## On/Offline Poster Session 4

### Thursday, October 7, 2021

<table>
<thead>
<tr>
<th>Poster Number</th>
<th>Time</th>
<th>Title</th>
<th>Authors (Institution, Country)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-09-001</td>
<td>09_1011</td>
<td>The Magnetocaloric Effect in GdMnO$_3$ Prepared by Sol-Gel Method</td>
<td>Yun-Hyuk Choi and Daehyeon Hong (Catholic Univ. of Daegu, Korea)</td>
</tr>
<tr>
<td>P-09-002</td>
<td>09_1019</td>
<td>Effect of above-Bandgap Photon Intensity on the Heterostructure Grown by Laser-Assisted Molecular Beam Epitaxy</td>
<td>Kwangwook Park (Jeonbuk Nat’l Univ., Korea)</td>
</tr>
<tr>
<td>P-09-003</td>
<td>09_1052</td>
<td>Growth Study of Epitaxial Hafnium Disulfide on Sapphire Substrate by Three-Zone Chemical Vapor Deposition</td>
<td>Juchan Hwang and Kwangwook Park (Jeonbuk Nat’l Univ., Korea)</td>
</tr>
<tr>
<td>P-09-004</td>
<td>09_1060</td>
<td>Analysis of Vertical MIT Behavior and Si/VO$_x$ Interface Characteristics of Vanadium Oxide Film using E-Beam</td>
<td>Hyo Bin Choi, Wanggon Lee, Hyunwoo Kang, Jaeseong Lim, Heecheol Shin, and Hyungtak Seo (Ajou Univ., Korea)</td>
</tr>
<tr>
<td>P-09-005</td>
<td>09_1080</td>
<td>A Study on the Hydrogen Transport Mechanism in In-Ga-Zn-O Thin Film Transistor and Its Electrical Characteristics</td>
<td>Hee Yeon Noh, Joonwoo Kim, June-Seo Kim, Myoung-Jae Lee, and Hyeon Jun Lee (DGIST, Korea)</td>
</tr>
<tr>
<td>P-09-006</td>
<td>[Offline] 09_1105</td>
<td>Study on Surface Morphology and Interfacial Adhesion of Cu Nano Thin Films on Mo Diffusion Barrier Layer by Direct Electrodeposition</td>
<td>Hyeoncheol Park, Sangchil Park, and Sunjung Kim (Univ. of Ulsan, Korea)</td>
</tr>
</tbody>
</table>
VI. Technical Program | 3. Technical Session

October 3 – 8, 2021 / Hybrid Conference in ICC Jeju, Korea

[P-09-007] 09_1154
Comparative Study of Sn-3.0Ag-0.5Cu and Sn-3.5Ag-0.5Bi-6In Solder Joints using Nanoindentation Test
Hungsuk You, Kyung Deuk Min, Jun-Ho Jang, Dong-Gil Kang, and Seung-Boo Jung (Sungkyunkwan Univ., Korea)

[P-09-008] 09_1160
Microstructural Evolution of In-48Sn Solder Joints with the Intense Pulsed Light Soldering Process
Eun Ha, Jun-Ho Jang, Kyung-Deuk Min, and Seung-Boo Jung (Sungkyunkwan Univ., Korea)

[P-09-009] 09_1227
Atomic Layer Deposited Phase-Change Materials Confined in Three-Dimensional Geometry
Namwook Hur, Changhwan Kim, Joonki Suh (UNIST, Korea)

[P-09-010] 09_1239
Artificial Nociceptor using Diffusive Memristor based on Surface Electromigration
Young Geun Song, Chong-Yun Kang, and Jung Ho Yoon (KIST, Korea)

[P-09-011] 09_1246
Atomic Layer Deposition of TiO₂ Thin Films with a Thermally Stable (CpMe₅) Ti(OMe)₃ Precursor
Hong Keun Chung, Sung Ok Won (KIST, Korea), Yongjoo Park (SK Trichem, Korea), Jin-Sang Kim (KIST, Korea), Tae Joo Park (Hanyang Univ., Korea), and Seong Keun Kim (KIST, Korea)

[P-09-012] 09_1247
Effect of Oxidant Type to the Properties of Atomic Layer Deposited Ferroelectric Hafnium Zirconium Oxide Films
Ah-Jin Cho, Ji Hoon Jeon, Hong Keun Chung, and Seong Keun Kim (KIST, Korea)
[P-09-013]  [Offline] 09_1254
Characteristics of Hf$_{1-x}$Zr$_x$O$_2$ Thin Films Grown by using 90-Degree off-Axis RF Sputtering
Shin Kyu Lee and Chung Wung Bark (Gachon Univ., Korea)

[P-09-014]  [Offline] 09_1270
Stress-Mediated Metal-Insulator Phase Transition in VO$_2$/Al$_2$O$_3$ Core-Shell Nanobeams
Ki Hoon Shin (Dongguk Univ., Korea), Su Yong Lee, Docheon Ahn (Pohang Accelerator Lab., Korea), Min-Kyu Seo (Dongguk Univ., Korea), Woong-Ki Hong (Korea Basic Sci. Inst., Korea), and Jung Inn Sohn (Dongguk Univ., Korea)

[P-09-015]  09_1290
Unprecedented Large Polarization in Polycrystalline Fluorite-Structured Ferroelectric Hf$_{0.5}$Zr$_{0.5}$O$_2$ Thin Film Deposited on W Electrode
Kun Yang, Dong Hyun Lee, Ju Yong Park (Pusan Nat’l Univ., Korea), Jin Joo Ryu, Gun Hwan Kim (KRICT, Korea), and Min Hyuk Park (Pusan Nat’l Univ., Korea)

[P-09-016]  09_1314
Ionic-Activated TiO$_2$ Nanorods Room Temperature Gas Sensor with Humidity Tolerance
Yumin Park, Gwang Su Kim, Young Geun Song, and Chong-Yun Kang (KIST, Korea)

[P-09-017]  [Offline] 09_1324
Electrically Modulated Capacitance in BiFeO$_3$ Thin Films via External Bias
Kyeongho Na and Sanghan Lee (GIST, Korea)

[P-09-018]  09_1366
Interfacial Layer Control by Low Pressure Anneal for Single Crystalline Silicon Growth
Woong Lee and Yonghan Roh (Sungkyunkwan Univ., Korea)
Improvement of Conductivity of SiNₓ by Metal Doping
Yae-Lim Hwang (KIST, Korea), Ho-Won Jang (Seoul Nat’l Univ., Korea), and Ji-Won Choi (KIST, Korea)

Growth of Telecom Wavelength Quantum Dots by Migration Enhanced Epitaxy
Suk In Park and Jin Dong Song (KIST, Korea)

Porous Organic Filler Based Flexible Generators with High Thermoelectric Performance
Sung-Jin Jung, Joonchul Shin, Sang-Soon Lim (KIST, Korea), Beomjin Kwon (Arizona State Univ., USA), Seung-Hyub Baek, Seung Keun Kim, Hyun-Cheol Song, Chong-Yun Kang (KIST, Korea), Hyung-Ho Park (Yonsei Univ., Korea), and Jin-Sang Kim (KIST, Korea)

Mechanical Properties and Microstructures of Cu/In-48Sn Alloy/Cu with Low Temperature TLP Bonding
Dong-Gil Kang, Kyung Deuk Min, Jun Ho Jang, Eun Ha, and Seung Boo Jung (Sungkyunkwan Univ., Korea)

Low Temperature Transient Liquid Phase Bonding by using Eutectic In-48Sn Alloy for Cu-Ni Bonding
Kyung Deuk Min, Dong-Gil Kang, Jun-Ho Jang, and Seung-Boo Jung (Sungkyunkwan Univ., Korea)

The Transient Liquid Phase Bonding by Ultrasonic-Assisted Soldering of Ni Contained Sn-58Bi Solder Paste for High-Temperature Packaging Applications
Kyung-Yeol Kim, Eun Ha, Kyung Deuk Min, and Seung-Boo Jung (Sungkyunkwan Univ., Korea)
### Technical Session 3: Technical Session

<table>
<thead>
<tr>
<th>Paper ID</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-09-025</td>
<td>Switching Characteristics Dependent on Thickness of Resistive Switching Layer using HfO₂ Based Memristor</td>
<td>Jae Uk Kwon and Jung Ho Yoon (KIST, Korea)</td>
</tr>
<tr>
<td>P-09-026</td>
<td>Low Power 1-Selector-1-Memristor (1S1R) Devices for Neuromorphic Computing Application</td>
<td>Ji Eun Kim and Jung Ho Yoon (KIST, Korea)</td>
</tr>
<tr>
<td>P-09-027</td>
<td>Thermodynamic Behaviors of Exciton-Phonon Interaction in Seed Morphology-Controlled YZnO Nanorods</td>
<td>Youngmin Lee, Sejoon Lee, Deuk Young Kim, Woochul Yang (Dongguk Univ., Korea), and Moon-Deock Kim (Chungnam Nat’l Univ., Korea)</td>
</tr>
<tr>
<td>P-09-028</td>
<td>Metal-Insulator-Metal Type Hydrogen Gas Sensors using TiO₂ Nanorods</td>
<td>Suk Yeop Chun, Young Geun Song, and Jung Ho Yoon (KIST, Korea)</td>
</tr>
<tr>
<td>P-09-029</td>
<td>Epitaxial PZT Film Based Ferroelectric Synaptic Transistors</td>
<td>Ji Young Lee, Hyung-Jin Choi, Seung Hyub Baek, Chong-Yun Kang (KIST, Korea), Sahn Nahm (Korea Univ., Korea), and Hyun-Cheol Song (KIST, Korea)</td>
</tr>
<tr>
<td>P-09-030</td>
<td>Synaptic Behavior in Two-Dimensional Perovskite Nanosheet-Based Memristor</td>
<td>Haena Yim (KIST, Korea), Chansoo Yoon (Konkuk Univ., Korea), So Yeon Yoo (KIST, Korea), Bae Ho Park (Konkuk Univ., Korea), and Ji-Won Choi (KIST, Korea)</td>
</tr>
<tr>
<td>P-09-031</td>
<td>Growth of Rutile-TiO₂ Thin Films on SnO₂ Layers as Gate Oxide in MOS Capacitors</td>
<td>Daeun Lim, Yeji Lee, Jonghyun Kim (Myongji Univ., Korea), Jina Kim, Jeong Hwan Han (Seoul Nat’l Univ. of Sci. and Tech., Korea), and Woongkyu Lee (Myongji Univ., Korea)</td>
</tr>
</tbody>
</table>
VI. Technical Program | 3. Technical Session

October 3 – 8, 2021 / Hybrid Conference in ICC Jeju, Korea

[P-09-032] [Offline] 09_1435
Direction Observation of Ferroelectric Effect on Ferroelectric Thin Film (SrMnO3) by using X-Ray Microdiffraction
Rui He, Rui Tang, Shinkyu Lee (Gachon Univ., Korea), Sangmo Kim (Sejong Univ., Korea), and Chung Wung Bark (Gachon Univ., Korea)

[P-09-033] [Offline] 09_1453
The Effect of Growth Temperature on Atomic Layer Deposition of Ti-Doped ZnO Thin Films
Jonghyun Kim, Daeun Lim, Yeji Lee, and Woongkyu Lee (Myongji Univ., Korea)

[P-09-034] 09_1460
Ferroelectric Properties of HfO2-Based Thin Films by the RF Sputtering Method
Hyung-Jin Choi, Sung-Jin Jung, Soo Young Jung, Rui Guang Ning, and Seung-Hyub Baek (KIST, Korea)

[P-09-035] [Offline] 09_1468
Synthesis and Characteristic of K/HSr2(1-x)A2xBn-3NbnO3n+1 Ceramics for Nanosheets
So-Yeon Yoo, Haena Yim (KIST, Korea), Sahn Nahm (Korea Univ., Korea), and Ji-Won Choi (KIST, Korea)

[P-09-036] [Offline] 09_1507
Serial and Parallel Charge Writing on the 110 ZnO Single Crystal Surface
Narendra Parmar and Ji-Won Choi (KIST, Korea)

[P-09-037] 09_1518
Reduction of Induction Time of ALD-HfO2 through Controlling Initial Growth of TEMAHf via in-Situ FTIR and DFT
Jihye Park and Hyo Sik Chang (Chungnam Nat’l Univ., Korea)

[P-09-038] 09_1649
Effects of Pd-Ni Nanoalloy Epitaxial Lateral Overgrowth on the Growth of α-Ga2O3 by Halide Vapor Phase Epitaxy
Gieop Lee, An-Na Cha (Chonnam Nat’l Univ., Korea), Hokyun Rho (Energy Convergence Core Facility, Korea), Hyo jung Bae (Optoelectronics Convergence Research Center, Korea), and Jun-Seok Ha (Chonnam Nat’l Univ., Korea)
VI. Technical Program | 3. Technical Session

[P-09-039] 09_1663
Room-Temperature Nonreciprocal Charge Transport in an InAs-Based Rashba Channel
Jeong Ung Ahn, Gihyeok Han, Seong Been Kim (Korea Univ., Korea), OukJae Lee, Hyung-jun Kim, and Hyun Cheol Koo (KIST, Korea)

[P-09-040] 09_1671
Effects of Ar/N2 Plasma Treatment Conditions on the Low-Temperature Cu-Cu Direct Bonding Characteristics
Seonghun Choi, Kirak Son, Gahui Kim (Andong Nat’l Univ., Korea), Sengmin Park, Yoonho Kim, Sarah Eunkyung Kim (Seoul Nat’l Univ. of Science and Tech., Korea), and Young-Bae Park (Andong Nat’l Univ., Korea)

[P-09-041] 09_1677
Bipolar Resistive Switching Behavior of a Tantalum Amorphous Oxide for Non-volatile Memory
Jung-Hwa Cha and Myoung-Jae Lee (DGIST, Korea)

[P-09-042] 09_1721
Negative Differential Transconductance Ambipolar WSe2 Field-Effect Transistors For Ternary NAND/NOR Logic Gates
Maksim Andreev, Jae-Woong Choi, and Jin-Hong Park (Sungkyunkwan Univ., Korea)

[P-09-043] [Offline] 09_1825
Enhancement of Efficiency Improvement of Flexible InGaP-GaAs Solar Cell by TiO2 Nanorod Textured Surface
Chae Won Kim, Gwangyeol Park, and Hyo Jin Kim (KOPTI, Korea)

[P-09-044] [Offline] 09_1831
A Study on Epitaxial Lift-Off Process of III-V Solar Cells using Flexible Substrate Bonding
Gwangyeol Park, Cheawon Kim, and Hyojin Kim (KOPTI, Korea)
VI. Technical Program | 3. Technical Session

October 3 – 8, 2021 / Hybrid Conference in ICC Jeju, Korea

[P-09-045] 09_1846
Atomic Layer Etching of Nanometer-Scale Patterned Cu Thin Films using Chelation with Organic Gas
Seung Hyun Kim, Eun Taek Lim, Sung Yong Park, Ji Soo Lee, and Chee Won Chung (Inha Univ., Korea)

[P-09-046] 09_1868
Epitaxial Growth of Hf$_{0.5}$Zr$_{0.5}$O$_2$ Thin Films by Pulsed Laser Deposition
Sanghyeon Kim and Daesu Lee (POSTECH, Korea)

[P-09-047] 09_1888
Investigation of Epitaxial VO$_2$ Thin Film on TiO$_2$(001)
Daesu Lee and EunJo Ryoo (POSTECH, Korea)

[P-09-048] 09_1907
Improved Mechanical and Dielectric Properties of Porous Polymer Membrane based on PVC/PVA Blends Filled with NiCl$_2$ Particles
Kritsada Phatcharasit (Thaksin Univ., Thailand) and Wirach Taweepreda (Prince of Songkla Univ, Thailand)

[P-09-049] 09_1916
Two-Dimensional Ferroelectric Field Effect Transistor Based Artificial Synapse for Parallel Computing
Kyeong-Bae Lee and Jin-Hong Park (Sungkyunkwan Univ., Korea)

[P-09-050] 09_1953
Characterization of Ga$_2$O$_3$ Films Grown on C-Plane Sapphire and (-201) $\beta$-Ga$_2$O$_3$ Substrates by Plasma-Assisted Molecular Beam Epitaxy
Ngo Si Trong, Nguyen Quoc Vuong, and Soon-Ku Hong (Chungnam Nat’l Univ., Korea)

[P-09-051] 09_1958
Study of Analysis for Impurities in High Purity Gallium by Glow Discharge Mass Spectrometer
Jaesik Yoon and Jaeyeol Yang (Korea Basic Sci. Inst., Korea)
Improved Noise and Device Performances of AlGaN/GaN HEMTs with In Situ Silicon Carbon Nitride (SiCN) Cap Layer
Jinseok Choi, Ki-Sik Im, and Sung Jin An (Kumoh Nat’l Inst. of Tech., Korea)

Efficiency Improvement by Controlling the Photoelectrode Interface of TiO₂/Si Structure
Ryun Na Kim, Dong Hyeok Seo, Won Jin Kim, Ho yoon Na, Hyeon-Min Yim, and Woo-Byoung Kim (Dankook Univ., Korea)

MoO₂ Thin Film as a Conductive Oxide Electrode for the Next Generation DRAM Capacitor using Atomic Layer Deposition
Yewon Kim, Jihyeon Hwang, Daecheol Lee, and Woojin Jeon (Kyung Hee Univ., Korea)

An Empirical Investigation on the Effect of the Oxygen Vacancy in the ZrO₂ Thin Film on the Dielectric Property
Dong Hee Han, Ji Hyeon Hwang, and Woo Jin Jeon (Kyung Hee Univ., Korea)

Y-Doped HfO₂ Deposited by Atomic Layer Deposition using a Cocktail Precursor for DRAM Capacitor Dielectric Application
Jenam Kim (Kyung Hee Univ., Korea), Yong Joo Park, Sangho Kim (SK Trichem Co., Ltd., Korea), Byong Seok Kim, Ae Jin Lee, Dong Hee Han, Ji Hyeon Hwang (Kyung Hee Univ., Korea), Youngjin Kim (KIST, Korea), Ki-Chang Song, Hansol Oh (SK Trichem Co., Ltd., Korea)

Inducing Tetragonal-Phase HfO₂ by Applying the Laminated Structure with ZrO₂ for the DRAM Capacitor Application
Aejin Lee, Jihyeon Hwang, Donghee Han, and Woojin Jeon (Kyung Hee Univ., Korea)
VI. Technical Program | 3. Technical Session

October 3 – 8, 2021 / Hybrid Conference in ICC Jeju, Korea

[P-09-058] 09_2027
Improvement of ZrO$_2$-TiN Interface Properties using Passivation Layer to Suppress Interfacial Layer Formation
Dae Cheol Lee, Byung Seok Kim, Ji Hyeon Hwang, Dong Hee Han, and Woojin Jeon (Kyung Hee Univ., Korea)

[P-09-059] 09_2050
A Partial Gate-Negative Differential Transconductance Device based on h-BN/WSe$_2$ Structure
Jin-Hong Park and Seojoo Lee (Sungkyunkwan Univ., Korea)

[P-09-060] 09_2053
Selective and Localized Nanosecond UV Laser Annealing for Amorphous TiO$_2$ Thin Film: Transform to Rutile High-K Dielectric and Improve its Electrical Properties
Min Kyeong Nam, Jaewon Ahn, Eui Young Jung (Kyung Hee Univ., Korea), Ji Hyeon Hwang (KIST, Korea), and Woojin Jeon (Kyung Hee Univ., Korea)

[P-09-061] 09_2101
RRAM with High Endurance using All-Inorganic Perovskite Quantum Dot
Ho Won Jang and Daeun Lee (Seoul Nat’l Univ., Korea)

[P-09-062] 09_2114
Enhanced Photothermal and Photodynamic Properties of Nano Agents Composed with Conjugated Polymer Dots
Seonyoung Jo and Taek Seung Lee (Chungnam Nat’l Univ., Korea)

[P-09-063] 09_2123
Fabrication of Thin Film Transistor with Memory Function using Ferroelectric Layer
Jae Young Kim and Ho Won Jang (Seoul Nat’l Univ., Korea)
VI. Technical Program | 3. Technical Session

IUMRS-ICA 2021
International Union of Materials Research Societies -
International Conference in Asia 2021

[P-09-064]  [Offline] 09_2138
Threshold Switching and Resistive Switching of Ag Cluster in Organolead Halide Perovskite for One Selector - One Resistor Cross-Bar Array
In-Hyuk Im and Ho Won Jang (Seoul Nat’l Univ., Korea)

[P-09-065] 09_2142
Frequency Doubler and Universal Logic Gate based on Ambipolar Type 2D Materials
Tae Wook Kim, Jongtae Ahn, Jisu Jang, Seungho Song, and Do Kyung Hwang (KIST, Korea)

[P-09-066]  [Offline] 09_2143
Fermi-Level Pinning Free Complementary WSe₂ Circuits via 2D Van Der Waals Metal Contacts
Jisu Jang, Hyun-Soo Ra, Jongtae Ahn, Tae Wook Kim, Seung Ho Song, and Do Kyung Hwang (KIST, Korea)

[P-09-067] 09_2144
Linearly Polarized Sensitive Photodetector and Phase Shift Digital Holography using WSe₂/ReSe₂ Heterojunction
Jongtae Ahn, Jisu Jang, Seung Ho Song, Tae Wook Kim, and Do Kyung Hwang (KIST, Korea)

[P-09-068] 09_2145
Demonstration of Location Dependence Photocurrent and Spatio-Temporal Optoelectronic Properties of Crossbar Arrayed Indium Gallium Zinc Oxide Synaptic Devices
Seungho Song, Tae Wook Kim, Jisu Jang, Jongtae Ahn (KIST, Korea), Yonghoon Kim (Sungkyunkwan Univ., Korea), and Do Kyung Hwang (KIST, Korea)

[P-09-069] 09_2159
Phase Identification of Nano Grains in Epitaxial HfO₂-Based Ferroelectric Materials using STEM Image Deep Learning
Haneul Choi, Hyung-Jin Choi, Seung-Hyub Baek, Hong-Kyu Kim (KIST, Korea), Jin-Woo Park (Yonsei Univ., Korea), and Hye Jung Chang (KIST, Korea)
VI. Technical Program | 3. Technical Session

October 3 – 8, 2021 / Hybrid Conference in ICC Jeju, Korea

[P-09-070] 09_2165
High Hole Mobility Inorganic Halide Perovskite Field-Effect Transistors by Enhanced Phase Stability and Interfacial Passivation
Yoon Jung Lee and Ho Won Jang (Seoul Nat’l Univ., Korea)

[P-09-071] 09_2211
Poly-Crystalline Indium Gallium Oxide Thin-Film Transistors with High Mobility Exceeding 100 cm² Vs via Plasma-Enhanced Atomic Layer Deposition
Jae Seok Hur, Hyeon Joo Seul, Seung Hun Yoon, and Jae Kyeong Jeong (Hanyang Univ., Korea)

[P-09-072] [Offline] 09_2258
Engineering the Solvent Selection for Sequential Doping Process
Bo Eun Seo, Sang Eun Yoon (Ajou Univ., Korea), Ji Min Han (Konkuk Univ., Korea), Sang-Wook Kim, O-Pil Kwon (Ajou Univ., Korea), Bong-Gi Kim (Konkuk Univ., Korea), and Jong H. Kim (Ajou Univ., Korea)

[P-09-073] [Offline] 09_1280
PVDF Nanocomposite using 2D Nanosheets as Interlayers to Improve Electric Breakdown Strength
Ah-Rom Ryu, So Yeon Yoo, Haena Yim (KIST, Korea), Sahn Nahm (Korea Univ., Korea), and Ji-Won Choi (KIST, Korea)

[P-10-001] [Offline] 10_1054
Fabrication of 3D Scaffold Containing Human Adipose Tissue Derived Extracellular Matrix for Tissue Regeneration
Myung Gu Yeo, Minseong Kim, Chan Song Lee, Min-Jeong Park, Seong-Min Kim, Gyeongyeop Han, Hyoin Baig, Jihyo Park, Jae Hwa Hong, Jae Soung Kim, Yoon Ha Lee, Jeong Hyo Kim, So Won Jeon, Yue Jin Kim, and Bongsu Jung (Daegu-Gyeongbuk Medical Innovation Foundation, Korea)

[P-10-002] 10_1058
Bioactive Polymeric Scaffold with Polydeoxyribonucleotide and Stem Cell-Derived Extracellular Vesicles for Kidney Regeneration
So-Yeon Park, Kyoung-Won Ko (CHA Univ., Korea), Seungkwon You (Korea Univ., Korea), Eun Hye Lee, Tae Gyun Kwon (Kyungpook Nat’l Univ., Korea), and Dong Keun Han (CHA Univ., Korea)
<table>
<thead>
<tr>
<th>Paper No.</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>[P-10-003]</td>
<td>Degree of Conversion, Acid Neutralizing Ability and Shear Bond Strength of Novel Orthodontic Adhesives Containing Hydrated Calcium Silicate</td>
<td>Jae-Sung Kwon, A Ruem Han, and Song-Yi Yang <em>(Yonsei Univ., Korea)</em></td>
</tr>
<tr>
<td>[P-10-004]</td>
<td>A Bioactive Nanocomplex Incorporated PLGA Hybrid Scaffold for Bone Regeneration using Human Fetal MSCs</td>
<td>Da-Seul Kim, Jun-Kyu Lee, Jun Hyuk Kim <em>(CHA Univ., Korea)</em>, Tae-Hyung Kim <em>(Chung-Ang Univ., Korea)</em>, and Dong Keun Han <em>(CHA Univ., Korea)</em></td>
</tr>
<tr>
<td>[P-10-005]</td>
<td>Oral Administration Formulation that Effectively Controls Blood Glucose Level</td>
<td>Jeong Man An, Dong Yun Lee <em>(Hanyang Univ., Korea)</em>, and Yong-Kyu Lee <em>(Korea Nat’l Univ. of Transportation, Korea)</em></td>
</tr>
<tr>
<td>[P-10-006]</td>
<td>Synthesis of Fluorescent Conjugated Polymer Nanodots for Biological Sensing</td>
<td>Taek Seung Lee <em>(Chungnam Nat’l Univ., Korea)</em></td>
</tr>
<tr>
<td>[P-10-007]</td>
<td>Shape Memory Characteristics and Mechanical Properties of Non-Toxic Ti-Zr-Mo-Sn Biomaterials</td>
<td>Yeon-Wook Kim <em>(Keimyung Univ., Korea)</em></td>
</tr>
<tr>
<td>[P-10-008]</td>
<td>Influence of Powder Characteristics on the Surface Modification of Zirconia Substrate by Wollastonite using Aerosol Deposition</td>
<td>Yu Hyeon Yun and Jong Kook Lee <em>(Chosun Univ., Korea)</em></td>
</tr>
<tr>
<td>[P-10-009]</td>
<td>Bioactive Wollastonite Coating on Zirconia Substrate by Sol-Gel Method</td>
<td>Hyun Jung Park and Jong Kook Lee <em>(Chosun Univ., Korea)</em></td>
</tr>
</tbody>
</table>
VI. Technical Program | 3. Technical Session

October 3 – 8, 2021 / Hybrid Conference in ICC Jeju, Korea

[P-10-010] 10_1330
Bioactivity Improvement of Zirconia Substrate by the Slurry Coating of Wollastonite Powder
Jae Eun Go and Jong Kook Lee (Chosun Univ., Korea)

[P-10-011] [Offline] 10_1351
Control of Nanotube Volume on the Ti-6Al-4V Alloy with Various Condition of Anodization
Byeong Seok Lim and Han Cheol Choe (Chosun Univ., Korea)

[P-10-012] [Offline] 10_1353
Electrochemical Characteristics of Sr/Si-Doped HA Coating on the Ti Alloy Surface via Plasma Electrolytic Oxidation
Han Cheol Choe and Ji Min Yu (Chosun Univ., Korea)

[P-10-013] 10_1422
Controlled Synthesis of Bimagnetic FePt-Ferrite Nanaocubes with Enhanced Biocompatibility for Biomedical Application
Cheolgi Kim, Yunji Eom, and Ramulu Torati (DGIST, Korea)

[P-10-014] 10_1493
Hyaluronic Acid Hydrogel with Gradient Mechanical Properties for Tissue Engineering
Mina Kwon and Ki Su Kim (Pusan Nat’l Univ., Korea)

[P-10-015] 10_1495
Transdermal Delivery of Upconversion Dye Encapsulated Polymeric Nanoparticles for Photochemical Tissue Bonding
Hye Eun Choi and Ki Su Kim (Pusan Nat’l Univ., Korea)

[P-10-016] 10_1502
Flow Synthesis via Pickering Emulsion for Anisotropic Functional Nanoparticles as Triple-Responsive Nano-Motor
Byung Kwon Kang and Dong-Pyo Kim (POSTECH, Korea)
### VI. Technical Program | 3. Technical Session

**IUMRS-ICA 2021**

<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>[P-10-017]</td>
<td>Withdrawn</td>
<td></td>
</tr>
<tr>
<td>[P-10-018]</td>
<td>Withdrawn</td>
<td></td>
</tr>
<tr>
<td>[P-10-019]</td>
<td>Withdrawn</td>
<td></td>
</tr>
<tr>
<td>[P-10-020]</td>
<td>Controlled Drug Release from Photodynamic Alginate/Graphene Oxide Composite Hydrogel System</td>
<td>Da Young Kong (Jeonju Univ., Korea), Junsung Oh, Eun-Jung Lee (Dankook Univ., Korea), and Cheol-Min Han (Jeonju Univ., Korea)</td>
</tr>
<tr>
<td>[Offline] 10_1728</td>
<td>Nanotube Formation and Degradation Behaviors of Ti-6Al-4V Alloy</td>
<td>Hye Ri Cho and Han Cheol Choe (Chosun Univ., Korea)</td>
</tr>
<tr>
<td>[P-10-022]</td>
<td>Withdrawn</td>
<td></td>
</tr>
<tr>
<td>[P-10-024]</td>
<td>MXene-Functionalized PLCL/Collagen Nanofibrous Matrices to Facilitate Osteogenic Differentiation</td>
<td>Seok Hyun Lee, Moon Sung Kang, Hee Jeong Jang, Ji Eun Lee, Hyo Jung Jo (Pusan Nat’l Univ., Korea), Chuntae Kim (BIO-IT Foundry Tech. Inst., Korea), Jong Ho Lee (Daan Korea Corp., Korea), Seung Jo Jeong (GS Medical Co., Ltd., Korea), and Dong-Wook Han (Pusan Nat’l Univ., Korea)</td>
</tr>
</tbody>
</table>
VI. Technical Program | 3. Technical Session

October 3 – 8, 2021 / Hybrid Conference in ICC Jeju, Korea

[P-10-025] 10_1843
ZnO QDs-Apo ferritin as a Fluorescence Sensor Media for Dopamine
Hye Won Gil, Ho Kyung Lee, Dal Ho Lee, and Sang Joon Park (Gachon Univ., Korea)

[P-10-026] [Offline] 10_1967
Production of Photonic Crystal Microfiber in a Continuous Manner with Microfluidics
Kyung Han Kim (Chungnam Nat’l Univ., Korea), Jong Hyun Kim, Gun Ho Lee, Ji-Won Kim, Sang Hoon Han, Shin-Hyun Kim (KAIST, Korea), and Chang-Soo Lee (Chungnam Nat’l Univ., Korea)

[P-10-027] [Offline] 10_1993
Simple Fabrication of Protruding Microelectrode Arrays for Efficient Neural Stimulation using Liquid Crystal Polymer (LCP)
Dong Hyeon Lee, Jiman Youn, and Joonsoo Jeong (Pusan Nat’l Univ., Korea)

[P-10-028] [Offline] 10_1994
Droplet-Based Microfluidic Preparation of Highly Controlled Organic-Inorganic Hybrid Microspheres
Dong-Yeong Kim, Byungjin Lee (Chungnam Nat’l Univ., Korea), Kyoung-Ku Kang (Dong-Eui Univ., Korea), and Chang-Soo Lee (Chungnam Nat’l Univ., Korea)

[P-10-029] [Offline] 10_2013
The Dual-Functional Anticancer Imaging Agent by Cell-Penetrating Peptide Conjugation with the iRGD
Jinhui Ser, Hyesuk Hwang, Raveendran Athira, and Hoonsung Cho (Chonnam Nat’l Univ., Korea)

[P-10-030] [Offline] 10_2107
Mechanically Robust Antibiofouling Coating for Implantable Medical Devices, and Organ-on-a-Chip, and Bioprinting
Kijun Park, Jungmok Seo, and Yejin Jo (Yonsei Univ., Korea)
<table>
<thead>
<tr>
<th>Paper ID</th>
<th>Session Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>[P-10-031]</td>
<td>10_2115</td>
</tr>
<tr>
<td>BMP-2 Immobilized Lubricant-Infused Orthopedic Implant Surface Coating Exhibiting Anti-Inflammatory, Anti-Bacterial, and Osteogenic Functionalities</td>
<td>Jae Park, Kijun Park, Yeontaek Lee, and Jungmok Seo (Yonsei Univ., Korea)</td>
</tr>
<tr>
<td>[P-10-032]</td>
<td>10_2129</td>
</tr>
<tr>
<td>Synthesis of Conjugated Polymer Containing Benzothiadiazole Unit for High Fluorescence</td>
<td>Jong Woo Kim, Ju Ang Kim, Sihyun Kim, and Taek Seung Lee (Chungnam Nat’l Univ., Korea)</td>
</tr>
<tr>
<td>[P-10-033]</td>
<td>10_2225</td>
</tr>
<tr>
<td>An Experimental Study on the Fabrication of Biocompatible Hydrogel Nanofibers by Electrospinning</td>
<td>Chuan Li, Hsiu Yu Chi (Nat’l Yang Ming Chiao Tung Univ., Taiwan), J. H. Hsieh (Ming Chi Univ. of Tech., Taiwan), and N. Y. Chang (Nat’l Yang Ming Chiao Tung Univ., Taiwan)</td>
</tr>
<tr>
<td>[P-10-034]</td>
<td>10_2237</td>
</tr>
<tr>
<td>Controlled Drug Release with Chitosan-Alginate Multiple Encapsulated Beads</td>
<td>Kyung Hee Park, Ho-Jun Song, and Yeong-Joon Park (Chonnam Nat’l Univ., Korea)</td>
</tr>
<tr>
<td>[P-10-035]</td>
<td>10_2238</td>
</tr>
<tr>
<td>Crack-Free, Uniform, and Highly Dense Films of Binary Colloids</td>
<td>Hyo Eun Kim and Byung Mook Weon (Sungkyunkwan Univ., Korea)</td>
</tr>
<tr>
<td>[P-10-036]</td>
<td>10_2239</td>
</tr>
<tr>
<td>X-Ray Imaging Of Respiratory Droplets On Face Masks</td>
<td>Marta Gonçalves and Byung Mook Weon (Sungkyunkwan Univ., Korea)</td>
</tr>
<tr>
<td>[P-10-037]</td>
<td>10_2253</td>
</tr>
<tr>
<td>Development of Photoswitchable Anisotropic Hydrogels for Application in Nanorobotics</td>
<td>Monika Gupta and Dominik Lungerich (IBS, Korea)</td>
</tr>
</tbody>
</table>
Graphene Based Field-Effect Transistor Biosensor Platform For Monitoring H₂O₂
Soomin Kim and Oh Seok Kwon (KRIBB, Korea)

A Novel Tool for Detecting Exocytotic Dopamine Release
Seon Joo Park, Eunsu Ryu, Chan Jae Shin, and Oh Seok Kwon (KRIBB, Korea)

Development of FET-Biosensor Using Graphene Surface Functionalization
Jinyeong Kim and Oh Seok Kwon (KRIBB, Korea)

Fabrication of Biomaterial for SARS-CoV-2 Detection
Lina Kim and Oh Seok Kwon (KRIBB, Korea)

Dynamically Tunable Plasmonic Coupling based on Thickness Modulation Using the M13 Phage
Thanh Mien Nguyen (Pusan Nat’l Univ., Korea), Jong-Min Lee (Hallym Univ., Korea), Hyerin Song, Vasanthan Devaraj, Kyuju Kim, and Jin-Woo Oh (Pusan Nat’l Univ., Korea)

Development of Ophthalmic Disease Diagnosis System based on Three-Dimensional Plasmonic Nano Cluster
Minsu Jang, Won-Geun Kim, Eun-Jung Choi (Pusan Nat’l Univ., Korea), Jong-Min Lee (Hallym Univ., Korea), and Jin-Woo Oh (Pusan Nat’l Univ., Korea)

Discrimination of the Exhaled Compound of Lung Cancer Patients and Healthy Subjects by a Biosensor based on Essential 20 Amino Acids
Gyeong Ha Bak (Pusan Nat’l Univ., Korea), Jong-Min Lee (Hallym Univ., Korea), Eun Jung Choi, Won Geun Lee, and Jin-Woo Oh (Pusan Nat’l Univ., Korea)
[P-12-001] 12_1112
Study on Electrorefining System for Valuable Resource Recycling from Nd-Fe-B Permanent Magnet Wastes
Jihoo Kim, Sangchil Park, and Sunjung Kim (Univ. of Ulsan, Korea)

[P-12-002] 12_1181
Materials Analysis of Polymer Composite for Rolling Bearings in Cryogenic Conditions
Woo-Seok Seo, Yongbok Lee, and Jeon-Kook Lee (KIST, Korea)

[P-12-003] 12_1465
Development of Eco-Friendly Photoresist (PR) Removal Method using Atmospheric Pressure Plasma Etching for Semiconductor Process
Hyo Jun Jang, Jae Young Kim, Eun Young Jung, Gyu Tae Bae, and Heung-Sik Tae (Kyungpook Nat’l Univ., Korea)

[P-12-004] 12_1471
Defect-Free Chabazite (CHA) Zeolite Membrane by Developing a Thick Intermediate Layer for Organic Dehydration
Min-Zy Kim and Churl-Hee Cho (Chungnam Nat’l Univ., Korea)

[P-12-005] 12_1479
Synthesis of 2D SAPO-34 Particles with High Si/Al Ratio for MTO Application
Syed Fakhar Alam, Min-Zy Kim, Aafaq ur Rehman, Arepalli Devipriyanka, Churl Hee Cho, and Junaid Ammar (Chungnam Nat’l Univ., Korea)

[P-12-006] 12_1486
Nanosize Seeded Growth of High-Performance H-SOD Zeolite Membrane for Dehydration and Gas Separations
Devipriyanka Arepalli, Aafaq-ur Rehman, Syed Fakhar Alam, Minzy Kim, and Churl-Hee Cho (Chungnam Nat’l Univ., Korea)
VI. Technical Program | 3. Technical Session

October 3 – 8, 2021 / Hybrid Conference in ICC Jeju, Korea

[P-12-007] 12_1488

Liquid-Based Exfoliation of MFI Nanosheets using PVP
Aafaq ur Rehman, Syed Fakhar Alam, Junaid Ammar, Arepalli Devipriyanka, Min-Zy Kim, and Churl Hee Cho (Chungnam Nat’l Univ., Korea)

[P-12-008] 12_1489

Improvement in Mechanical Strength of Capillary Ceramic Support
Yongbin Kim, Arepallidevi Priyanka, Muhammad Junaid Ammar, Minzy Kim, Syed Fakhar Alam, Aafaq ur Rehman, and Churl Hee Cho (Chungnam Nat’l Univ., Korea)

[P-12-009] 12_1501

Silicalite-1 Zeolite Nanoparticle Coated PDMS Hollow Fiber Membrane for Pervaporation and Vapor Permeation
Muhammad Junaid Ammar, Churl Hee Cho, Aafaq ur Rehman, Syed Fakhar Alam, and Yong Bin Kim (Chungnam Nat’l Univ., Korea)

[P-12-010] 12_1538

A Study on the CoNi Nanoparticles for Electromagnetic Waves Absorber in High-Frequencies using Polyol Method
Drew Ahn, Jong-Hwan Park, Yeon-Je Lee, Yeong-Jun Park, Byeong-Sun Cho, Jae Chul Ro, and Su-Jeong Suh (Sungkyunkwan Univ., Korea)

[P-12-011] [Offline] 12_1584

Influence of Substrate Roughness on the Magnetic Anisotropy and Coercivity of Ultrathin Thulium Iron Garnet Films
Jong-Ryul Jeong, Viet Duc Duong, Phuoc Cao Van, and Thi Trinh Nguyen (Chungnam Nat’l Univ., Korea)

[P-12-012] 12_1650

Antibacterial Capacity of ZnO and Ag Nanowire Films
Ji-Hyeon Kim, Junfei Ma, Ga-Hyun Lee, Seunghun Lee, and Chang Su Kim (KIMS, Korea)
VI. Technical Program | 3. Technical Session

IUMRS-ICA 2021 International Union of Materials Research Societies - International Conference in Asia 2021

[P-12-013] 12_1722
Controlling Internal Structure of Porous Copper Film via Size-Controlled Copper Nanosheets for Electromagnetic Interference Shielding
Ho Kwang Choi, Tae-Wook Kim, Si-Yeong Yang, and Jae-Wook Kang (Jeonbuk Nat’l Univ., Korea)

[P-12-014] 12_1881
Optimization of Reduction-Diffusion Processing of Nd-Fe-B Magnetic Particles and Enhancement of (BH)max through Wet Ball Milling Process
Rambabu Kuchi, Vitalii Galkin, Seunghyun Kim, and Dongsoo Kim (KIGAM, Korea)

[P-12-015] 12_1891
Effect of Light Rare Earth Addition on Coercivity Enhancement of NdFeB Sintered Magnets
Vitalii Galkin, Seunghyun Kim, Rambabu Kuchi, and Dongsoo Kim (KIGAM, Korea)

[P-12-016] [Offline] 12_1950
Morphology Controlled Remote Epitaxy of Zinc Oxide via Wet Chemical Synthesis
Joonghoon Choi, Junseok Jeong, and Young Joon Hong (Sejong Univ., Korea)

[P-12-017] 12_1972
LDH-Derived NiCu-MgAl Catalysts for Steam Reforming of Macroalgae Bio-Oil
Hee Chul Woo, Seong Chan Lee (Pukyong Nat’l Univ., Korea), and Dae-Won Park (Pusan Nat’l Univ., Korea)

[P-12-018] 12_1998
Withdrawn

[P-12-019] 12_2003
Preparation and Characteristics of PFO-Based Pitch by Synthesis Temperature
SangJin Kim, Sungeun Park (Gumi Electronics and Information Tech. Research Inst., Korea), Ji Sun Im, and Min Il Kim (KRICT, Korea)
VI. Technical Program | 3. Technical Session

October 3 – 8, 2021 / Hybrid Conference in ICC Jeju, Korea

[P-12-020] 12_2127
More Effective Prussian Blue Immobilization onto Mesoporous Silica Fibers by Double-Dip Method for Enhanced Cs Ion Adsorption
Sihyun Kim and Taek Seung Lee (Chungnam Nat’l Univ., Korea)

[P-12-021] 12_2146
Hierarchical Titanium-Ferrocyanide Microparticles for the Removal of Radioactive Cesium from Water and Soil
Hee-Man Yang, Chan Woo Park, Youngho Sihn, Ilgook Kim, and In-Ho Yoon (KAERI, Korea)

[P-12-022] 12_2148
Facile Synthesis of CuFC Embedded Magnetic Microparticles for the Enhanced Removal of Cesium from Water
Yeonsoo Lee (KAERI, Korea), Taek Seung Lee (Chungnam Nat’l Univ., Korea), and Hee-Man Yang (KAERI, Korea)

[P-12-023] 12_2157
Catalytic Property of AuPt Alloy Catalysts for Direct Hydrogen Peroxide Synthesis
Hyobin Nam, Miri Shin, and Seung Yong Lee (KIST, Korea)

[P-12-024] [Offline] 12_2240
Capillary Bridge Retention between Two Particles
Gun Oh (Sungkyunkwan Univ., Korea) and Byung Mook Weon (Advanced Materials Science and Engineering, Korea)

[P-12-025] [Offline] 12_2271
Synthesis and Isolation of Sodium Tantalate (NaTaO₃) from Semiconductor Industry Tantalum Scrap
Jin-Ho Yoon (Inst. for Advanced Engineering, Korea), Bsudev Swain (Inst. for Advanced Engineering, India), Jieun Lee, Chan-Gi Lee (Inst. for Advanced Engineering, Korea), and Bon Woo Gu (ECO Recycling Co., Ltd., Korea)