Kim, Ki-Sub Kim, and Jeong-Won Kang
Korea Nat’l Univ. of Transporation, Korea

P1-53  Fabrication, Structure, and Luminescence Properties of ZnTiO3/ZnO Coaxial Nanowires
Sunghoon Park, Youngho Mun, Hyunsung Ko, and Chongmu Lee
Inha Univ., Korea

P1-54  UV-Enhanced Gas Sensing Properties of ZnTiO3
Sunghoon Park, Hyunsung Ko, Soyeon An, and Chongmu Lee
Inha Univ., Korea

P1-55  Influence of Types of Magnetic Domain Walls on the Electrical Properties in NiFe Nanowires
Chunghee Nam
Hannam Univ., Korea
<table>
<thead>
<tr>
<th>Paper ID</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1-56</td>
<td>Complete Oxidation of Benzene Over CuO-CeO2 Catalysts Prepared using Different Process</td>
<td>Seong-Soo Hong, Pukyong Nat’l Univ., Korea</td>
</tr>
<tr>
<td>P1-57</td>
<td>Photocatalytic Decomposition of Methylene Blue over MIL-53 (Fe) Prepared using Microwave-assisted Process under Visible Light Irradiation</td>
<td>Nguyen Duy Trinh and Seong Soo Hong, Pukyong Nat’l Univ., Korea</td>
</tr>
<tr>
<td>P1-58</td>
<td>Fabrication and Characterization of Thermoelectric CrSi2 Compound by MA and Spark Plasma Sintering</td>
<td>Min-young An, Young Kim, and Chung-Hyo Lee, Mokpo Nat’l Univ., Korea</td>
</tr>
<tr>
<td>P1-59</td>
<td>Influence of Al Doping on Optical Band Gap Energy of Al-TiO2 Thin Films</td>
<td>Deuk Yong Lee¹, Young-Hun Kim², In-Kyu Lee³, Myung-Hyun Lee⁴, and Nam-Ihn Cho⁴</td>
</tr>
<tr>
<td></td>
<td></td>
<td>¹Daelim Univ., Korea, ²Korea Aerospace Univ., Korea, ³KICET, Korea, ⁴Sun Moon Univ., Korea</td>
</tr>
<tr>
<td>P1-60</td>
<td>Local Structural Properties and Growth Mechanism of ZnO Nanorods on SrTiO3</td>
<td>Zhenlan Jin, C.-I. Park, I.-H. Hwang, and S.-W. Han, Chonbuk Nat’l Univ., Korea</td>
</tr>
<tr>
<td>P1-61</td>
<td>High-Temperature Corrosion of Nano-Multilayered TiAlSiN Thin Films in Ar-0.2%SO2 Gases</td>
<td>Jae Chun Lee¹ and Dong Bok Lee²</td>
</tr>
<tr>
<td></td>
<td></td>
<td>¹Myongji Univ., Korea, ²Sungkyunkwan Univ., Korea</td>
</tr>
<tr>
<td>Paper No.</td>
<td>Title</td>
<td>Authors</td>
</tr>
<tr>
<td>----------</td>
<td>----------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>P1-63</td>
<td>Fabrication and Evaluation of CNT Reinforced Aluminum Matrix Composite by a Powder in Sheath Rolling Method</td>
<td>Seong-Hee Lee and Dong-Min Hong</td>
</tr>
<tr>
<td>P1-64</td>
<td>Redox-Induced Abnormal and Asymmetric Transport Properties of Ferrocene-Alkanethiolate Molecular Devices on Rigid and Flexible Substrates</td>
<td>Hyunhak Jeong, Dongku Kim, Hanki Lee, Wang-Taek Hwang, and Takhee Lee</td>
</tr>
<tr>
<td>P1-65</td>
<td>Schematics and Simulation of Nanoelectromechanical Relay Switch Based Graphene Nanoribbon</td>
<td>Sun-Young Kim, Ki-Sub Kim, and Jeong-Won Kang</td>
</tr>
<tr>
<td>P1-67</td>
<td>Impact of Nano-Pore Structure in Harden Non-Sintering Cement</td>
<td>Kyoung-Ju Mun², Won-Chun Park², Hyung-Sun Yoon³, Hyun-Mi Eum³, Sang-Chai Kim³, and Seong-Gyu Seo⁴</td>
</tr>
<tr>
<td>P1-68</td>
<td>Dispersion Effect Achievable on Electrical Resistivity of Graphite/PVB/CNT Composite Film Prepared via a Tape-Casting Process</td>
<td>Min-Young Kim¹, Bum Ho Choi¹, Moo Sung Lee², Hee Sook Noh³, and Ho-Sung Kim¹</td>
</tr>
<tr>
<td>P1-69</td>
<td>Non-Covalent Functionalization of Multi-Walls Carbon Nanotubes with Biodegradable and Thermal Responsive Block Copolymer</td>
<td>Thi Nga Tran¹, Thanh Binh Mai², Yeong-Soon Gal², and Kwon Taek Lim¹</td>
</tr>
<tr>
<td>Paper Number</td>
<td>Title</td>
<td>Authors</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| P1-70       | Dual Type High Density Plasma System Operating at Extremely Low Pressure Below 0.1Pa | Cheol Young Park¹, Ha Jun Jang¹,², Jae Seok An¹, Bum Ho Choi¹, and Jong Ho Lee¹  
¹KITECH, Korea, ²Chonnam Nat’l Univ., Korea |
| P1-71       | Preparation of High Density, High Uniformity Insulator Film at Extremely Low Pressure Below 1mTorr | Jae Seok An¹, Cheol Young Park¹, Ha Jun Jang¹,², Jong Ho Lee¹, and Bum Ho Choi¹  
¹KITECH, Korea, ²Chonnam Nat’l Univ., Korea |
Kyoto Univ., Japan |
| P1-73       | Titanium Silicon Oxide Nanoparticles Added Polymerization and Application as Ophthalmological Material | Min-jae Lee, Dong-Hyun Kim, Seon-Ahr Cho, Jung-Won No, and A-Young Sung  
Sehan Univ., Korea |
| P1-74       | Optical Application of Polymer Containing Silicon 2,9,16,23-Tetra-Tert-Butyl-29H31H-Phthalocyanine Dihydroxide and Titanium Silicon Oxide Nano Particles | Duck-Hyun Kim¹, Seon-Ahr Cho¹, Tae-Hun Kim², and A-Young Sung¹  
¹Sehan Univ., Korea, ²Baekseok Univ., Korea |
| P1-75       | Preparations of Platinum Nanoparticles and Their Catalytic Performances | Sang Chai Kim², Seong Won Nahm³, Young Kwon Park³, Sang Chul Jung³, and Seong Gyu Seo⁴  
³Mokpo Nat'I Univ., Korea, ⁴Univ. of Seoul, Korea, ⁴Sunchon Nat’l Univ, Korea, ⁴Chonnam Nat’l Univ., Korea |
| P1-76       | Temperature Dependence of Nonradiative Relaxation and Auger Recombination in CdxZn1-xTe/ZnTe Quantum Dots | Minh Tan Man and Hong Seok Lee  
Jeju Nat’l Univ., Korea |
Kyungho Kang, Girok Shin, and Kwangmin Lee
Chonnam Nat’l Univ., Korea

P1-78  Relation between Polymerization Rate and Fracture Strength of Ceramic Core in Gel-Casting Process
Eun-Hee Kim1, Geun-Ho Cho1, Yoon Suk Oh2, Je-Hyun Lee1, and Yeon-Gil Jung1
1Changwon Nat’l Univ., Korea, 2KICT, Korea

P1-79  Self-Assembly of CdTe Nanoparticles into Nanowires by a Specific Wavelength
Seung-Min Lee1, Hee Won Kim1, Suh-Eun Hyeon1, Ki-Sun Lee1, Jeong Won Kang1, Jong-Ho Cha2, and Ki-Sub Kim1
1Korea Nat’l Univ. of Transportation, Korea, 2Nat’l Energy Tech. Lab., USA

P1-80  Preparation of Aluminum Nanoparticles using Bipolar Pulsed Electrical Discharge in Water
Heon Lee1, Sun-Jae Kim2, Minchul Chung1, Ho-Geun Ahn1, Byung Hoon Kim3, and Sang-Chul Jung1
1Sunchon Nat’l Univ., Korea, 2Sejong Univ., Korea, 3Chosun Univ., Korea

P1-82  Extended Last-Passage Algorithms for the Charge Density on a Conducting Surface with a Charge
Chi-Ok Hwang, Youngwon Kim, and Sunggeun Lee
GIST, Korea

P1-83  Improvement of Pd/C Catalyst Supporting Characteristic on Carbon Black with Various Dispersion Methods
Ji Sun Kim1,2, Jae Ho Baek1, Hyun-Woo Kim1, Seong-Soo Hong2, and Man Sig Lee1
1KITECH, Korea, 2Pukyong Nat’l Univ., Korea

P1-84  Crystallographic Wet Chemical Etching of Semipolar GaN (11-22) Grown by MOCVD
Jae-Kwan Kim1, Sung-Nam Lee2, Keun-Man Song2, Jae-Sik Yoon3, and Ji-Myon Lee4
1Sunchon Nat’l Univ., Korea, 2Korea Polytechnic Univ., Korea, 3KANC, Korea, 4KBSI, Korea
P1-85 Characteristics of the Mg-Doped Cr-Deficient CuCr0.97O2 Delafossite Thin Films Prepared by using Pulsed Laser Deposition

Umar Sidik, Hee-Young Lee, and Jai-Yeoul Lee
Yeungnam Univ., Korea

P1-86 Carbon Coated Cu Nanopowders by Plasma Arc Discharge Technique

KIMS, Korea

P1-87 Glycerol Steam Reforming over Ni Based Catalyst : Influence of Promotor

Yoo-jin Go, Kyu-am Lee, Nam-cook Park, and Young-chul Kim
Chonnam Nat’l Univ., Korea

P1-88 Kinetic Study of the Catalytic Reforming of Methane with CO2-Steam Reforming over Ni/La/Al2O3 Catalyst

Myung-Hee Park, Yoon-Hwa Park, and Young-Chul Kim
Chonnam Nat’l Univ., Korea

P1-89 Effect of Modified Ni-Cr Catalysts for Steam-CO2 Reforming of Methane under High Pressure

Bong-Kwan Choi, Nam-Cook Park, and Young-Chul Kim
Chonnam Nat’l Univ., Korea

P1-90 Electrical and Photocatalytic Property Change of Solution-Combusted ZnO Nanopowder by Heat-Treatment

Sung Park¹, Byoung-Ho Yoo², Youn Cheol Kim³, Ju-Hyeon Lee⁴, and Jae Chun Lee⁵
¹Myongji Univ., Korea, ²Kongju Nat’l Univ., Korea, ³Sunmoon Univ., Korea
P1-91 Evaluation of Catalytic Performance of Nanoporous Catalysts for the Pyrolysis of Wild Reed

Myung Lang Yoo¹, Young-Kwon Park², and Sung Hoon Park³
¹Sunchon Nat’l Univ., Korea, ²Univ. of Seoul, Korea

P1-92 Effects of Acid Characteristics of Nanoporous SBA-15 on the Pyrolysis Product Distribution of Waste Pepper Stem

Young-Kwon Park³, Myung Lang Yoo², and Sung Hoon Park²
³Univ. of Seoul, Korea, ²Sunchon Nat’l Univ., Korea

P1-93 Fabrication of Nano-Sized Powders using Thermal Plasma Method

KIMS, Korea

P1-94 A Comparative Study on Structural, Morphological and Luminescence Characteristics of Gd2MoO6:Sm3+ Phosphor Prepared via Molten-Salt and Solid-State Reaction

Ruijin Yu¹,²,³ Kiwan Jang², Hyeon Mi Noh³, Byung Kee Moon³, Byung Chun Choi³, and Jung Hyun Jeong³
¹Northwest A&F Univ., Korea, ²Changwon Nat’l Univ., Korea, ³Pukyong Nat’l Univ., Korea

P1-95 Carrier Transport Mechanisms of Nonvolatile Memory Devices Based on Nanocomposites Consisting of Self-Assembled Au Nanoparticles Embedded in a Polystyrene Layer

Dong Yeol Yun¹, Yang Zhou¹, Hak Seong Kim², Sang Wook Lee², and Tae Whan Kim¹
¹Hanyang Univ., Korea, ²Konkuk Univ., Korea

P1-96 The Structure and Properties of ICP Assisted Magnetron Sputtered Nanocrystalline CrN Coatings in Corrosion Protective Die Casting Molds

Sang-Won Park and Sung-Yong Chun
Mokpo Nat’l Univ., Korea
P1-97 Synthesis of Co-Based Catalyst Supported on Nanoporous SiC-Al2O3 Supports Including Nanowire Architectures

Chang Min Lee\textsuperscript{1}, Byung-hyuk Kim\textsuperscript{1}, Inho Kim\textsuperscript{1,2}, Dong Ju Moon\textsuperscript{1}, Kyung Won Seo\textsuperscript{2}, and Sang Woo Kim\textsuperscript{1}

\textsuperscript{1}KIST, Korea, \textsuperscript{2}Ajou Univ., Korea

P1-98 Electro-Enhanced Remediation of Cr(VI)-Contaminated Wastewater using Nano-Mineral Doped Carbon Cloth Electrodes

Hyunhee Seo and Yul Roh
Chonnam Nat’l Univ., Korea

P1-99 Electrical and Optical Properties of Tandem Green Phosphorescent Organic Light-Emitting Devices with a 1,4,5,8,9,11-Hexaazatriphenylene-Hexacarbonitrile and Leucocystal Violet (4,4’,4”-Methylidyne-tris(N,N-Dimethylaniline)) Charge Generation Layer

Byung Soo You, Young Pyo Jeon, Jun Gyu Lee, and Tae Whan Kim
Hanyang Univ., Korea
[NM1] Nano Processing I

Date & Time: November 7, 2013 (Thursday) 11:40-12:40
Room: Room A / # 1104 Seminar
Session Chair: Prof. Yeoung-Sang Yun (Chonbuk Nat`l Univ., Korea)

NM1-1 11:40-11:55 Transport Properties of Sub-10 nm Graphene Nanoribbon Array
Field Effect Transistors Prepared by Block Copolymer Nanolithography
Myungwoo Son1, Jeong Gon Son2, and Moon-Ho Ham1
1GIST, Korea, 2KIST, Korea

NM1-2 11:55-12:10 Strain Evolution in Poly(3-Hexylthiophene) Crystals in an Organic Photovoltaic Thin Films
Hyo Jung Kim1 and Hyun Hwi Lee2
1Pusan Nat`l Univ., Korea, 2Pohang Accelerator Lab., Korea

NM1-3 12:10-12:25 Directional Terahertz Radiation from GaInP Lateral Superlattice
Kyoung-Jin Song, Jong-Hyuk Yim, Kwang Wook Park, Seokjin Kang, Yong-Tak Lee, and Young-Dahl Jho
GIST, Korea
### [NM2] Nano LED

<table>
<thead>
<tr>
<th>Date &amp; Time</th>
<th>November 7, 2013 (Thursday) 11:40-12:40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room</td>
<td>Room B / # 2205</td>
</tr>
<tr>
<td>Session Chair</td>
<td>Dr. Jae Chul Shin (KOPTI, Korea)</td>
</tr>
</tbody>
</table>

**NM2-1 11:40-11:55**

Polarized Terahertz Waves Emitted from In0.2Ga0.8As Nanowires

Jong-Hyuk Yim\(^1\), Kyoung-Jin Song\(^1\), Jin-Dong Song\(^2\), and Young-Dahl Jho\(^1\)

\(^1\)GIST, Korea, \(^2\)KIST, Korea

**NM2-2 11:55-12:10**

Gate Bias Stress-Induced Threshold Voltage Instability of MoS2 Field Effect Transistors

Kyungjune Cho, Woanseo Park, Tae-Young Kim, and Takhee Lee

Seoul Nat’l Univ., Korea

**NM2-3 12:10-12:25**

A Study on Adhesive for High Efficiency LED Light using Nano Silver

Hyunbum Park\(^1\) and Sungsu Kim\(^2\)

\(^1\)Howon Univ., Korea, \(^2\)ADCOM, LTD, Korea

**NM2-4 12:25-12:40**

The Comparison of Characteristics in GaN-Based Blue LEDs Grown on Si(111) and Sapphire Substrates

K.S. Jeon\(^1\), J.H. Sung\(^1\), M.W. Lee\(^1\), Y.H. Shin\(^1\), W.H. Park\(^1\), J.T. Oh\(^2\), J.H. Song\(^1\), H.Y. Ryu\(^3\), M.G. Kang\(^4\), Y.H. Choi\(^5\), and J.S. Lee\(^6\)

\(^1\)LG Electronics, Korea, \(^2\)LG Innotek, Korea, \(^3\)Inha Univ., Korea, \(^4\)Inha Univ., Korea
<table>
<thead>
<tr>
<th>Session</th>
<th>Date &amp; Time</th>
<th>Title</th>
<th>Authors</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>NP1-1</td>
<td>14:00-14:30</td>
<td>Growth of Polar, Semipolar and Nonpolar ZnO Thin Films by Atomic Layer Deposition and Study on Shape-Dependent Localized Surface Plasmon Enhanced UV-Emission</td>
<td>Ying Lin, Ti Wang, Hao Wu, and Chang Liu</td>
<td>Wuhan Univ., China</td>
</tr>
<tr>
<td>NP1-2</td>
<td>14:30-14:45</td>
<td>Effect of Light Absorption in InGaN/GaN Vertical Light-Emitting Diodes</td>
<td>Junho Sung, Ki-Seong Jeon, Min Woo Lee, Eun Ah Lee, Seon Ock Kim, Hooyoung Song, Hwanjoon Choi, Mingu Kaing, Yoon-Ho Choi, and Jeong Soo Lee</td>
<td>LG Electronics, Korea</td>
</tr>
<tr>
<td>NP1-3</td>
<td>14:45-15:00</td>
<td>Enhanced Optical Output Power of InGaN/GaN Vertical Light-Emitting Diodes by ZnO Nanorods on N-face n-GaN</td>
<td>Young-Chul Leem¹, Na-Yeong Kim¹, Chan M. Lim², Sung-Tae Kim², and Seong-Ju Park¹</td>
<td>¹GIST, Korea, ²Samsung Electronics Co. Ltd., Korea</td>
</tr>
</tbody>
</table>
[NM3] Nano Processing II

Date & Time           November 7, 2013 (Thursday) 14:00-15:15  
Room                    Room B / # 2205  
Session Chair           Prof. Joon-Seop Kim (Chosun Univ., Korea)

<table>
<thead>
<tr>
<th>Session</th>
<th>Time</th>
<th>Title</th>
<th>Speaker</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>NM3-1</td>
<td>14:00-14:30</td>
<td>Fabrication, Characterization, and Application of All-Graphene p-n Vertical Tunneling Diodes</td>
<td>Suk-Ho Choi</td>
<td>Kyung Hee Univ., Korea</td>
</tr>
<tr>
<td>NM3-2</td>
<td>14:30-15:00</td>
<td>Synthesis of Spherical and Non-Spherical Gold Nanoparticles with Biochemicals from Plants</td>
<td>Yeoung-Sang Yun</td>
<td>Chonbuk Nat'l Univ., Korea</td>
</tr>
</tbody>
</table>
NP2-1 15:25-15:55 Localized Surface Plasmon Enhanced Quantum Efficiency of InGaN/GaN Quantum Wells by Ag/SiO2 Nanoparticles
In-Hwan Lee
Chonbuk Nat'l Univ., Korea

NP2-2 15:55-16:10 Performance of Inverted Hybrid Light-Emitting Diodes Depending on the Condition of ZnO Electron Transporting Layer Deposited by RF Sputtering
Na-Yeong Kim, Pham Thi Thu Phuong, Su-Hyun Jung, Jang-Won Kang, Hyo-Wook Kim, Kwang-Hee Lee, and Seong-Ju Park
GIST, Korea

NP2-3 16:10-16:25 Enhancement of Surface Plasmon Resonance of Specialty Optical Fiber Incorporated with Au Nano-Particles in Cladding Region
Seongmin Ju, Onyu Kim, Seongmook Jeong, Youngwoong Kim, and Won-Taek Han
GIST, Korea
<table>
<thead>
<tr>
<th>Session</th>
<th>Date &amp; Time</th>
<th>Talk Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>NM4-1</td>
<td>15:25-15:40</td>
<td>Studies on the Production of Higher Alcohols over Nanoparticles Supported Catalysts</td>
<td>Mikyung Park¹, Jin Hee Lee¹, Ramesh S¹, Sang Woo Kim¹, Byoung Sung Ahn², and Dong Ju Moon¹,²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>¹KIST, Korea, ²UST, Korea</td>
</tr>
<tr>
<td>NM4-2</td>
<td>15:40-15:55</td>
<td>Modified Nano-Particulate Perovskite Catalyst for Steam and CO2 Reforming of Methane</td>
<td>Daeil Park¹, Dongju Moon², and Taegyu Kim¹</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>¹Chosun Univ., Korea, ²KIST, Korea</td>
</tr>
<tr>
<td>NM4-3</td>
<td>15:55-16:10</td>
<td>Syngas Production by Steam CO2 Reforming of Methane over Hydrotalcite Catalysts</td>
<td>Na-young Kim¹, Eun hyeok Yang¹, Mi kyung Park¹, Yoon ju Lee³, Hyun Jin Kim¹, and Dong Ju Moon¹,²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>¹KIST, Korea, ²UST, Korea, ³DSME, Korea</td>
</tr>
<tr>
<td>NM4-4</td>
<td>16:10-16:25</td>
<td>Selective Hydrogenolysis of Glycerol to 1,2-Propanediol over Hydrotalcite Catalysts</td>
<td>Sang-yong Lee¹, Jae-Son Jung¹, Eun hyeok Yang¹, Seung-hoon Kim¹, Seung-hwan Lee³, and Dong-Ju Moon¹,²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>¹KIST, Korea, ²UST, Korea, ³JNK Hearters Co., Ltd., Korea, ⁴Korea Univ., Korea</td>
</tr>
<tr>
<td>NM4-5</td>
<td>16:25-16:40</td>
<td>Studies on the Fischer-Tropsch Synthesis over Co-Based Catalysts Supported on Modified SBA-15</td>
<td>Jae Suk Lee¹, Jae Sun Jung¹, Ga-ram Choi¹, Kwan-young Lee⁴, and Dong Ju Moon¹,²,³,⁴</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>¹KIST, Korea, ²UST, Korea, ³Yonsei Univ., Korea, ⁴Korea Univ., Korea</td>
</tr>
</tbody>
</table>

Date & Time       November 7, 2013 (Thursday) 16:40-18:10
Room             Room D / Lobby 1F

P2-1 Synthesis of a Novel Tricalcium Phosphate/Hydroxyapatite
Seung-Chan Jin, Jun-Sik Son, Zhenggang Piao, Jae-Sung Kim, Jisu Oh, Jae-Seek You, and Su-Gwan Kim
Chosun Univ., Korea

P2-2 Evaluation of Bone Regeneration of Hydroxyapatite/Alumina Bilayered Scaffold in a Canine Tibia Model
Jong Min Kim¹, Jun Sik Son², Seong Soo Kang³, Gonhyung Kim⁴, and Seok Hwa Choi³
¹Chungbuk Nat’l Univ., Korea, ²Korea Textile Development Inst., Korea, ³Chonnam Nat’l Univ., Korea

P2-3 Development of Collagen Grafted Bone Particle as a Novel Bone Graft Substitutes
Youn-Mook Lim³, Se Eun Kim¹, Kwang Sik Jang², Kyung Mi Shim², Seok Hwa Choi², Sung In Jeong¹, Jin-oh Jeong¹, and Seong Soo Kang¹
¹Chonnam Nat’l Univ., Korea, ²Chungbuk Nat’l Univ., Korea, ³KAERI, Korea

P2-4 Manufacture of Duck-Beak Bone Particles with Gamma-Ray Irradiation for Bone Graft
Se Eun Kim¹, Ga Hoi Choi², Kyung Mi Shim³, Seok Hwa Choi², Youn-Mook Lim³, Sung In Jeong³, Jong-Young Lim¹, Jun Sik Son⁴, and Seong Soo Kang¹
¹Chonnam Nat’l Univ., Korea, ²Chungbuk Nat’l Univ., Korea, ³KAERI, Korea, ⁴Korea Textile Development Inst., Korea

P2-5 The Effect of Novel Sulfur Silane Systems on Resin Bond Strength to Dental Noble Metal Alloys
Yangho Lee³, Jun Sik Son², Eunkyung Lee¹, Kyo-Han Kim³, and Tae-Yub Kwon¹
¹Kyungpook Nat’l Univ., Korea, ²Korea Textile Development Inst., Korea
P2-6 The Variations of Thermal Expansion Coefficient of Bioactive Glass on the Weight of Na2O

Gyejeong Oh, Kyungjun Jang, Minkyung Ji, Jihyun Kim, Hyunpil Lim, Kwidug Yun, and Sangwon Park
Chonnam Nat’l Univ., Korea

P2-7 The Infiltration Effect of Different Particle Size of Bioactive Glass into Zirconia

Kyungjun Jang, Gyejeong Oh, Minkyung Ji, Jihyun Kim, Hyunpil Lim, Kwidug Yun, and Sangwon Park
Chonnam Nat’l Univ., Korea

P2-8 Nano-Structured Bio-Ceramic Hydroxyapatite Coating using Aerosol Deposition Process for Medical Applications

Dae-Geun Kim1,2, Myeong-No Lee3, Hyeonu Hong1, Ju-hui Jung1, Hyung-Bock Lee2, and J. H. Park1
1lONES Co., Ltd, Korea, 2Myongji Univ., Korea

P2-9 Evaluation of Bone Defect Healing in the Area around Implants after Transplanting Autogenous Tooth Powder Treated with Various Acid Etching Processes

Byung-Won Kang, Han-Seung Jang, Su-Gwan Kim, Ji-Su Oh, Jae-Seek You, Seung-Chan Jin, and Sung-Chul Lim
Chosun Univ., Korea

P2-10 A Comparative Study on the Bone Formation Capacity of Autogenous Tooth Graft Materials with Toothash Powder Grafted to the Tooth Extraction Socket of Adult Dogs

Seong-Soo Yang, Su-Gwan Kim, Ji-Su Oh, Jae-Seek You, and Sung-Chul Lim
Chosun Univ., Korea

P2-11 Comparative Evaluation of Implant Stability According to the Surfaces of Implants in the Mandibles of Adult Dogs

Yu-ri Choi and Su-Gwan Kim
Chosun Univ., Korea
P2-12  Comparison of Bone Healing Ability on CMC- and HA-Based Bone Grafts in a Rabbit Segmental Defect Model
Jong Min Kim1, Seong Soo Kang2, Jun Sik Son3, and Seok-hwa Choi3
1Chungbuk Nat’l Univ., Korea, 2Chonnam Nat’l Univ., Korea, 3Korea Textile Development Inst., Korea

P2-13  Fluorescent Nano Particle Assembly of Quinoline for Biosensor Application
Sangjun Jin and Hyong-Jun Kim
Kongju Nat’l Univ., Korea

P2-14  Fatigue Test of Cytochrome c Self-Assembled on a 11-MUA Layer Based on Electrochemical Analysis for Bioelectronic Device
Taek Lee1, Jinho Yoon1, Yong-Ho Chung1, Junhong Min2, and Jeong-Woo Choi1
1Sogang Univ., Korea, 2Chung-Ang Univ., Korea

P2-15  Biotransformation and Its Application: Biogenic Nano-Catalyst and Metal-Reducing Bacteria to Remediate Cr(VI)-Contaminated Water
Hyunhee Seo, Hae-min Jung, and Yul Roh
Chonnam Nat’l Univ., Korea

P2-16  Bioavailability of the Nano-unit 14C-Chemical on Various Water Potential Conditions
Sang-Chul Jung, Hangun Kim, Ho-Geun Ahn, and Do-Jin Lee
Sunchon Nat’l Univ., Korea

P2-17  Preosteoblast Cell Response on Polycaprolactone (PCL) 3D Scaffolds Formed Hyaluronic Acid Nano Layer
Byung Hoon Kim1, Seong Won Yang2, and Yeong Mu Ko1
1Chosun Univ., Korea, 2Chosun Univ. College of Medicine, Korea
P2-18 O2/Ar Plasma Treatment for Enhancing the Biocompatibility of Hydroxyapatite Nanopowder and Polycaprolactone Composite Film
Sung-Woon Myung, Yeong-Mu Ko, and Byung-Hoon Kim
Chosun Univ., Korea

P2-19 In Vitro Bioactivity of Chitosan-Gelatin-Hyaluronan/Nano-hydroxyapatite Composite Scaffolds for Bone Tissue Engineering
Young Sun Hwang, Yeong Mu Ko, Seong-Won Yang, and Byung Hoon Kim
Chosun Univ., Korea

P2-20 Plasma Polymerization of 1, 2-Diaminocyclohexane for Covalent Bonding of Bone Morphogenic Protein-2 on Titanium Surface
Geon Soo Shin, Sung Woon Myung, Young Hyoun Hwang, Yeong Mu Ko, and Byung Hoon Kim
Chosun Univ., Korea

P2-21 Preparation of O2 Plasma Treated Polycaprolactone/Nano TiO2 Composites and in Vitro Bioactivity
Young-Hyoun Hwang, Do-Young Choi, Yeong-Mu Ko, Seong-Won Yang, and Byung-Hoon Kim
Chosun Univ., Korea

P2-22 Fabrication of 3D Scaffolds with Nano-Hydroxyapatite for Improving the Preosteoblast Cell-Biological Performance
Hee-Sang Roh, Young-Hyoun Hwang, Yeong-Mu Ko, and Byoung-Hoon Kim
Chosun Univ., Korea

P2-23 Roles of Different Polymeric Nano Layers for Improving the Biocompatibility of CO2 Gas Foaming/Salt Leaching Porous Scaffolds
Tae-Yeong Bak, Sung Woon Myung, Young Hyoun Hwang, Yeong Mu Ko, and Byung Hoon Kim
Chosun Univ., Korea
P2-24  The Effect on Antibacterial Activity and Cell Compatibility of Titanium/Zirconium Nitride Coating on Titanium

Min-kyung Ji¹, Mong-sook Vang¹, Hong-so Yang¹, Sang-won Park¹, Kwi-dug Yun¹, Kyung-ku Lee², Gye-jeong Oh⁲, Ga-hyun Kim⁴, and Hyun-pil Lim⁴
¹Chonnam Nat’l Univ., Korea, ²Gwangju Technopark, Korea

P2-25  The Effect of GRGDS Peptide Coating on TiO2 Nanotube by Chemical Immobilized Method

Ga-Hyun Kim, Il-Shin Kim, Sang-Won Park, Kwang-Min Lee, Kwi-Dug Yun, Mong-Sook Vang, Hong-So Yang, Jeong-Tae Koh, Gye-Jeong Oh, Min-Kyung Ji, and Hyun-Pil Lim
Chonnam Nat’l Univ., Korea

P2-26  Preparation and Characterization of Low Molecular Weight Heparin by Liquid Phase Plasma Method

Do-Jin Lee¹, Hangun Kim¹, Byung Hoon Kim¹, Heon Lee¹, and Sang-Chul Jung¹
¹Sunchon Nat’l Univ., Korea, ²Chosun Univ., Korea

P2-27  Hydroxyapatite Coating on Nanotubular Ti-25Ta-xZr Alloys by Electrochemical and Physical Deposition Methods

Hyun-Ju Kim, Yeong-Mu Ko, and Han-Cheol Choe
Chosun Univ., Korea

P2-28  Morphology Changes of Mn/HA Coated Films on Nanotube-formed Ti-35Ta-xNb Alloys

Chae-Ik Jo, Yeong-Mu Ko, and Han-Cheol Choe
Chosun Univ., Korea

P2-29  Surface Morphology of Zn-HA Coated Nanotubular Ti-Nb-Hf Alloy

Sung-Hwan Kim, Yeong-Mu Ko, and Han-Cheol Choe
Chosun Univ., Korea

P2-30  Electrochemical Deposition of Nano-Sized Si-Ca/P on Beta Ti Alloy by Cyclic Voltammetry Method

Yong-Hon Jeong¹ and Han-Cheol Choe²
¹The Ohio state Univ., USA, ²Chosun Univ., Korea
P2-31 Silicon-Hydroxyapatite Coating on Nanotube Formed Ti-30Nb-xTa Alloys for Biocompatibility
Eun-Sil Kim, Yeong-Mu Ko, and Han-Cheol Choe
Chosun Univ., Korea

P2-32 In Vitro Evaluation of Hydroxyapatite-Coated Titanium Implant with Atmospheric Plasma Treatment
Hyo-Jin Lee¹, Tae-Yub Kwon¹, Kyo-Han Kim¹, Seong Soo Kang², Seok Hwa Cho³, Soon-Taek Kwon⁴, Dae-Hyun Cho⁴, and Jun Sik Son⁴
¹Kyungpook Nat’l Univ., Korea, ²Chonnam Nat’l Univ., Korea, ³Chungbuk Nat’l Univ., Korea, ⁴Korea Textile Development Inst., Korea

P2-33 Preparation and Characterisation of Hydroxyapatite Coatings on Nanotubular TiO2 Surface Obtained by Sol–Gel Process
Jin-ho Shin¹, Jeong-Tae Koh¹, Hyun-Pil Lim¹, Gye-Jeong Oh¹, Seok-Woo Lee¹, Kwang-min Lee¹, Kyung-Ku Lee², and Sang-Won Park¹
¹Chonnam Nat’l Univ., Korea, ²Gwangju Technopark, Korea

P2-34 Characterization of Shewanella Oneidensis MR-1 Mutant for the Understanding of the Growth Mechanisms of Tellurium Nanorods
Gukyoung Kwon, Dong-Hun Kim, Taeyang Kim, and Hor-Gil Hur
GIST, Korea

P2-35 Microbial Synthesis of Iron Sulfide (FeS) and Siderite (FeCO3) Nanoparticles during Anoxic Bioreduction of Acid Mine Drainage (AMD)
Yumi Kim, Yuri Lee, and Yul Roh
Chonnam Nat’l Univ., Korea

P2-36 Microbial Synthesis and Characterization of Superparamagnetic Zn-Substituted Magnetite Nanoparticles
Yumi Kim and Yul Roh
Chonnam Nat’l Univ., Korea
P2-37 **Effects of Oxide Layer on the Bonding Strength of Ni-Cr Alloys with Porcelain Ceramics**

Won Uk Park, Sung Heon Jung, Jingming Zhao, Kyu Hong Hwang, and Jong kook Lee

1Gyeongsang Nat’l Univ., Korea, 2Chosun Univ., Korea

---

P2-38 **Determination of C-Terminal δ-Catenin Responsible for Inducing Dendritic Morphogenesis**

Ho-Bin Lee, Yongfeng He, Gyeong-Su Yang, Jin-A Oh, Ji-Seon Ha, Oh-Hyuen Song, Do-Jin Lee, Sang-Chul Jung, Kyung Keun Kim, Kwonseop Kim, and Hangun Kim

1Sunchon Nat’l Univ., Korea, 2Chonnam Nat’l Univ., Korea

---

P2-39 **Liquid Crystal Formulation and Optimization of Anti-Microbial Polyherbal Ointment**

Jae-Hwan Choi, Cheong-Weon Cho, Jae-Hun Kim, Soo Hyun Park, Suwan Chang, and Young-Beob Yu

1Chungnam Nat’l Univ., Korea, 2KAERI, Korea, 3Chonnam Nat’l Univ., Korea, 4Univ. of Ulsan college of Medicine, Korea, 5Nambu Univ., Korea

---

P2-40 **Ethosomes and Transfersomes for Topical Delivery of Ginsenoside Rb1 from Red Ginseng: Characterization and in Vitro Evaluation**

Jae-Hwan Choi, Young-Beob Yu, Sun-Hang Cho, Mi-Ja Chung, Je-jung Yun, and Cheong-Weon Cho

1Chungnam Nat’l Univ., Korea, 2Nambu Univ., 3KRICT, Korea, 4Gwangju Univ., Korea, 5Nano Bio Research Inst.

---

P2-41 **Preparation and Decoration of Gold and Silver Nanoparticles on L-Phosphatidylcholine Functionalized Carbon Nanotubes**

Pratap Kotte, Yu-lim Ko, and Yeoung Sang Yun

Chonbuk Nat’l Univ., Korea

---

P2-42 **The Role of Magnesium Ion Substituted Biphasic Calcium Phosphate Spherical Microscaffolds in Osteogenic Differentiation of Human Adipose Tissue-Derived Mesenchymal Stem Cells**

Dong-Hyun Kim, Keun-Koo Shin, Jin Sup Jung, Ho Hwan Chun, Jong Kook Lee, and Seog-Young Yoon

1Pusan Nat’l Univ., Korea, 2Chosun Univ., Korea
<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>P2-43</td>
<td>The Effect of Thymosin β4 for Osteoblast Adhesion on Titanium Surface</td>
<td>Baik-Dong Choi, Soon-Jeong Jeong, Hye-Yon Lee, Do-Seon Lim, and Moon-Jin Jeong</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1Chosun Univ., Korea, 2Eulji Univ., Korea</td>
</tr>
<tr>
<td>P2-44</td>
<td>660 nm Red LED Induces Secretory Leukocyte Protease Inhibitor (SLPI) in LPS-Stimulated RAW264.7 Cell</td>
<td>Soon-Jeong Jeong, Baik-Dong Choi, Hye-Yon Lee, Young-Hyun Hwang, Byung-Hoon Kim, Yong-Ick Cho, and Moon-Jin Jeong</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1Chosun Univ., Korea, 2KOPTI, Korea</td>
</tr>
<tr>
<td>P2-45</td>
<td>RhBMP-2 Effect of the Functionally Graded Nano-Micro Titanium Implants on Vertical Bone Defect Model</td>
<td>Kwidug Yun, Seongsoo Kang, Hyunpil Lim, Mongsook Vang, Hongso Yang, Gyejeong Oh, Hyunseung Kim, Gabwoon Hwang, Jeongtae Koh, Kyungku Lee, Kwangmin Lee, Jaesam Ban, and Sangwon Park</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1Chonnam Nat’l Univ., Korea, 2Megagem Implant R&amp;D Center, Korea, 3Songwon Univ, Korea, 4Gwangju Technopark, Korea</td>
</tr>
<tr>
<td>P2-46</td>
<td>Self-Assembled Nanoparticles for Targeting of CD44 Receptor</td>
<td>Young-Il Jeong, Jong-Ho Hwang, Chung Wook Chung, and Dae Hwan Kang</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pusan Nat’l Univ., Korea</td>
</tr>
<tr>
<td>P2-47</td>
<td>Evaluation of Electrospun PU/propolis Nanofibrous Polymer Patch for Antiinflammation and Wound Healing</td>
<td>Jeongin Kim, Afeesh Rajan Unnithan, and Cheolsang Kim</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chonbuk Univ, Afeere</td>
</tr>
<tr>
<td>P2-48</td>
<td>Nanoaggregates of Polysaccharides and Its Biological Activity</td>
<td>Ki-Choon Choi, Kyung Dong Lee, Da Hye Kim, and Young-Il Jeong</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1Rural Development Administration, Korea, 2Dongsin Univ, Korea, 3Pusan Nat’l Univ, Korea</td>
</tr>
</tbody>
</table>
International Conference on Nano Science and Nano Technology
ICNST 2013
November 7-8, 2013 / Chosun University, Gwangju, Korea

P2-49 Biological Synthesis of Tellurium Nanostructures by Shewanella Oneidensis MR-1
Dong-Hun Kim, Sunhwa Park, Younggun Yoon, and Hor-Gil Hur
GIST, Korea

P2-50 Fabrication of Optical Fiber pH Sensor Based on NIR Quantum Dots
Seshadri Reddy Ankireddy and Jongsung Kim
Gachon Univ., Korea

P2-51 Characterizations of Bone-like Apatite Powder Fabricated using Modified Simulated Body Fluid
Ji-Hae Ahn, Ok-Sung Han, Hyun-Joo Moon, Yeong-Joon Park, and Ho-Jun Song
Chonnam Nat’l Univ., Korea

P2-52 Antioxidative Activity of Platinum Nanocolloid and Its Protective Effect against Hepatic Cellular Damage
Mi-Ran Choi1, Le Thanh Do2, Yong-Hoon Chung2, Teruo Kawada3, Hoon Yoo4, and Rina Yu5
1Ulsan Univ., Korea, 2SOLCO NANOADVANCE Co., Korea, 3Chosun Univ., Korea, 4Kyoto Univ., Japan

P2-53 Surface Characterization and Osteoconductivity Evaluation of Micro/Nano Surface Formed on Titanium using Anodic Oxidation Combined with H2O2 Etching and Hydrothermal Treatment
Eun-Jin Park, Yo-Han Song, Moon-Jin Hwang, Ho-Jun Song, and Yeong-Joon Park
Chonnam Nat’l Univ., Korea

P2-54 Regenerable, Label-free Localized Surface Plasmon Resonance (LSPR) Aptsensor for Ochratoxin A Detection
Jin-Ho Park1, Ju-Young Byun1, Hyoyoung Mun1, Won-Bo Shim1, Yong-Beom Shin2, Taihua Li3 and Min-Gon Kim4
1GIST, Korea, 2KRICT, Korea

Young Jin Do and Jong Sung Kim
Gachon Univ., Korea
P2-56  Enhancement of Pyrrhotite Bioleaching through Bacterial Adaptation and Direct Biological Oxidation  
Nag-Choul Choi1, Song-Bae Kim1, Bong-Ju Kim2, Kang-Hee Cho2, Su-Ji Oh2, and Cheon-Young Park2  
1Seoul Nat’l Univ., Korea, 2Chosun Univ., Korea

P2-57  Influence of Glyoxal on Preparation of Poly(Vinyl Alcohol)(PVA)/Poly(Acrylic Acid)(PAA) Blend Film  
Ju-Heon Lee1, Ju-Il Kim1, Ju-Young Park1,2, and In-Hwa Lee1  
1Chosun Univ., Korea, 2Seoul Nat’l Univ., Korea

P2-58  Fabrication and Characterization of Antimicrobial Ethyl Cellulose Nanofibers using Electrospinning Techniques  
Dae-Geun Kim1, Ju-Young Park1,2, In-Hwa Lee3  
1Chosun Univ., Korea, 2Seoul Nat’l Univ., Korea

P2-60  Effect of Nanofillers on Properties of Glass Composite Sealants  
Dong-Hoon Jang1, Bong-Soo Kim1, Sung Park1, Dong Bok Lee2, Jong-Ho Lee3, Hae-Weon Lee3, and Jae Chun Lee4  
1Myongji Univ., Korea, 2Sungkyunkwan Univ., Korea, 3KIST, Korea

P2-61  Effects of Water Purge Time on the Formation of Zinc Oxide Thin Films Grown by Atomic Layer Deposition  
Hui Kyung Park and Jaeyeong Heo  
Chonnam Nat’l Univ., Korea

P2-62  Synthesis of Tricyclopentadiene over Nanoporous MCM-41 Catalysts  
Eunseo Park1, Jinhan Kim1, Jin-Heong Yim1, Jeongsik Han2, Young-Kwon Park3, and Jong-Ki Jeon1  
1Kongju Nat’l Univ., Korea, 2Agency for Defense Development, Korea, 3Univ. of Seoul, Korea
P2-63 Synthesis of Nanoporous Adsorbents using Alum Sludge  
Nayoung Park¹, Junghyun Bae², Goun Kim³, Jong-Ki Jeon³, Young-Kwon Park³, and Choul-Ho Lee³  
¹Kongju Nat’l Univ., Korea, ²Univ. of Seoul, Korea

P2-64 Nano-Structures Constructed by Self Assembly of Amphiphilic Rod-Coil Block Copolymer  
Chang-Geun Chae, Ho-Bin Seo, In-Kyu Park, Mohammad Changez, Haeng-Deog Koh, and Jae-Suk Lee  
GIST, Korea

P2-65 Synthesis of Magnetite Nanoparticles and Their Surface Modification for Hyperthermia Application  
Eun-Hee Lee and Chang-Yeoul Kim  
KICET, Korea

P2-66 Fast Responsive Gas Sensor of Vertically Aligned Fluorine-Doped Tin Oxide Nanorod Thin Film  
Chang-Yeoul Kim  
KICET, Korea

P2-67 Microbially Mediated-Precipitation of Strontium Carbonate Nanoparticles  
Serku Kang and Yul Roh  
Chonnam Nat’l Univ., Korea

P2-68 Formation and Characterization of Ni Nanofiber Catalysts on a Nickel Metal Foam by Electrospinning Process  
Hee Chul Yeom¹,², Dong Ju Moon³, Kwan Young Lee³, and Sang Woo Kim³  
¹KIST, Korea, ²Korea Univ., Korea
<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>P2-69</td>
<td>Exploration of the Mechanism for Self-Emulsion Polymerization and Synthesis of Polymeric Nanoparticles from Amphiphilic Homopolymer&lt;br&gt;Santosh Kumar, Dong-Woo Kim, Hong-Joon Lee, Mohammad Changez, Tae-Ho Yoon, and Jae-Suk Lee&lt;br&gt;GIST, Korea</td>
</tr>
<tr>
<td>P2-70</td>
<td>Effect of Gold Nanoparticles Addition to CuO-ZnO/Al2O3 Catalyst in Conversion of CO2 to CH3OH&lt;br&gt;Won-Ju Ahn¹, Hwan-Gyu Lee¹, Myeong-Won Ahn³, Seok-Hwan Son¹, Hong-Hee Kim³, Hyeong-Hyeon Kim³, Min-Chul Chung¹, Kwon-Pil Park¹, Byeong-Mo Kang², Woon-Jo Jeong¹, Do-Jin Lee¹, Bo-Kyun Sohn¹, and Ho-Geun Ahn¹&lt;br&gt;¹Sunchon Nat’l Univ., Korea, ²OT&amp;T, INC., Korea</td>
</tr>
<tr>
<td>P2-71</td>
<td>Preparation of Nanosized TiO2 Powder from Spent Titanium Chip by Sol-Gel Method&lt;br&gt;Hwan-Gyu Lee¹, Won-Ju Ahn¹, Seong-Kyung Kim³, Byeong-Mo Kang², Woon-Jo Jeong¹, Min-Chul Chung¹, and Ho-Geun Ahn¹&lt;br&gt;¹Sunchon Nat’l Univ., Korea, ²OT&amp;T, INC., Korea</td>
</tr>
<tr>
<td>P2-72</td>
<td>Bimetallic Pt-Au Nanocatalysts on ZnO/Al2O3/Monolith for Air Pollution Control&lt;br&gt;Ho-Guen Ahn¹ and Ki-Joong Kim²&lt;br&gt;¹Sunchon Nat’l Univ., Korea, ²Oregon State Univ., USA</td>
</tr>
<tr>
<td>P2-73</td>
<td>Nanosized CuO-ZnO/TC Catalyst for Conversion of Carbon Dioxide to Methyl Alcohol&lt;br&gt;Won-Ju Ahn¹, Min-Chul Chung¹, Kwon-Pil Park¹, Bo-Kyun Sohn³, Ki-Joong Kim², Woon-Jo Jeong³, Sang-Chul Jung¹, Do-Jin Lee¹, Byeong-Kwon Ahn², and Ho-Geun Ahn¹&lt;br&gt;¹Sunchon Nat’l Univ., Korea, ²Oregon State Univ., USA, ³OT&amp;T, INC., Korea, ⁴Chodang Univ., Korea</td>
</tr>
<tr>
<td>P2-74</td>
<td>Experimental Investigation on Graphene Modification using 3-Aminopropyltriethoxysilane&lt;br&gt;Dae-Sung Kim, Vivek Dhand, and Kyong Yop Rhee&lt;br&gt;Kyung Hee Univ., Korea</td>
</tr>
</tbody>
</table>
P2-75 MMT Addition Effect on Mechanical Behavior of Basalt/Polyester Composites
Tae-Kyung Kim and Kyong-Yop Rhee
Kyung Hee Univ., Korea

P2-76 Study on Graphene Agglomeration Reduction Due to Cryogenic Milling Process
Deok-Soo Kang and Kyong-Yop Rhee
Kyung Hee Univ., Korea

P2-77 The Characteristics of an Antibacterial TiAgN Thin Film Coated by PVD Technique
Byeong-Mo Kang1, Woon-Jo Jeong2, Ho-Geun Ahn3, and Yeong-Seog Lim1
1Chonnam Nat’l Univ., Korea, 2OT&T Inc., Korea, 3Sunchon Nat’l Univ., Korea

P2-78 Synthesis and Characterisation of Silica-Modified Titania for Photocatalytic Decolouration of Crystal Violet
Mohammad Shahid1, Ibrahim El Saliby2, Andrew McDonagh1, Se Min Park2, Ho Kyong Shon3, and Jong-Ho Kim2
1Univ. of Tech., Australia, 2Chonnam Nat’l Univ., Korea

P2-79 Enhancement of Mechanical Properties and Flame Retardancy of HDPE Composite Containing Nanoclay Prepared by Electron Beam Irradiation
Jong Seok Park, Seung Jun Lee, Phil Hyun Kang, and Young Chang Nho
KAERI, Korea

P2-80 Preparation and Characterization of Poly(Vinyl Alcohol) Hydrogel Containing Silver Nano Particle Prepared by Gamma-Ray Irradiation
Jong Seok Park, Jong Bae Choi, Young Min Shin, Sung In Jeong, Hui Jeong Gwon, Youn Mook Lim, Phil Hyun Kang, and Young Chang Nho
KAERI, Korea

P2-81 Single-Base Mismatch Detection using Fluorescence Quenching of Quantum Dots in a Microfluidic Chip
Ngoc Tam Le and Jong Sung Kim
Gachon Univ., Korea
P2-82 Long and Short Range Order Structural Analysis of In situ Formed Biphasic Calcium Phosphates

Dong-Hyun Kim1, Gi-Yeop Kim1, Ho Hwan Chun1, Si-Young Choi2, Hong-Chae Park1, and Seog-Young Yoon1

1Pusan Nat’l Univ., Korea, 2KIMS, Korea

P2-83 Ac2O/HCl Modulated Fluorescence on-off Model Based on Arylmaleimide

Xiaochuan Li1, Jae-Young Lee2, and Young-A Son2

1Henan Normal Univ., China, 2Chungnam Nat’l Univ., Korea

P2-84 Spectral Switching of Naphthalimide-Coumarin Dye

Xiaochuan Li1, Ji-Yong Hwang2, and Younga Son2

1Henan Normal Univ., China, 2Chungnam Nat’l Univ., Korea

P2-85 Mechanochemical Synthesis and Rapid Consolidation of CoTi-Al2O3 Composite by Pulsed Current Activated and Its Mechanical Properties

In-Jin Shon and Hyun-Su Kang

Chonbuk Nat’l Univ., Korea

P2-86 High Frequency Induction Heated Synthesis and Consolidation of Nanostructured TaSi2-WSi2 Composite and Its Mechanical Properties

In-Jin Shon and Hyun-Su Kang

Chonbuk Nat’l Univ., Korea

P2-87 Highly Ordered Superhydrophobic Pillars using Carbon Nanotubes Regrowth

Ung Hui Shin, Jong-Man Kim, and Hyung Woo Lee

Pusan Nat’l Univ., Korea

P2-88 Quantitative Effects of Amino Acid on the Synthesis of Perovskite using Microwave-Induced Solution Combustion Synthesis

Choong-Hwan Jung, Young-Min Han, and Yeon-Ku Kim

KAERI, Korea
P2-89 Detection of Organic Vapors Based on Photoluminescent DBR Porous Silicon Interferometer
Jihoon Ahn, Bomin Cho, and Honglae Sohn
Chosun Univ., Korea

P2-90 Seawater Absorption Effect on Tensile Properties of Vinylester/MMT/Glass Composites
Ji Il Ryu and Kyong-Yop Rhee
Kyung Hee Univ., Korea

P2-91 Ring Opening of Naphthenic Molecules over Metal Containing Mesoporous Y Zeolite Catalyst
Eun Sang Kim, You-Jin Lee, Kwang-Eun Jeong, Tae-Wan Kim, Joo-Wan Kim, Chul-Ung Kim, and Soon-Yong Jeong
KRICT, Korea

P2-92 Structural and Photoluminescence Properties of Eu2+ Doped Alkaline Earth Aluminates
Yeon Woo Seo, Byung Kee Moon, Byung Chun Choi, and Jung Hyun Jeong
Pukyong Nat’l Univ., Korea

P2-93 Preparation and Luminescence of LaF2 Based Transparent Glass-Ceramics
Hai Guo, Xiaoman Li, Hyeon Mi Noh, Byung Kee Moon, Byung Chun Choi, and Jung Hyun Jeong
1Zhejiang Normal Univ., China, 2Pukyong Nat’l Univ., Korea

P2-94 Zn Effect of the Mg-Zn Alloy for the Biomedical Implant
Jihyun Kim, Mongsook Vang, Hongso Yang, Sangwon Park, Hyunpiil Lim, Gyejung Oh, Minkyung Ji, Kyungjun Jang, and Kwidug Yun
Chonnam Nat’l Univ., Korea
P2-95  Piezoelectric Ternary Oxide Nanowire/Nano-Tube Fabricated using Solution-Based Method
Gil Woong Kim, Hyun Jun Lee, Hye Jung Lee, Sung Su Lee, Eun Youg Park, Jung Hun Kwak, and Ji Young Jo,
GIST, Korea

P2-96  Synthesis and Characteristics of NiCo-Y2O3 Nano-Composite Particles by Polyvinly Alcohol Solution Route at Low Temperature
Young-Min Han¹, Sang-Jin Lee², Yeon-Ku Kim¹, Jinsung Jang¹, and Choong-Hwan Jung¹
¹KAERI, Korea, ²Mokpo Nat’l Univ., Korea

P2-98  Synthesis and Spectral Analysis of Ag2S/ZnS Core/Shell NIR Quantum Dots
Fei Zhao and Jongsung Kim
Gachon Univ., Korea

P2-99  Facile One-Pot Synthesis of α-Fe2O3 (Hematite) Nanowires Coated with Zinc Oxide and Silver Nanoparticles for Efficient Removal of Water Pollutants.
Aguilar Ludwig Erik, Amarjargal Altangerel, Reyes Mark Kenneth, and Cheol Sang Kim
Chonbuk Nat’l Univ., Korea
[NB1] Nano Bio Interface Communications

**Date & Time**  
November 8, 2013 (Friday) 09:00-10:15

**Room**  
Room A / # 1104 Seminar

**Session Chair**  
Dr. Je-Jeong Yun (Nano Bio Research Institute, Korea)

---

**NB1-1  09:00-09:15**  
Wound-Dressing Materials with Antibacterial Activity from Electrospun Bioactive Composite Mats

Afeesh Rajan Unnithan, R. S. Arathyram, and Cheol Sang Kim  
Chonbuk Nat’l Univ., Korea

**NB1-2  09:15-09:45**  
Bioinformatic Analysis of Metabolite Profiling Data to Identify miRNA-155 Related Metabolites in NCI-60 Cancer Cells

Je-keun Rhee¹, Sinae Kim², Chanjoo Yeom³, Young-Beob Yu⁴, and Suhwan Chang²,³  
¹Seoul Nat’l Univ., Korea, ²Univ. of Ulsan College of Medicine, Korea, ³Asan Medical Center, Korea, ⁴Nambu Univ., Korea

**NB1-3  09:45-10:15**  
Water-Soluble Conjugated Polyelectrolyte-Based Chemo- and Biosensors

Han Young Woo  
Pusan Nat’l Univ., Korea
<table>
<thead>
<tr>
<th>Session</th>
<th>Time</th>
<th>Title</th>
<th>Presenters</th>
</tr>
</thead>
<tbody>
<tr>
<td>NM5-1</td>
<td>09:00-09:30</td>
<td>Free Energy Theory of Sintering for Nano Powder Technology</td>
<td>Hidehiko Tanaka, NIMS, Japan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NM5-2</td>
<td>09:30-09:45</td>
<td>P-type Transfer Electrical Characteristic of Amorphous Indium Gallium Zink Oxide</td>
<td>Teresa Oh, Cheongju Univ., Korea</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NM5-3</td>
<td>09:45-10:00</td>
<td>Realization of High Quality White Emission using Non-Toxic Carbon Dots and ZnAgInS Nanocrystals</td>
<td>Wonkeun Chung, Hyunchul Jung, and Sung Hyun Kim, Korea Univ., Korea</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NM5-4</td>
<td>10:00-10:15</td>
<td>Quantitative Analysis of Carbon Nanostructure of Soot Particles Generated from Microgravity Droplet Flames</td>
<td>Seuk-Cheun Choi^{1,2} and Seul Hyun Park^{2}</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>^{1}KITECH, Korea, ^{2}Chosun Univ, Korea</td>
</tr>
</tbody>
</table>
[NE1] Nano Energy I

**Date & Time**  November 8, 2013 (Friday) 11:15-12:30

**Room**  Room A / # 1104 Seminar

**Session Chair**  Prof. Hyun Jae Shin (Chosun Univ., Korea)

---

**NE1-1  11:15-11:45**  Facile Fabrication of Ordered TiO2 Nanotubes with Both Ends Opened via a Selective Etching Process

Taiho Park
POSTECH, Korea

**NE1-2  11:45-12:00**  Multi-Step Annealing Method for Prevention of Se Segregation in Cu(In,Ga)Se2 Thin Film Solar Cells

Chaehwan Jeong and Kwon Hyeok
KITECH, Korea

**NE1-3  12:00-12:15**  Fabrication of CIGS Single Target by using Spark Plasma Sintering (SPS) Method and Its Application to Thin Films Process

Tae-Won Kim, Jae-Cheol Park, Hyun-Kuk Park, and Ik-Hyun Oh
KITECH, Korea
### [NM6] Nanoceramics

**Date & Time**  
November 8, 2013 (Friday) 11:15-12:30

**Room**  
Room B / # 2205

**Session Chair**  
Dr. Hidehiko Tanaka (NIMS, Japan)

<table>
<thead>
<tr>
<th>Session</th>
<th>Time</th>
<th>Title</th>
<th>Speaker(s)</th>
<th>Institution(s)</th>
</tr>
</thead>
</table>
| NM6-1   | 11:15-11:45 | Electric-Field Assisted Sintering of Nanoceramics | Young-Hwan Han  
Yeungnam Univ., Korea |                                                                            |
| NM6-2   | 11:45-12:15 | The Microscaffold Based on Nanostructured Calcium Phosphate Bioceramics for Application in Bone Tissue Engineering | Seog-Young Yoon  
Pusan Nat’l Univ., Korea |                                                                            |
| NM6-3   | 12:15-12:30 | Bioinspired Fabrication of Silica Thin Films on Histidine-Terminated Self-Assembled Monolayer |  
Ji Hun Park¹, Juno Lee¹, Sung Ho Yang², and Insung S. Choi¹  
¹KAIST, Korea, ²Korea Nat’l Univ. of Education, Korea |                                                                            |
ICNST 2013 Secretariat  
5F. Daehan Bldg., #1018 Dunsan-Dong, Seo-Gu, Daejeon 302-120, Korea  
Tel : +82-42-472-7461 / Fax : +82-42-472-7459 / Mobile: +82-10-4660-5102  
E-mail : icnst2013@geni-pco.com / Web : http://www.icnst.com/icnst2013/

### Nano Energy II

**Date & Time**  
November 8, 2013 (Friday) 13:30-14:45

**Room**  
Room C / # 1204

**Session Chair**  
Dr. Tae-Won Kim (KI TECH, Korea)

<table>
<thead>
<tr>
<th>NE2-1</th>
<th>13:30-14:00</th>
<th>Blue Ocean for Blue Biotechnology – Marine Bioenergy Production in Korea</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Choul-gyun Lee</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inha Univ., Korea</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NE2-2</th>
<th>14:00-14:15</th>
<th>Plasmonic Solar Cell and Its Absorption Enhancement Analysis using Cylindrical Ag Nano-Particle Model Based on F D T D</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Gye-Choon Park¹, Seung-Hee Yu¹, Jin Lee¹, Kil-Ju Na², YongJun Park³, and Richard S. Kim⁴</td>
</tr>
<tr>
<td></td>
<td></td>
<td>¹Mokpo Nat’l Univ., Korea, ²Mokpo Science College, Korea, ³Pohang Accelerator Lab., Korea, ⁴AFRL/RYDP and NRC, USA</td>
</tr>
</tbody>
</table>
[NM7] Nano Processing III

Date & Time       November 8, 2013 (Friday) 13:30-14:45
Room              Room B / # 2205
Session Chair     Prof. Young-Hwan Han (Yeungnam Univ., Korea)

<table>
<thead>
<tr>
<th>Session</th>
<th>Time</th>
<th>Title and Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>NM7-1</td>
<td>13:30-13:45</td>
<td>Preparation of Ga Doped ZnO Thin Films Prepared by Metal Organic Molecular Beam Epitaxy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chaehwan Jeong and SeongJae Park</td>
</tr>
<tr>
<td></td>
<td></td>
<td>KITECH, Korea</td>
</tr>
<tr>
<td>NM7-2</td>
<td>13:45-14:15</td>
<td>Vacuum Technology for Functional Nanoparticle Synthesis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tae Joo Park</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hanyang Univ., Korea</td>
</tr>
<tr>
<td>NM7-3</td>
<td>14:15-14:45</td>
<td>Nano-Engineering of Ionic Liquids and their Applications to Material Processing in Vacuum</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yuji Matsumoto</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tohoku Univ., Japan</td>
</tr>
</tbody>
</table>
P3-1 Fabrication Characterization of 1Ce10ScSZ Electrolyte Prepared by Co-Precipitation and Hydrothermal Treatment for Solid Oxide Fuel Cells
Young Mi Kim¹, Jong-Ho Lee³, Ik-Hyun Oh², Moo Sung Lee², and Ho-Sung Kim¹
¹KITECH, Korea, ²Chonnam Nat’l Univ., Korea

P3-2 Polymer Electrolyte Membranes with Ionic Channels for High Proton Conductivity in Fuel Cell Application
Su-Bin Lee, Kwan-Soo Lee, Myung-Hwan Jeong, Young-Jea Kim, Cheong-Min Min, Min-Kyoong Ahn, Mi-Jeong Kim, and Jae-suk Lee
GIST, Korea

P3-3 Nanostructure Developments of TiO2 Nanocrystals and Aerogels and Their Dye-Sensitized Solar Cell Application
Chang-Yeoul Kim
KICET, Korea

P3-4 Fabrication of Pd Micro-Membrane Supported on Nano-Porous Anodized Aluminum Oxide for Hydrogen Separation
Taegyu Kim
Chosun Univ., Korea

Walaa Elsawy³, Chang-Lyoul Lee³, Shinuk Cho³, Seung-Hwan Oh³, Seung-Hyeon Moon³, Ahmed Elbarbary⁴, and Jae-Suk Lee¹
¹GIST, Korea, ²Univ. of Ulsan, ³KAERI, Korea, ⁴Tanta Univ., Egypt
P3-6  Synthesis of Graphene via Wet-Chemical Method and Their Application as an Electrocatalyst Support for Methanol Oxidation Reaction.
Yu Seong Noh, Youngmin Kim, Eun Ja Lim, Seonhwa Lee, and Won Bae Kim
GIST, Korea

P3-7  Ni/MgO-MgAl2O4 Catalysts with Bimodal Pore Structure for Steam-CO2-Reforming of Methane
Byung-hyuk Kim, Dong-ju Moon, and Sangwoo Kim
KIST, Korea

P3-8  The Structure and Properties of ICP Assisted Magnetron Sputtered Nanocrystalline TiAlN Coatings for Proton Exchange Membrane Fuel Cell
Dae-Han Seo and Sung-Yong Chun
Mokpo Nat’l Univ., Korea

P3-9  Enhancing the Light Harvesting Efficiency of Dye-Sensitized Solar Cells: The Role of Solid and Mesoporous TiO2 Nanoparticles in Photoelectrode
Soo Hyung Kim, Hyung Woo Lee, and Ji Young Ahn
Pusan Nat’l Univ., Korea

P3-10  Synthesis and Optical Properties of CuInS2 Nano-Particles on TiO2 Thin Film for Absorption Layer of Solar Cell by Solvothermal Method
Gye-Choon Park1, Seung-Hee Yu1, Soon-Youl So1, Kil-Ju Na2, Yong Jun Park1, and Richard S. Kim3
1Mokpo Nat’l Univ., Korea, 2Mokpo Science College, Korea, 3Pohang Accelerator Lab., Korea,
2AFRL/RDYP and NRC, Korea

Seung-Hee Yu1, Gye-Choon Park1, Soon-Youl So1, Jin Lee1, Yong Jun Park2, and Richard S. Kim3
1Mokpo Nat’l Univ., Korea, 2Pohang Accelerator Lab., Korea, 3AFRL/RDYP and NRC, USA
ICNST 2013
International Conference on Nano Science and Nano Technology
November 7-8, 2013 / Chosun University, Gwangju, Korea

P3-12 Improving the Electrochemical Properties of LiMnPO4 by Glucose-Assisted Polyol Reaction
Jinju Song, Jihyeon Gim, Sungjin Kim, Wangeun Park, Jeonggeun Jo, and Jaekook Kim
Chonnam Nat‘l Univ., Korea

P3-13 High Lithium Storage Performance of Fe2O3/Graphene Nanocomposite as an Anode Material for Secondary Lithium Ion Battery
Alok Kumar Rai, Trang Vu Thi, and Jaekook Kim
Chonnam Nat‘l Univ., Korea

P3-14 Fabrication N, F, and N/F-Doped TiO2 Photoelectrodes for Dye-Sensitized Solar Cells Application
Su Kyung Park, Tae Kwan Yun, and Jae Young Bae
Keimyung Univ, Korea

P3-15 Synthesis of High Capacity Amorphous Carbons for Advanced Lithium-Ion Battery
Seong Hun Jeong, Tae Jeong Kim, Jeong Yoon Koh, Eun Hee Kim, and Yongju Jung
Korea Univ. of Tech. and Education, Korea

P3-16 Optimization of Characteristics CIS Absorber Layers Fabricated by One-Step Sputtering Process
Jeon-Ryang Lee¹, Eun Mi Han², Seung-Hyun Lee³, Jae-Cheol Park³, and Tae Won Kim¹
¹KITECH, Korea, ²Chonnam Nat‘l Univ., Korea

P3-17 Synthesis of Ni-Doped LiFePO4 Electrode Materials using Simple Solid State Reaction
Sungjin Kim, Jungwon Kang, Jihyeon Gim, Jinju Song, Alok Kumar Rai, and Jaekook Kim
Chonnam Nat‘l Univ., Korea
<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>P3-18</td>
<td>Surface Passivation Effect of Atomic Layer Deposited Al2O3 using Ozone on Silicon Solar Cell</td>
<td>Young Joon Cho and Hyo Sik Chang, Chungnam Nat’l Univ., Korea</td>
</tr>
<tr>
<td>P3-19</td>
<td>Application of Porous Materials to Sulfur Cathode for Enhanced Cycle Properties of Lithium-Sulfur Batteries</td>
<td>Tae Jeong Kim, Seong Hun Jeong, Jeong Yoon Koh, Eun Hee Kim, and Yongju Jung, Korea Univ. of Tech. and Education, Korea</td>
</tr>
<tr>
<td>P3-20</td>
<td>Rapid Polyol-Assisted Microwave Synthesis of Nanocrystalline LiFePO4/C Cathode for Lithium-Ion Batteries</td>
<td>Baboo Joseph Paul, Jihyeon Gim, Sora Baek, Jungwon Kang, Jinju Song, Sungjin Kim, and Jaekook Kim, Chonnam Nat’l Univ., Korea</td>
</tr>
<tr>
<td>P3-21</td>
<td>Optical and Structural Properties of a ZnS Thin Film Fabricated with RF Magnetron Sputtering System</td>
<td>Dong-Chan Shin, Bo-Ra Koo, and Yong-Taeg Oh, Chosun Univ., Korea</td>
</tr>
<tr>
<td>P3-22</td>
<td>Laser-Printed Thin-Film Electrodes for Cu(In,Ga)Se2 Thin-Film Photovoltaic Applications</td>
<td>Doyeon Cho, Jiwoong Kim, Hwanmin Jeong, Young-Kil Jun, and Nam-Hoon Kim, Chosun Univ., Korea</td>
</tr>
<tr>
<td>P3-23</td>
<td>Role of TiO2 Nanofibers as a Scattering Layer for the Enhanced Performance of Dye-Sensitized Solar Cells</td>
<td>Ji-Hye Lee1, Kyun Ahn1, Soo Hyung Kim1, Jong Man Kim1, Se-Young Jeong1, Jong-Sung Jin2, Euh Duck Jeong2, and Chae-Ryong Cho1, 1Pusan Nat‘l Univ., Korea, 2KBSI, Korea</td>
</tr>
<tr>
<td>P3-24</td>
<td>Structural and Optical Properties of Cu-Poor CIGS Thin Films Fabricated by One-Step Sputtering Employing a Single Target</td>
<td>Jae-Cheol Park1, Young-Jun Lee1,2, Joo-Hyung Kim2, and Tae-Won Kim1, 1KITECH, Korea, 2Inha Univ., Korea</td>
</tr>
</tbody>
</table>
P3-25  Fabrication of Flow Field Plates by Lithography Process and RF Sputtering Technique for Direct Methanol Fuel Cell

Ho Chang, Mu-Jung Kao, and Zhi-Lun Chen
Nat'l Taipei Univ. of Tech., Taiwan

P3-26  Successive Adsorption of Natural Dyes for Light Harvesting over a Wide Range of Avelengths in Dye-Sensitized Solar Cells

Jung-Hoon Kim¹, Tae-Young Kim², Kyung-Hee Park¹, and Jae-Wook Lee¹
¹Chosun Univ., Korea, ²Chonnam Nat'l Univ., Korea

P3-27  Ion Selectivity of Alkali- and Alkaline-Earth Cations on Activated Carbon Electrodes

Jae-Hyeok Lee¹, Tae-Young Kim², Kyung-Hee Park¹, and Jae-Wook Lee¹
¹Chosun Univ., Korea, ²Chonnam Nat'l Univ., Korea

P3-28  Color Change of Red Cabbage Dye as a Natural Dye for Dye-Sensitized Solar Cell

Kyung Hee Park¹, Hyun Seok Ko², Eun-Mi Han², and Jae Wook Lee²
¹Chosun Univ., Korea, ²Chonnam Nat'l Univ., Korea

P3-30  Property of Multifunctional TiO2-Fly Ash/Polyurethane Electrospun Nanofiber

Han Joo Kim³, Hem Raj Pant¹,², Jun Hee Kim¹, Nag Jung Choi³, and Cheol Sang Kim³
¹Chonbuk Nat'l Univ., Korea, ²Tribhuvan Univ., Nepal

P3-31  Investigation on Physicochemical Surface Properties of Polycarbonate Surface Modified by using DBD Plasma Treatment

Do Hee Lee, Tae Hyung Kim, Bo Sang Hwang, In Gi Kim, and Cheol Sang Kim
Chonbuk Nat'l Univ., Korea
<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>P3-32</td>
<td>Influence of Lactic Acid on Degradation of Electrospun Poly(ε-Caprolactone) Fibers</td>
<td>Eun Kyo Kim, Hem Raj Pant, Seung-Ji Kang, In-Gee Kim, Chan-Hee Park, and Cheol Sang Kim</td>
</tr>
<tr>
<td>P3-33</td>
<td>Simple and Rapid Synthesis of Nanosheet-Based ZnO Hierarchical Structure Decorated with Highly Mono-Dispersed Ag Nanoparticles</td>
<td>Uyanga Dashdorj, Altangerel Amarjargal, and Cheol Sang Kim</td>
</tr>
<tr>
<td>P3-34</td>
<td>Effect of the Dielectric Material Inserted into the Transition Metal in the Unipolar Resistive Random Access Memory Devices</td>
<td>Ju Tae Ryu, Sung Hwan Jang, and Tae Whan Kim</td>
</tr>
<tr>
<td>P3-35</td>
<td>Schottky Barrier Lowering Effect in Ni Contacts with Embedded Nanoparticles to AlGaN/GaN Hetrojunction SBDs</td>
<td>Sang-Mo Koo and Min-Seok Kang</td>
</tr>
<tr>
<td>P3-36</td>
<td>Growth of Non-Polar ZnO Nano Structure On (1-102) R-Plane Sapphire Substrates by Hydrothermal Synthesis</td>
<td>J. Jang, S.J. Bak, G. Park, Y. Ko, H. Bae, and J.-S. Ha</td>
</tr>
<tr>
<td>P3-37</td>
<td>Electrical and Optical Properties of Transparent IZTO/Ag/IZTO Multilayer Films Deposited on Glass Substrates</td>
<td>Dohyun Oh, Nam Hyun Lee, Woon-Jo Cho, and Tae Whan Kim</td>
</tr>
<tr>
<td>P3-38</td>
<td>Characteristics of Flexible Composite Films using a Mechanoluminescence Studies</td>
<td>Jeong-pyo Oh, In Seok Choi, and Gi-seok Heo</td>
</tr>
</tbody>
</table>

ICNST 2013 Secretariat
5F. Daehan Bldg., #1018 Dunsan-Dong, Seo-Gu, Daejeon 302-120, Korea
Tel : +82-42-472-7461 / Fax : +82-42-472-7459 / Mobile: +82-10-4660-5102
E-mail : icnst2013@geni-pco.com / Web : http://www.icnst.com/icnst2013/
P3-39  Study of the Characteristics of Transfer Graphene by Rapid CVD Deposition.
In Seok Choi\textsuperscript{1}, Jeong-pyo Oh\textsuperscript{2}, and Gi-seok Heo\textsuperscript{3}
\textsuperscript{1}DongShin Univ., Korea, \textsuperscript{2}Chonnam Nat’l Univ., Korea, \textsuperscript{3}KITECH, Korea

P3-40  Enhancement of Electric Characteristics of the Charge Trap Flash Memory Device with a High-k Structure
Sung Yun Shin, Ju Tae Ryu, and Tae Whan Kim
Hanyang Univ., Korea

P3-41  Effect of the Dielectric Material in the Fin to the Distribution of the Channel Region in n-Channel FinFETs
Hyun Soo Jung, Ju Tae Ryu, and Tae Whan Kim
Hanyang Univ., Korea

P3-42  Luminescence Properties and Characterization of Eu\textsuperscript{3+} Doped CaWO\textsubscript{4} Nano Particles in Mixed Solution via Hydrothermal Synthesis
Yeqing Chen, Byung Kee Moon, Byung Chun Choi, and Jung Hyun Jeong
Pukyoung Nat’l Univ., Korea

P3-43  Effects of Substrate Temperature on the Structural, Optical and Electrical Characteristics of Ti-In-Zn-O Films Deposited by RF Magnetron Sputtering
Eun Mi Kim\textsuperscript{1}, Yu-ri Lee\textsuperscript{2}, Dong-chan Shin\textsuperscript{2}, and Gi-seok Heo\textsuperscript{1}
\textsuperscript{1}KITECH, Korea, \textsuperscript{2}Chosun Univ., Korea

P3-44  Surface Oxidation and Sonication Exfoliation of Graphite to Afford Graphenes without Reduction Process
Eun-Sil Kang, Hyoung-Ju Yoon, and Tae-Ho Yoon
GIST, Korea

P3-45  Nano Copper Powders Synthesized by a Polymer Solution Method at Low Temperature
Young-Min Han\textsuperscript{1}, Choong-Hwan Jung\textsuperscript{1}, and Sang-Jin Lee\textsuperscript{2}
\textsuperscript{1}KAERI, Korea, \textsuperscript{2}Mokpo Nat’l Univ., Korea
<table>
<thead>
<tr>
<th>Paper Number</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>P3-46</td>
<td>Fabrication of Micro and Nano Structure via Photo Resist-Free Process using Polystyrene Beads</td>
<td>Changheon Kim(^1,2), Sungjae Park(^1), Sangwoo Lim(^2), and Chaehwan Jeong(^1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(^1)KITECH, Korea, (^2)Yonsei Univ., Korea</td>
</tr>
<tr>
<td>P3-47</td>
<td>Optical and Electrical Properties of TIZO/Ag/TIZO Multilayer Films Deposited by RF Magnetron Co-Sputtering</td>
<td>Yu-Ri Lee(^1), Eun-Mi Kim(^2), Gi-Seok Heo(^2), and Dong-Chan Shin(^1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(^1)Chosun Univ., Korea, (^2)KITECH, Korea</td>
</tr>
<tr>
<td>P3-48</td>
<td>Catalytic Co-Pyrolysis of Particle Board and Polypropylene over Nanoporous Al-MCM-48</td>
<td>Hyung Won Lee(^1), Suek Joo Choi(^1), Sung Hoon Park(^2), Sang-Chul Jung(^2), Jong-Ki Jeon(^3), Sang Chai Kim(^4), and Young-Kwon Park(^1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(^1)Univ. of Seoul, Korea, (^2)Sunchon Nat’l Univ., Korea, (^3)Kongju Nat’l Univ., Korea, (^4)Mokpo Nat’l Univ., Korea</td>
</tr>
<tr>
<td>P3-49</td>
<td>Catalytic Gasification of Lignin over Nanoporous Ni/MSU-F</td>
<td>Kyung Seon Park(^1), Hyeon Koo Kang(^1), Sung Hoon Park(^2), Sang-Chul Jung(^2), Seong-Soo Kim(^3), Jong-Ki Jeon(^4), Sang Chai Kim(^5), and Young-Kwon Park(^1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(^1)Univ. of Seoul, Korea, (^2)Sunchon Nat’l Univ., Korea, (^3)KIER, Korea, (^4)Kongju Nat’l Univ., Korea, (^5)Mokpo Nat’l Univ., Korea</td>
</tr>
<tr>
<td>P3-50</td>
<td>Catalytic Conversion of Korea Giant Miscanthus over Nanoporous Silica Material</td>
<td>Sung Ho Jin(^1), Hyung Won Lee(^1), Eun Wha Lee(^1), Sung Hoon Park(^2), Sang-Chul Jung(^2), Changkook Ryu(^3), Jong-Ki Jeon(^4), Sang Chai Kim(^5), and Young-Kwon Park(^1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(^1)Univ. of Seoul, Korea, (^2)Sunchon Nat’l Univ., Korea, (^3)Sungkyunkwan Univ., Korea, (^4)Kongju Nat’l Univ., Korea, (^5)Mokpo Nat’l Univ., Korea</td>
</tr>
<tr>
<td>P3-51</td>
<td>Catalytic Combustion of VOC over Metal Nanoparticle Loaded Mesoporous Silica</td>
<td>Hyung Won Lee(^1), Sung Hoon Park(^2), Sang-Chul Jung(^2), Jongsoo Jurng(^3), Gwi-Nam Bae(^3), Jong-Ki Jeon(^4), Sang Chai Kim(^5), and Young-Kwon Park(^1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(^1)Univ. of Seoul, Korea, (^2)Sunchon Nat’l Univ., Korea, (^3)KIST, Korea, (^4)Kongju Nat’l Univ., Korea, (^5)Mokpo Nat’l Univ., Korea</td>
</tr>
<tr>
<td>P3-52</td>
<td>Nano-Structural Analysis of Geopolymer Made of Municipal Incineration Slag</td>
<td>Yongsung Kim and Seunggu Kang</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kyonggi Univ., Korea</td>
</tr>
<tr>
<td>Paper</td>
<td>Title</td>
<td>Authors</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>P3-53</td>
<td>Tunneling Behavior and P-type Transfer Characteristic of Organic Pentacene Thin Film Transistor and Gate Insulator</td>
<td>Teresa Oh</td>
</tr>
<tr>
<td>P3-55</td>
<td>Carrier Transport Mechanisms of Organic Bistable Devices Utilizing Nanoparticle Layer Embedded in Organic Material</td>
<td>Chan Ho Yoo and Tae Whan Kim</td>
</tr>
<tr>
<td>P3-56</td>
<td>Effect of Nano Structure on the Thermal Properties of Sintered BN with Low-Melting Glass</td>
<td>Man-Hyung Han and Seung-gu Kang</td>
</tr>
<tr>
<td>P3-57</td>
<td>Optical and Electrical Properties of ITO/Ag NW/ITO TCO Thin Films for Application of OLED Lighting Device</td>
<td>Woo-Jin Yeon, Yong-Taeg Oh, and Dong-Chan Shin</td>
</tr>
<tr>
<td>P3-58</td>
<td>Epitaxial Growth of Hexagonal LaFeO3 Thin Films using Pulsed Laser Deposition</td>
<td>S. S. Lee, E. Y. Park, H. J. Lee, G. W. Kim, and J. Y. Jo</td>
</tr>
<tr>
<td>P3-59</td>
<td>Electrical and Thermal Properties of Nanocomposites Based on Epoxy Resin and Silver Nanowires Modified by Thiols</td>
<td>Gwang-Seok Song and Dai-Soo Lee</td>
</tr>
</tbody>
</table>

ICNST 2013 Secretariat
5F. Daehan Bldg., #1018 Dunsan-Dong, Seo-Gu, Daejeon 302-120, Korea
Tel : +82-42-472-7461 / Fax : +82-42-472-7459 / Mobile: +82-10-4660-5102
E-mail : icnst2013@geni-pco.com / Web : http://www.icnst.com/icnst2013/
P3-60 Synthesis and Characterization of the Comb-Shaped Poly(2-Hydroxyethyl Methacrylate)-g-Poly(ε-Caprolactone) on the Surface of Hydroxyapatite Nanoparticles via Combination of RAFT and ROP
Xuan Thang Cao and Kwon Taek Lim
Pukyong Nat’l Univ., Korea

P3-61 Structural and Optical Properties of Al-doped ZnO Nanostructures Synthesized by using an Electrochemical Deposition Method
Jong Ho Lee, Ki Hyun Kim, Dohyun Oh, and Tae Whan Kim
Hanyang Univ., Korea

P3-62 The Effect of Annealing Treatment of AGZO Thin Films Deposited by DC Moving Magnetron Sputtering on the Thermal Stability
Jong-Ho Kang¹, Juran Kim¹, Myung-Hyun Lee¹, Young Soo Lim¹, Won-Seon Seo¹, and Heon-Jin Choi¹
¹KICET, Korea, ²Yonsei Univ., Korea

P3-63 Study of Nano Structure and Thermal Properties of Diposide/ZnO Grain Composites using LTCC Process
Jimin Kang and Seunggu Kang
Kyonggi Univ., Korea

P3-64 Effect of Aging Time and Nano-Microstructure on the Physical Properties of Geopolymer/Granule Composite Fabricated with Fly Ash Powder and Grain
Ji-hwan Won and Seung-gu Kang
Kyonggi Univ., Korea

P3-65 Upconversion White Emission in LiNbO3 Triply-Doped Er3+, Yb3+, Tm3+ Phosphors
Sung-Jun Park, Dong-Kyun Kim, Dong-Hwa Choi, Deok-Hwa Kang, Deok-Jwa Kang and Sung-Soo Lee
College of Silla, Korea

P3-66 Observation of Nano Structure of Cordierite Fabricated by HF Treatment and Glass-Ceramics Process
Yu-Na Lee and Seung-Gu Kang
Kyonggi Univ., Korea
<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>P3-67</td>
<td>Performance of AlGaN/GaN MISHEMT with Optimized Ohmic Contact</td>
<td>Dong-Hyeok Son, Young-Woo Jo, Hee-Sung Kang, Do-Kyun Kim, Dong-Seok Kim, Chul-Ho Won, Vodapally Sindhuri, Sang-Min Jeon, Ji-Hyun Kim, Young-Jo Kim, Jun-Hyeok Lee, Ki-Sik Im, and Jung-Hee Lee</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kyungpook Nat’l Univ., Korea</td>
</tr>
<tr>
<td>P3-68</td>
<td>Synthesis of Carbon Encapsulated Fe-Nanoparticles using an Electron Beam Irradiation</td>
<td>Hyun Bin Kim, Yeong Ju Lee, Joon Pyo Jeun, Seung Hwan Oh, and Phil Hyun Kang</td>
</tr>
<tr>
<td></td>
<td></td>
<td>KAERI, Korea</td>
</tr>
<tr>
<td>P3-69</td>
<td>Preparation and Study on Nickel Oxide Reduction of Polyacrylonitrile-Based Carbon Nanofibres by Thermal Treatment</td>
<td>Yeong-Ju Lee1,2, Hyun-Bin Kim1, Joon-Pyo Jeun1, Dae-Soo Lee2, and Phil Hyun Kang1 [1]KAERI, Korea, 2Chonbuk Nat’l Univ., Korea</td>
</tr>
<tr>
<td>P3-70</td>
<td>Template Synthesis of Caged Complexes and Their Multidimensional Structures and Photochemical Properties</td>
<td>Enkhuzul Otgonbaatar, Chee-Hun Kwak, and Min-Chul Chung [Sunchon Nat’l Univ., Korea</td>
</tr>
<tr>
<td>P3-71</td>
<td>Nanoscale Self-Assembled Metal-Organic Frameworks Obtained from the Combination of Non-Cyclic Polyaza Molecules and Metal Ions</td>
<td>Enkhuzul Otgonbaatar, Chee-Hun Kwak, and Min-Chul Chung [Sunchon Nat’l Univ., Korea</td>
</tr>
<tr>
<td>P3-72</td>
<td>Effects of Electron Beam Irradiation on the Electrospinning of Polyacrylonitrile</td>
<td>Joon-Pyo Jeun1,2, Hyun-Bin Kim1, Seung-Hwan Oh1, Jung-Ki Park2, and Phil-Hyun Kang1 [1]KAERI, Korea, 2KAIST, Korea</td>
</tr>
<tr>
<td>P3-73</td>
<td>Influence of Starting Materials on the Hydroxyapatite Coatings Fabricated by Room Temperature Spraying Method</td>
<td>Jong Kook Lee1, Kyu Hong Hwang2, Byung Dong Hahn3, and Seog Young Yoon4 [1]Chosun Univ., Korea, 2Gyeongsang Nat’l Univ., Korea, 3KIMS, Korea, 4Pusan Nat’l Univ., Korea</td>
</tr>
</tbody>
</table>

**ICNST 2013 Secretariat**

5F. Daehan Bldg., #1018 Dunsan-Dong, Seo-Gu, Daejeon 302-120, Korea  
Tel : +82-42-472-7461 / Fax : +82-42-472-7459 / Mobile: +82-10-4660-5102  
E-mail : icnst2013@geni-pco.com / Web : http://www.icnst.com/icnst2013/
P3-74 Effect of Heat-Treatment Temperature on Crystallization of OLED Materials by Ionic Liquid
Yong-Taeg Oh and Dong-Chan Shin
Chosun Univ., Korea

P3-75 Combining Surface Initiated RAFT Polymerization, Thiol-Ene Click Chemistry and Coordination Chemistry for the Design of a Novel Photoluminescent Hydroxyapatite Nanohybrids
Long Giang Bach¹,², Xuan Thang Cao¹, Thanh Binh Mai¹, Tran Thi Nga², Md. Rafiqul Islam¹, and Kwon Taek Lim¹
¹Pukyong Nat’l Univ., Korea, ²Nguyen Tat Thanh Univ., Viet Nam

P3-76 Microstructure of Hydroxyapatite Coatings on Zirconia by Sol-Gel Method
So Dam Jin, Sang Cheol Eum, and Jong Kook Lee
Chosun Univ., Korea

P3-77 Fabrication and Microstructure of Hydroxyapatite Coatings on Zirconia by Room Temperature Spray Method
Hak Cheol Chae and Jong Kook Lee
Chosun Univ., Korea

P3-78 Effect of Molding Condition on Lap Joint of GFRP
Jin-Woo Kim and Dong-Gi Lee
Chosun Univ., Korea

P3-79 Impact Characteristics of CFRP Square Structure Member According to Change the Stacking Conditions
Ju-Ho Choi and In-Young Yang
Chosun Univ., Korea

P3-80 The Relationship between Stress and Temperature Distribution during Tension Test of GFRP by Fibre Orientation Variation
Jin-Woo Kim and Hyoung-Seok Kim
Chosun Univ., Korea
P3-81  **Formation of Au Nanoparticles on ZnO Nanowires by X-Ray Induced Wet Process**

M. S. Lee, J. H. Kim, and H. C. Kang
Chosun Univ., Korea

P3-82  **Evolution of Optical Properties of Ga2O3 Thin Films Grown by RF Magnetron Sputtering**

K. H. Choi and H. C. Kang
Chosun Univ., Korea

P3-83  **Solvent Effects on the Formation of Surface Nanostructure in P3HT:PCBM Systems during Thermal Annealing**

Hyo Jung Kim$^1$ and Hyun Hwi Lee$^2$
$^1$Pusan Nat’l Univ., Korea, $^2$Pohang Accelerator Lab., Korea

P3-84  **Microstructure and Mechanical Properties of Ultra-Fine Grain Al-Zr Alloy Fabricated by Mechanical Alloying Process**

Chung-Seok Kim
Chosun Univ., Korea

P3-85  **Effect of Al and Y2O3 on Mechanical Properties in Mechanically Alloyed Nanograin Ni-Based Alloys**

Chung-Seok Kim
Chosun Univ., Korea

P3-86  **Morphology Controlled Synthesis of Bi2Te3 Nanotubes and Their Thermoelectric Properties**

Ha-Yeong Kim$^1$, Mi-Kyung Han$^{1,2}$, and Sung-Jin Kim$^1$
$^1$Ewha Womans Univ., Korea, $^2$Chonnam Nat’l Univ., Korea

P3-87  **Effect of Indium Content on the Microstructure, Mechanical Properties, and Corrosion Behavior of Ti Alloys**

Mi-Kyung Han, Jae-Bong Im, Hae-Young Kim, Ho-Jun Song, and Yeong-Joon Park
Chonnam Nat’l Univ., Korea
P3-88  Studies on the Characteristics of Vertical Organic Transistor with Nano Patterned Gate using Block Copolymer
Hyo Bum Song, Seong Bin Lim, and Se Young Oh
Sogang Univ., Korea

P3-89  Synthesis of Cauliflower-like ZnS Microsphere using One-Step Assembly Method and Hydrothermal Reaction
Seo-Jin Park, Ju-Young Park, Cheol-Ho Hwang, Kyung-Jun Hwang, Do-Young Choi, and In-Hwa Lee
1Chosun Univ., Korea, 2Seoul Nat’l Univ., Korea, 3Univ. of California at San Diego, USA

P3-90  Structural Effect of Palladium on Carbon Catalyst on HFP Hydrogenation
Hyunman Tae, Soon Ae Park, and Kye Sang Yoo
Seoul Nat’l Univ. of Science and Tech., Korea

P3-91  Effect of Ionic Liquids on Synthesis of Ag/TiO2 Catalyst in Water Electrolysis
Eun Ran Gong, Mi-kyung Kim, and Kye Sang Yoo
Seoul Nat’l Univ. of Science and Tech., Korea

P3-92  Synthesis of Hierarchical Ag/CuO Nanocomposites via a Facile Hydrothermal Technique
Mark Kenneth Reyes, Altangerel Amarjargal, Ludwig Erik Aguilar, and Cheol Sang Kim
Chonbuk Nat’l Univ., Korea

P3-93  Enhancement of the Gate-All-Around Twin Si Nanowire Field-Effect Transistors
Dong Hun Kim, Sung Hwan Jang, and Tae Whan Kim
Hanyang Univ, Korea