



Session Title	Poster Session I
Date and Time	2018-08-21 / 15:30 - 17:00
Place	Exhibition Hall

TuP1

Optimal Calcination Temperature for the Best Sensing Performance of the Pt-Decorated In₂O₃ Nanorod Sensor

Jae Kyung Lee, Woo Seok Lee, and Chongmu Lee
Inha Univ., Korea

TuP2

Chemiresistive Ammonia Gas Sensor based on Graphene Decorated with CuO Nanoparticles

Oleksandr Tsymbalenko^{1,2}, Oleksii Ohienko¹, Yun-Sik Nam¹, Denis Usosky¹, Oh Young-Jei¹, and Kang-Bong Lee¹

¹KIST, Korea, ²Nat'l Technical Univ. of Ukraine, Ukraine

TuP3

Gas Sensor based on Fe-Doped ZnO Grown using Microwave System for The Detection of Volatile Organic Gases(VOCs) at Room Temperature

Sunil Babu Eadi Eadi, Sengeragchaa Bolortuya, Azimov Farkhod, Ngo Hoang Ngoc, Hee Jun Kim, and Sungjin Kim
Kumoh Nat'l Inst. of Tech., Korea

TuP4

Highly Sensitive and Selective Ethanol Sensor using Pt-Doped SnO₂ Hollow Nanospheres Prepared by Nano-Scale Kirkendall Effect

Bo-Young Kim, Jung Sang Cho, Ji-Wook Yoon, Chan Woong Na, Chul-Soon Lee, Jee Hyun Ahn, Yun Chan Kang, and Jong-Heun Lee
Korea Univ., Korea

TuP5

High Performance NO₂ Gas Sensors using Multi-Shelled WO₃ Yolk-Shell Spheres

Jun-Sik Kim, Ji-Wook Yoon, Yun Chan Kang, and Jong-Heun Lee
Korea Univ., Korea



TuP6

Ultrasensitive and Highly Selective Detection of Methylbenzene using MOF-Derived Hollow Hierarchical Co_3O_4 Nanocages with Tunable Size and Morphology

Young-Moo Jo¹, Tae-Hyung Kim¹, Chul-Soon Lee¹, Kyeorei Lim¹, Chan Woong Na², and Jong-Heun Lee¹

¹Korea Univ., Korea, ²KITECH, Korea

TuP7

Highly Sensitive and Selective Ethanol Sensors using Urchin-Like Mg-Doped ZnO Nanowire Networks Prepared by Vapor-Phase Growth

Chang-Hoon Kwak, Sunghyun Park, Hyung-Sik Woo, and Jong-Heun Lee
Korea Univ., Korea

TuP8

Growth of Branched Nanowires and Their Mechanisms for Improving Gas Sensing Properties

Hyoun Woo Kim, Myung Sik Choi, Jae Hoon Bang, and Wansik Oum
Hanyang Univ., Korea

TuP9

Enhancement of Gas Sensing Performance through the Branch Heterointerface and Catalytic Effect

Hyoun Woo Kim, Myung Sik Choi, Jae Hoon Bang, and Wansik Oum
Hanyang Univ., Korea

TuP10

Two-Dimensional Phosphorus-Doped Molybdenum Disulfide Thin Films for Ammonia Gas Sensor

Tae Hoon Kim, Yeon Hoo Kim, Ki Chang Kwon, Seo Yun Park, and Ho Won Jang
Seoul Nat'l Univ., Korea

TuP11

Characterization of Structural and Gas Sensitivities of ZnO Nanowires Synthesized on SnO_2 Seed Layers by Chemical Vapor Deposition

Byeong Gyu Yun¹, Nae Hyung Jang¹, Han Sol Yun¹, Jae Hyun Shim², and Nam Hee Cho¹
¹Inha Univ., Korea, ²Dongshin Univ., Korea



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TuP12

Selective Plasmonic Gas Sensing using Nanostructured Arrays

Jason Kim¹, Cheon Woo Moon¹, Inki Kim², Heonyeong Jeong², Junsuk Rho², and Ho Won Jang¹
¹Seoul Nat'l Univ., Korea, ²POSTECH, Korea

TuP13

Fabrication of Starting Material of Phosphorene by Vapor Transfer Method

Fatima Tuz Johra and Woo-Gwang Jung
Kookmin Univ., Korea

TuP14

Highly Sensitive and Fast Response Photodetectors based on Multilayer MoSe₂

Hyejoo Lee and Woong Choi
Kookmin Univ., Korea

TuP15

Modification of the Optoelectronic Properties of Single Layer MoS₂ by Ultraviolet-Ozone Treatment

Hae In Yang, Sunyeong Park, and Woong Choi
Kookmin Univ., Korea

TuP16

Photoluminescence Quenching in Single Layer WS₂ and WSe₂ by Ultraviolet-Ozone Treatment

Minji Kang, Hae In Yang, and Woong Choi
Kookmin Univ., Korea

TuP17

Effects of UV-O₃ Treatment on the Surface Properties of Single Layer MoS₂ Thin Films

Changki Jung and Woong Choi
Kookmin Univ., Korea

TuP18

Fluorinated Single Layer Graphene Fabrication using XeF₂ Gas Exposure at Room Temperature

Minhwan Ko, Sang Yeon Lee, and Hyungtak Seo
Ajou Univ., Korea



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TuP19

Study on Properties of Graphene/PANI Composite Paste for Electrode

Youngil Na, Ho Jun Choi, Se Hee Shin, Hyun Jun Kwon, Young Il Song, Hwa Sun Park, Jae chul Roh, Yong soo Oh, and Su-Jeong Suh
Sungkyunkwan Univ., Kore

TuP20

Synthesis of Large Surface Graphene by CVD(Chemical Vapor Deposition) for Electromagnetic Wave Shield

Ho-Jun Choi, Jong-Hwan Park, Se-Hee Shin, Dae-seok Seo, Han-Young Jung, Hyun-Jun Kwon, Sun-Woo Kim, Jung-woo Lee, Young-Il Na, and Su-Jeong Suh
Sungkyunkwan Univ, Korea

TuP21

Programmable Writing of Monolithically Integrated Circuits on a Two-Dimensional Semiconductor

Seung-Young Seo¹, Jaehyun Park¹, Kyung Song², Si-Young Choi¹, and Moon-Ho Jo^{1,3}
¹POSTECH, Korea, ²KIMS, Korea, ³IBS, Korea

TuP22

Formation of Edge-Contact for Depinning of 2D Molybdenum Disulfide

Kwang Young Lee, Changsik Kim, and Won Jong Yoo
Sungkyunkwan Univ., Korea

TuP23

Direct Observation of MoS₂ Grain Boundary using Atomic Force Microscopy

Jae Hwan Jeong, Yeonjoon Jung, Jong Hun Kim, and Gwan-Hyoung Lee
Yonsei Univ., Korea

TuP24

Drytype MoS₂ Field-Effect Transistor based Highly Sensitive Biosensor

Heekyeong Park, Seok Hwan Jeong, and Sunkook Kim
Sungkyunkwan Univ., Korea

TuP25

Coupling WSe₂ Nanosheet and InGaZnO Thin-Film Materials for Hybrid PN Diode and Photo Detector

Silah Lee and Seongil Im
Yonsei Univ., Korea



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TuP26

Transparent p-MoTe₂ 2D Transistor Enabled by an O₂-Plasma-induced MoO_x Layer and an Ultrathin Pt Layer as Contact Media

Yongjae Cho, Ji Hoon Park, Minju Kim, Yeonsu Jeong, Jongtae Ahn, Taeyoung Kim, Hyunyoung Choi, Yeonjin Yi, and Seongil Im
Yonsei Univ., Korea

TuP27

Gate-Tunable 2D Memristor Devices based on Monolithically-Integrated Vertical Heterojunctions

Huh Woong¹, Seonghoon Jang¹, Jae Yoon Lee¹, Donghun Lee¹, Donghun Lee¹, Jung Min Lee¹, Hong-Gyu Park¹, Jong Chan Kim², Hu Young Jeong², Gunuk Wang¹, and Chul-Ho Lee¹
¹Korea Univ., Korea, ²UNIST, Korea

TuP28

Structural and Electronic Properties of Graphene/Molecule/Graphene Vertical Junctions with Aryl Alkane Monolayers

Inho Jeong, Hyunseok Cha, and Hyunwook Song
Kyung Hee Univ., Korea

TuP29

Method of Multilayer MoS₂ Transistor for Improving Stability of High Electrical Performance

SooHo Choo, Healin Im, Jeonghun Kim, Na Liu, and Sunkook Kim
SKKU Univ., Korea

TuP30

Fabrication of Bio-Mimetic Taro Structure for Super-Hydrophobicity

Soomin Son¹, Sungjin Moon¹, Junho Jun¹, Pil-Hoon Jung¹, Jaemin Park¹, Daihong Huh¹, Kwan Kim¹, Minseop Byun¹, Yong Hoon Sung¹, Hee Chul Lee², and Heon Lee¹
¹Korea Univ., Korea, ²Korea Polytechnic Univ., Korea

TuP31

Simple and Self-Limited Nano-Welding Method of Nanowire Networks for Highly Conductive and Transparent Films

Kyongnam Kim, Kwanjin Oh, Byoungmoon Oh, Junyoung Park, Yoonjong Kim, and Youngheum Yeon
Daejeon Univ., Korea

TuP32

Effects of Growth Temperature And Rate on The Properties of ZnO Thin Films Rown on c-Plane Sapphire Substrates by Metal-Organic Chemical Vapor Deposition using Ultrasonic Nebulization

Choon-Ho Lee and Min-Seok Choi
Keimyung Univ., Korea



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TuP33

Electrical And Optical Properties of Al-Doped ZnO Thin Films Grown on C-plane Sapphire Substrates by Metal-Organic Chemical Vapor Deposition using Ultrasonic Nebulization

Min-Seok Choi and Choon-Ho Lee
Keimyung Univ., Korea

TuP34

Characteristics of Al₂O₃/SiN_x Stack Layer for P-Type Multi-Crystalline PERC Cell Rear Side Passivation

Dongkyun Kang¹, Yoonmook Kang², Hae-Seok Lee², and Donghwan Kim¹
¹Korea Univ., Korea, ²KU-KIST Green School, Korea

TuP35

Polarization-Induced Resistance Switching Characteristics of Morphology-Controlled VDF/TrFE Copolymer Ultrathin Films

Noriyuki Nagahata¹, Takashi Nakajima^{1,2}, Masahiro Ito¹, Yoichiro Hashizume¹, and Soichiro Okamura¹
¹Tokyo Univ. of Sci., Japan, ²PRESTO Japan Sci. and Tech. Agency, Japan

TuP36

Interaction of Metal Fuel Melt with Y₂O₃ Plasma-Spray Coating Nb Crucible

Ki-Hwan Kim, Ki-Won Hong, Sung-Chan Park, Seung-Uk Mun, and Jeong-Yong Park
KAERI, Korea

TuP37

Selective Decomposition of Ferroelectric Pb(Zr,Ti)O₃ Precursor by Infrared Free Electron Laser

Shota Hasegawa¹, Takashi Nakajima^{1,2}, Jun Fujioka¹, Yoichiro Hashizume¹, Takayuki Imai¹, Koichi Tsukiyama¹, and Soichiro Okamura¹
¹Tokyo Uni. of Sci., Japan, ²PRESTO Japan Sci. and Tech. Agency, Japan

TuP38

Growth of Pore-Less BaTiO₃ Single Crystal by Solid State Reaction

SeungHee Lee¹, JiHo Lim¹, ChunKil Park¹, Jin-Woo Kim¹, JungHo Ryu², WoonHa Yoon³, and DaeYong Jeong¹
¹Inha Univ., Korea, ²Yeungnam Univ., Korea, ³KIMS, Korea

TuP39

In-Situ Observation of Crystallization Process from Molten Phase of Ferroelectric Vinylidene Fluoride/Trifluoroethylene Copolymer

Masanari Miyamoto¹, Yoichiro Hashizume¹, Takashi Nakajima^{1,2}, and Soichiro Okamura¹
¹Tokyo Univ. of Sci., Japan, ²JST PRESTO, Japan



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TuP40

Structure and Characterization of (TiVCrZrNbMoHfTaWAlSi)N Coatings Prepared by Magnetron Sputtering with Different Nitrogen Flow Ratios

Du-Cheng Tsai and Fuh-Sheng Shieu
Nat'l Chung Hsing Univ., Taiwan

TuP41

Solution-Processed, Highly Adhesive Graphene Coatings for Corrosion Resistant of Metals

Gi-Cheol Son, Jaewon Jang, Sang-Soo Chee, and Moon-Ho Ham
GIST, Korea

TuP42

Effect of Plasma Ignition on Growth Temperature Decrease of Graphene in Plasma-Coupled Thermal Chemical Vapor Deposition System

Sung-Il Jo¹, Byeong-Joo Lee^{1,2}, and Goo-Hwan Jeong¹
¹Kangwon Nat'l Univ., Korea, ²Nat'l Nanofab Center, Korea

TuP43

Zn₂SnO₄ Thin Films Deposited by SILAR Method and their Activation under Simulated Solar Light Irradiation

Maria Rocio Alfaro^{1,2}, Isaias Juárez Ramírez¹, and Anakaren Saldaña Ramírez¹
¹Universidad Autónoma de Nuevo León, Mexico, ²CONACYT-Universidad Autónoma de Nuevo León, Mexico

TuP44

Computer Simulation of Temperature Parameter for Diamond Formation by using Hot-Filament Chemical Vapor Deposition

Chan Weon Song
Pusan Nat'l Univ., Korea

TuP45

Proposal of an Accelerated Test in Sulfur Corrosion by S₈ Gas of Casing Structure Electronic Modules Mounted in Engine Rooms

Abe Hiroyuki^{1,2}, Yasukawa Akio¹, Minamitani Rintaro³, and Saito Hiroyuki²
¹Hitachi Automotive Systems, Ltd., Japan, ²Tokyo Denki Univ., Japan, ³Hitachi, Ltd., Research & Development Group, Japan

TuP46

Interfacial Properties of Metal/Al₂O₃/InP Junctions with Post Deposition Annealing

Hogyoung Kim, Dong Ha Kim, and Byung Joon Choi
Seoul Nat'l Univ., Korea



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TuP47

2D Transition Metal Carbide (MXene) Fillers as Structural Reinforcements in Polymer Nanocomposites

Christine B. Hatter, Jay Shah, Santosh K. Yadav, Babak Anasori, Giuseppe R. Palmese, and Yury Gogotsi
Drexel Univ., USA

TuP48

Direct-Write Patternable, Highly Stretchable, and Wash-Resistant PEDOT:PSS Composite Conductor for Electronic Textile Applications

Bora Lee¹, Jung Ah Lim¹, Min Jung Kye¹, and Jinhan Cho²
¹KIST, Korea, ²Korea Univ., Korea

TuP49

Triboelectric Wearable Sensors based on Sewing Machine Stitching of Polyvinylidene Fluoride Fibers

Young-Eun Shin, Jeong-Eun Lee, Yoojeong Park, Han Gi Chae, and Hyunhyub Ko
UNIST, Korea

TuP50

Improved Hole Injection of NDI based OFETs using Solution-Processed Graphene Electrodes

Mu Seok Ko¹, Young Ju Jo², Hye Min Park², Jun Hyeok Jang², Kang Min Lee², and Mi Jung Lee²
¹Ulvac Inc., Korea, ²Kookmin Univ., Korea

TuP51

Large-Area and Defectless Nanograting Enabled by Multistep Pattern Downscaling Lithography for Triboelectric Nanogenerator

Wang Hee Seung and Lee Keon Jae
KAIST, Korea

TuP52

Effect of Hydrazine Doping on Chiral n-Channel Single Crystals

Jaeyong Ahn¹, Xiaobo Shang¹, Inho Song¹, Hiroyoshi Ohtsu², and Joon Hak Oh¹
¹POSTECH, Korea, ²Tokyo Inst. of Tech., Japan

TuP53

Investigation on Chiral Self-Discriminated Multifunctional Biocoordination Polymers

Xiaobo Shang¹, Inho Song¹, Hiroyoshi Ohtsu², Jaeyong Ahn¹, and Joon Hak Oh¹
¹POSTECH, Korea, ²Tokyo Inst. of Tech., Japan



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TuP54

Photoelectric Properties of Organic Thin-Film using Interlayer

Hong-Gyu Park¹, Seok-Gon Hwang¹, Myung-Geun Ma², Sung-Hoon Kim², Jung-Su Kim², and Sang-Geon Park³

¹Changwon Nat'l Univ., Korea, ²SFC Co. Ltd, Korea, ³Silla Univ., Korea

TuP55

Stable Alignment of Liquid Crystals on Self-Assembled Monolayers

Hong-Gyu Park¹, Seok-Gon Hwang¹, and Sang-Geon Park²

¹Changwon Nat'l Univ., Korea, ²Silla Univ., Korea

TuP56

Real-Time Sitting Posture Monitoring based on Highly Durable and Wash-Resistant Textile Pressure Sensor Array

Hyoung Jun Kim¹, Minjeong Kim¹, Jinwoo Park², Kwang-Koo Jee¹, Min-Chul Park¹, and Jung Ah Lim¹

¹KIST, Korea, ²Korea Univ., Korea

TuP57

Highly Efficient Stretchable Alternative-Current Electroluminescence (ACEL) Display using Multi-Composite Materials

Gilwoon Lee, Taeyeong Kim, and Unyong Jeong

POSTECH, Korea

TuP58

Fiber-based Organic Field-Effect Transistor Operating at Low-Voltage with High-performance

Soo Jin Kim^{1,2}, Ho Won Jang², Se Hyun Kim³, and Jung Ah Lim¹

¹KIST, Korea, ²Seoul Nat'l Univ., Korea, ³Yeungnam Univ., Korea

TuP59

Visco-Poroelastic Ion Pumps for Triboelectric Nanogenerators and Self-Powered Mechanotransducers

Joo Sung Kim¹, Hee Jae Hwang², Eunsong Jee¹, Dukhyun Choi², and Do Hwan Kim¹

¹Hanyang Univ., Korea, ²Kyung Hee Univ., Korea

TuP60

A Conformable Flexible Temperature Sensor as a Patch-based Mobile Healthcare System

Muhammad Naqi, Uihyun Jung, Srinivas Gandla, Hyeokju Chae, and Sunkook Kim

Sungkyunkwan Univ., Korea



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TuP61

A Single Layer Network of Ag Nanowires Embedded in Colorless-Polyimide for a Fully Foldable Transparent Touch Sensor

Su Bin Choi, Sun Ok Kim, Jeong Kyun Oh, Cheul-Ro Lee, and Jong-Woong Kim

Chonbuk Nat'l Univ., Korea

TuP62

Interface Engineered Contact Resistance in Organic Field-Effect Transistors

Hyeok Kim¹, Ji Hwan Park², Jae-Bum Jeong³, and Jin-Hyuk Bae²

¹Gyeongsang Nat'l Univ., Korea, ²Kyungpook Nat'l Univ., Korea, ³KITECH, Korea

TuP63

Mesoporous Bulk Cu₂SnSe₃ Thermoelectric Compound with Reduced Thermal Conductivity, Synthesized by Top-Down Approach

Muhammad Siyar, Jun-Young Cho, and Chan park

Seoul Nat'l Univ., Korea

TuP64

Rapid Deposition And Thermoelectric Properties of Ytterbium Boride Thin-Films using a CVD Process

Gabin Guélou¹, Maya Martirosyan², Kazuo Ogata¹, Takashi Aizawa¹, and Takao Mori¹

¹NIMS, Japan, ²Harvey Mudd College, USA

TuP65

Effect of Transition Metals on the Thermoelectric Properties of SmB₆ Single Crystals

Philipp Sauerschnig^{1,2}, Jean-Baptiste Vaney¹, Takaho Tanaka¹, Toetsu Shishido³, Kunio Yubuta³, Akira Yoshikawa³, Alif Sussardi^{1,2}, Kantaro Tsuchiya^{1,2}, and Takao Mori^{1,2}

¹NIMS, Japan, ²Univ. of Tsukuba, Japan, ³Tohoku Univ., Japan

TuP66

Thermal Conductivity of a Layered Boride Compound PrRh_{4.8}B₂ by using Picosecond Thermoreflectance Method

Yohei Kakefuda¹, Kunio Yubuta², Toetsu Shishido², Akira Yoshikawa², Shigeru Okada³, Hiraku Ogino⁴, Naoyuki Kawamoto¹, Tetsuya Baba¹, and Takao Mori¹

¹NIMS, Japan, ²Tohoku Univ., Japan, ³Kokushikan Univ., Japan, ⁴AIST, Japan

TuP67

Chemically Synthesized Cu₂Te Incorporated Bi-Sb-Te Materials for Low Temperature Energy Harvesting

Jaemin Song, Jeong Seop Yoon, Won-Seon Seo, Soonil Lee, Dongkyu Roh, and Weon Ho Shin

KICET, Korea



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TuP68

The Thermoelectric Transport Properties of The Textured Polycrystalline SnSe by Sintering Pressure

Jun-Young Cho¹, Muhammad Siyar¹, Jonghun Ryu¹, Sang-Gu Ji¹, Woochan Jin¹, Sung-Hwan Bae², and Chan Park¹

¹Seoul Nat'l Univ., Korea, ²Kyungnam Univ., Korea

TuP69

Thermoelectric Characteristics of Si/silicide Heterostructure Layers Fabricated by RF Magnetron Sputtering and RTA Techniques

Jae Kwon Ha, Buil Jeon, and Giwan Yoon
KAIST, Korea

TuP70

NMR Study on Dynamical Property of Tetrahedrite Cu₁₂Sb₄S₁₃

Takashi Matsui¹, Haruki Matsuno¹, Hisashi Kotegawa¹, Hideki Tou¹, Koichiro Suekuni², Hiromi Tanaka³, and Toshiro

¹Kobe Univ., Japan, ²Kyushu Univ., Japan, ³Hiroshima Univ., Japan

TuP71

Comparative Investigation on the Removal of Congo red from Wastewater by using Amine-functionalized and Hydroxyl-functionalized Magnesium Ferrite Nanoparticles

Chattharika Aoopngan¹, Jeeranan Nonkumwong¹, Supon Ananta², Asst. Prof. Dr. Supree Pinitsoontorn³, and Asst. Prof. Dr. Laongnuan Srisombat¹

¹Chiang Mai Univ., Thailand, ²Chiang Mai Univ., Thailand, ³Khon Kaen Univ., Thailand

TuP72

Enhanced Thermoelectric Performance in Bi_{0.5}Sb_{1.5}Te_{3.0} Bulk with Micro/Nanostructure

Dae-Hwan Jang, Chul-Han Song, Jae-Kyo Yang, and Man-Sik Kong
IAE, Korea

TuP73

Nanostructuring via Nanopores for Enhanced Thermoelectric Properties

Takao Mori and Atta Ullah Khan
NIMS, Japan

TuP74

Millimeter-Scale Multilayer Actuator for Synthetic Skin Applications

Melodie Chen-Glasser¹, Seongwoo Cho¹, Hoon Kim¹, Hye Jin Kim², Kang-Ho Park², and Seungbum Hong¹

¹KAIST, Korea, ²ETRI, Korea



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TuP75

Nanoimprinted Lithography-Assisted Sol-GelBaTiO₃ Nanopillars Formation and Its Application for Piezoelectric Nanogenerators

Sung-Ho Shin¹, Min Hyung Lee², and Junggyo Nah¹
¹Chungnam Nat'l Univ., Korea, ²Kyung Hee Univ., Korea

TuP76

Flexible Aerosol-Deposited PZT Energy Harvester for Self-Powered Sensor Node System

Seongkwang Hong, Jae Hyun Han, Hee Seung Wang, and Keon Jae Lee
KAIST, Korea

TuP77

Fabrication And Characterization of AlN on Cubic Silicon Carbide by Aerosol Deposition

Seong-Ji Min¹, Michael A. Schweitz¹, Ji-Ho Seo¹, Kyoung-Sook Moon², and Sang-Mo Koo¹
¹Kwangwoon Univ., Korea, ²Gachon Univ., Korea

TuP78

Properties of Al₂O₃ MIS Structures on SiC

Jae-In An, Michael A. Schweitz, Young-Jae Lee, and Sang-Mo Koo
Kwangwoon Univ., Korea

TuP79

Lamellae Alignment of Ferroelectric Polymers on a Patterned Substrate

Seongwoo Cho¹, Bumsoo Kim¹, Melodie Glasser¹, Seokwoo Jeon¹, and Seungbum Hong¹
KAIST, Korea

TuP80

Dependence of Impurities on Magnetic and Structural Properties in AlFe₂B₂ Magnetocaloric Materials

Chunghee Nam¹, J. W. Lee¹, M.S. Song², K.K. Cho², and B.K. Cho²
¹Hannam Univ., Korea, ²GIST, Korea

TuP81

Imaging of Ferroelectric Multi Domains in Hf_{0.5}Zr_{0.5}O₂ Thin Films using Piezoresponse for Cemicroscopy

Seok-jung Yun¹, Myungsoo Seo¹, Hoon Kim¹, Seongwoo Cho¹, Minho Kang², Yang-kyu Choi¹, and Seungbum Hong¹
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TuP82

Sonochemical Preparation of Lanthanum Zirconium Oxide Dielectric Ink for Thin Film Capacitors

Kishor M.J Kumar and Jagannathan T.K
Nat'l Inst. of Tech., India

TuP83

Correlations between Electrical Parameters and Performances of Piezoelectric Thin Films Fabricated by RF Sputtering using Diverse Gas Conditions

Buil Jeon, Chongsei Yoon, and Giwan Yoon
KAIST, Korea

TuP84

Computational and Experimental Approaches for Particle Manipulation using the Surface Acoustic Wave in Combination with a Fluidic Channel

Junki Ba^ㄷ, Chanryeol Rhyou, Byungjun Kang, and Hyungsuk Lee
Yonsei Univ., Korea

TuP85

Fabrication, Structure and Dielectric Properties of Cu-Doped BiFeO₃ Thin Film

Tachgiss Jampreecha, Jessada khajonrit, Santi Maensiri, and Worawat Meevasana
Suranaree Univ., Thailand

TuP86

Transparent and Flexible Piezoelectric Nanogenerators based on Geometry-Controlled ZnO Nanorods on Graphene Electrodes

Hanbyeol Jang¹, Myungwoo Son¹, Mi-So Lee¹, Woong Lee², and Moon-Ho Ham¹
¹GIST, Korea, ²Changwon Nat'l Univ., Korea

TuP87

Admittance, Impedance, and Modulus Spectroscopy Study of ZnO-BiVO₄-Co₃O₄ Varistor

Youn-Woo Hong, Man-Jin Ha, Jong-Hoo Paik, Jeong-Ho Cho, Young-Hun Jeong, and Ji-Sun Yun
KICET, Korea

TuP88

Enhancement of Spin Seebeck Effect in Pt/YIG Embed Gold Nano Particles by Plasmonic Spin Generation Current Incorporated with Plasmonic Heating Effect

Phuoc Cao Van, Viet Dong Quoc, Srivathsava Surabhi, Rambabu Kuchi, and Jong-Ryul Jeong
Chungnam Nat'l Univ., Korea



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TuP89

Growth Kinetics, Piezoelectric Properties and Young's Moduli of Diphenylalanine Microtubes—Oxide Nanoparticles Composites

Andrei Kholkin^{1,2}, S. Vasilev², A. Nuraeva², V. Uzakov², T. Koryukova², E. Gunina², D. Chezganov², P. Zelenovskiy², and V. Shur²

¹Univ. of Aveiro, Portugal, ²Ural Federal Univ., Russia

TuP90

Fabrication and Characterization of Multi-Ferroic Fe-doped BaTiO₃ Thin Films Prepared by Co-Sputter Methods

Nae Hyung Jang¹, Byoung-Gyu Yun¹, Han-Sol Yoon¹, Jae-Hyeon Shim², and Nam-Hee Cho¹

¹Inha Univ., Korea, ²Dongshin Univ., Korea

TuP91

Fabrication and Analysis of Nonvolatile Memory Device of Multi Oxide Film using Low Temperature Fixed Indium, Tin Zincoxide Channel Layer

Donggi Shin, Taeyong Kim, Jujgsou Kim, Youngkuk Kim, Sunhwa Lee, and Junsin Yi
Sungkyunkwan Univ., Korea

TuP92

Flexible Transparent Conductor Fabrication with Improve Electrical Reliabilty using Indium-Tin-Oxide Nanoparicle and Silver Nanowire

Donggi Shin, Jungsou Kim, Taeyong Kim, Youngkuk Kim, Sunhwa lee, and Junsin Yi
Sungkyunkwan Univ., Korea

TuP93

Controlled-Atmosphere Sintering of KNbO₃

Trung Thanh Doan and John Gerard Fisher
Chonnam Nat'l Univ., Korea

TuP94

Hybrid Flexible Nanocomposite Energy Harvester based on Perovskite Nanostructures-Employed Piezopolymer

Dong Yeol Hyeon¹, Chang Kyu Jeong², and Kwi-II Park¹

¹Gyeongnam Nat'l Univ. of Sci. and Tech., Korea, ²Chonbuk Nat'l Univ., Korea

TuP95

Piezoelectric Polymers Materials - A Review

Navneet Dabra
Mata Sahib Kaur Girls College, India



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TuP96

Growth of $0.96(\text{K}_{0.48}\text{Na}_{0.52})(\text{Nb}_{0.95}\text{Sb}_{0.05})\text{O}_{3-0.04}\text{Bi}_{0.5}(\text{Na}_{0.82}\text{K}_{0.18})_{0.5}\text{ZrO}_3$ Lead-Free Piezoelectric Single Crystals by Solid State Single Crystal Growth

MENG MENG and John Fisher
Chonnam Nat'l Univ., Korea

TuP97

Wide-Temperature AC Behavior of KNN-based Lead-Free Piezoelectric Single Crystals Grown by Solid State Crystal Growth

Uwiragiye Eugenie, Fisher John, Jong-sook Lee, Pham Thuy Linh, Muhammad Umer Farooq, and Nguyen Dang Than
Chonnam Nat'l Univ., Korea

TuP98

Enhanced One-Dimensional Lead-Free Piezoelectric Materials for Energyharvesting

Mohammad Bagher Ghasemian¹, Zahra Karbalaee Mirza Shahrabaki², and Danyang Wang¹
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TuP99

Study of Transparent Glass-Ceramics for Fresnoite Crystal Phase

Junki Min and Seunggu Kang
Kyonggi Univ., Korea

TuP100

A Novel Approach of Infrared Transparent Er:Y₂O₃ -MgO Nanocomposite for Eye-Safe Laser Ceramics

Ho Jin Ma, Wook Ki Jung, and Do Kyung Kim
KAIST, Korea

TuP101

The Air Void Tunnel Formation Incorporating Sacrificial Layer on Patterned Sapphire Substrate for a Chemical Lift-Off Process

Hyun-A Ko, Woo Seop Jeong, Seunghee Cho, Doo Won Lee, Min Joo Ahn, Kyu-Yeon Shim, and Dongin Byun
Korea Univ., Korea

TuP102

Improvement of Out-Coupling Efficiency in Organic Emitting Diodes using TiO₂ Micro-Nano Structures

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Growth and Characterization of AlGaIn-based Deep Ultraviolet Light Emitting Diodes Grown by High-Temperature MOCVD

Taeyoung Kim, Byeongchan So, Joohyoung Lee, Junchae Lee, Heejin Shin, and Okhyun Nam
Korea Polytechnic Univ., Korea

TuP104

Exploring the Electron Transport Layer for Quantum Dot-Light-Emitting Diodes using Nanoparticles and Dielectric Layer

Jae Hyun Han^{1,2}, Shulgi Park^{1,2}, Ho Seong Jang², Byeong-Kwon Ju¹, and So-Hye Cho²
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TuP105

Growth of GaN Template with Air-Tunnel Suppressed Growth by SOG

Seunghee Cho, Woo Seop Jeong, Hyun-A Ko, Doo-Won Lee, Min-Joo Ahn, Kyu-Yeon Shim, and Dongjin Byun
Korea Univ., Korea

TuP106

A Graphene Photodetector with Bandgap Opening using Gate Control

Jae hyeon In^{1,2}, Hyun Su Ju², Jeong Sang Lee², Byeong Kwon Ju¹, and Jeon Kook Lee²
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TuP107

Surface Analysis of GaN Film on Sapphire Crystal Planes

Doo Won Lee, Woo Seop Jeong, Seunghee Cho, Hyun-A Ko, Min Joo Ahn, Kyu-Yeon Shim, and Dongjin Byun
Korea Univ., Korea

TuP108

Selective Area Growth of GaN with Air Void Tunnel on Patterned Sapphire Substrate by using Sacrificial Layer

Min Joo Ahn, Woo Seop Jeong, Seunghee Cho, Hyun-A Ko, Doo Won Lee, Kyu-Yeon Shim, Bumjoon Kim, and Dongjin Byun
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TuP109

Synthesis of PbS Nanoparticles by the Mechano-Chemical Method and Fabrication of PbSe Thin Films by Selenization

Hak-Young Ahn^{1,2}, Jungdong Kim³, Won Jun Choi¹, Eunsoon Oh³, Byeong-Kwon Ju², and So-Hye Cho^{1,4}
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Influence of Sintering Conditions on Optical And Mechanical Properties of MgAl₂O₄ Spinel Fabricated by Spark Plasma Sintering

Seok-Young Ko, Kisu Lee, Doo Hyun Choi, Seok-Min Yong, and Dong-Ik Cheong
Agency for Defense Development, Korea

TuP111

Roll-Off Properties of Organic Light Emitting Device by Doping Concentration of 4CzIPN Green Thermal Assistance Delayed Fluorescent Dopant

Hye Rim Kim, Sang-Min Lee, Do Yeob Kim, and Chan-Jae Lee
KETI, Korea

TuP112

Characteristics of Crosslinkable PEDOT Composite with Vanadium Pentoxide for Hole Injection Material

Yeseul Song, Hye Rim Kim, Young-Min Kim, and Chan-Jae Lee
KETI, Korea

TuP113

Performance Enhancement of α -Fe₂O₃ as Photoelectrode by Doping it with Zn in a Simple Way

Abu Bakar Md. Ismail¹, Arifuzzaman Rajib², and Arman Ibn Shahjahann³
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TuP114

Characterization of Yttria Stabilized Zirconia Colloidal Dispersion by Precursor Type for Optical Organic-Inorganic Hybrid Coating Application

Hee-Seon Lee and Hyung Mi Lim
KICET, Korea

TuP115

Synthesis of VO₂-PMMA Composite Powder for Thermochromic Films

Sang-Seop Shin, Jae-Hoon Lee, and Sung-Hwan Bae
Kyungnam Univ., Korea

TuP116

Synthesis of Silver Sulfide Nanoparticles and their Photodetector Applications

Myung Hyun Kang, Sung Ho Kim, Seunghun Chang, Jieun Lim, Hyunju Chang, Sung Myung, and Joung Kyu Park
KRICT, Korea



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Extraordinary Enhancement of Faraday Rotation Angle in Pt/Bi-YIG Thin Film Prepared by Metal Organic Decomposition Method

Viet Dongquoc, Rambabu Kuchi, Phuoc Cao Van, Srivathsava Surabhi, and Jong-Ryul Jeong
Chungnam Nat'l Univ., Korea

TuP118

Properties of Dy and Eu Co-Doped La₂MoO₆ Thin Films for White Light Sources

Johngyeon Shin and Shinho Cho
Silla Univ., Korea

TuP119

Preparation and Evaluation of Ethylene Absorber from Zeolite A/KMnO₄ Composite for Monitoring of Silk Banana (*Musa Sapientum* L.) Harvesting

Saral Yimmongkol, Chiravoot Pechyen, and Supakorn Boonyuen
Thammasat Univ., Thailand

TuP120

Antibacterial Activity of Cu-BTC/Chitosan/PVA Composite Fibers

Kamonthip Singbumrung, Kanchana Motina, Penwisa Pisitsak, and Thitirat Inprasit
Thammasat Univ., Thailand

TuP121

Fabrication of the High Thermal Conducting Hybrid Materials using Graphene Coated Aluminum Particles

Jin Uk Hwang^{1,2}, Hwan Soo Dow¹, Hye Young Kim^{1,2}, Sang Yong Nam², and Woo Sik Kim¹
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TuP122

Synthesis of Thermally Stable Reactive Polyurethane And Its Physical Effects in Epoxy Compositions

Choong-Sun Lim¹, Jin Hong Kim¹, Dong-Gu Lee¹, Taehee Kim¹, Bongkuk Seo¹, and In Woo Cheong²
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TuP123

Improvement in Thermal Stability And Mechanical Property of Carbon Fiber Surface Coated Boron Nitride by Structural Substitution using Graphene

Hye Young Kim^{1,2}, Jinuk Hwang^{1,2}, Hwan Soo Dow², Woo Sik Kim², Sook Young Moon³, and Cheol Jin Kim¹
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Functionalization of the Amino-Functionalized Magnetite Nanoparticle Fe₃O₄ with Chelating Polymer

Jin Soon Han¹, Jae Uk Hur¹, Dong Ho Chae¹, Hye-Yeong Park², Gye Seok An^{1,3}, Yeon-Gil Jung², and Sung-Churl Choi¹

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TuP125

Facile Synthesis of Fe₃O₄@C Nanoparticles And Its Dispersion Properties in Aqueous Solvent

Dong Ho Chae¹, Jin Soon Han¹, Jae Rok Shin¹, Hyun-Hee Choi², Gye Seok An^{1,3}, Yeon-Gil Jung², and Sung-Churl Choi¹

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TuP126

Structural And Electrical Properties of Solution Processed Al-Doped Zinc Tin Oxide (ZTO) Thin-Film Transistors on Silicon Carbide (SiC)Substrates

Seulki Cho¹, Changkyu Hwang¹, Suyeol Jang¹, Ji-Ho Seo², Michael A. Schweitz², Kyoung-Sook Moon³, and Sang-Mo Koo²

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TuP127

Influence of Thermal Annealing on the Properties of GZO/n-Type SiC Diodes

Young Jae Kim, Michael A. Schweitz, Jinho Jang, and Sang-Mo Koo
Kwangwoon Univ., Korea

TuP128

Tunable And Cyclable Self-Assembly of High-χ Block Copolymers

Young joong Choi, Tae Wan Park, Hyunsung Jung, Young Joon Yoon, and Woon Ik Park
KICET, Korea

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ZnO /Au Nanocomposite on Glass Substrates with Tunable Au Content for Photocatalytic Application

Vivi Fauzia¹, Annisa Citra Dwicahya¹, Tio Mahardika¹, Liszulfah Roza², Yuliati Herbani³, and Akrajas Ali Umar⁴

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Thermal and Electrical Properties of Silicon Nitride-Substrates

Hwan Soo Dow¹, Woo Sik Kim¹, and Jung Woo Lee²

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Thermally Induced Self-Aligned Janus Nanoparticles from a Hierarchically 3D-Stacked Nanostructure

Tae Wan Park, Young Joong Choi, Hyunsung Jung, Hyo-Soon Shin, and Woon Ik Park
KICET, Korea

TuP132

Formation of Carbon Nanowalls on Carbon Materials with Gas Plasma in Micro-Wave Oven

Yumito Aoyagi¹, Kosuke Fujiwaraf¹, Tomoko Ohkubo¹, Masato Nishikawa², Horibe Yoichi³, Yuta Nishina¹, Masakazu Mori², Jun Kano^{1,4}, and Naoshi Ikeda¹
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TuP133

Novel Carbon Fiber Bulk Formed with Fiber Aerosol Deposition (FAD) Method

Masato Nishikawa¹, Masakazu Mori¹, Naoshi Ikeda², Yuta Nishina², and Jun Kano²
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TuP134

Effects of Detergents for Waste Abalone-Shells

Youn Seoung Lee, Jeong Ho Park, and Sang-Mo Shin
Hanbat Nat'l Univ., Korea

TuP135

Nanoporous Cobalt Oxide with Oxygen Vacancy for Efficient Photocatalytic Water Oxidation In a Ru(bpy)₃/Na₂S₂O₈ System

Sangjun Kim¹, Jeungku Kang¹, Il Woo Ock¹, Heebin Lee¹, and Hyungmo Jeong²
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TuP136

Nitrogen-Doped Cobalt Phosphate Co-Catalyst for Efficient Photoelectrochemical Water Oxidation

Heebin Lee, Sangjun Kim, Keonhan Kim, and Jeungku Kang
KAIST, Korea

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Quadruple Metals-based Layered Structure as the Photocatalyst for Conversion of Carbon Dioxide into a Value-Added Carbon Monoxide with High Selectivity and Efficiency

Keon-Han Kim and Jeung Ku Kang
KAIST, Korea



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Electromagnetic Properties of FePt/MWCNT Composites for Microwave Absorption in the X-Band

Jung Hyo Park, Jaeho Choi, Kisu Lee, Jinwoo Park, and Seungsu Baek
Agency for Defense Development, Korea

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Improvement of Interfacial Adhesion of Photo-Curable Ceramic Resins with Different Silane Coupling Agents for Stereo Lithography 3D Printing

Se Yeon Song^{1,2}, Jung Woo Lee¹, and Ji Sun Yun²
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TuP140

Improvement of Catalyst Performance from Porous NiCrAl Foam Support in SMR Process for Hydrogen Production

Dae-Hwan Jang^{1,2}, Chul-Han Song¹, Woo-Chul Jeong¹, Sang-Hwan Park¹, Yong-Ho Choa², and Man-Sik Kong¹
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Surface Plasmon Induced Near Infrared Photodetection in Silicon Nanomembranes

Ruobing Pan, Qinglei Guo, Zhenghua An, and Yongfeng Mei
Fudan Univ., China

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High-Temperature Oxidation of Hot-Dip Aluminized P23 Ferritic Steels

Dong Bok Lee¹, Junhee Hahn², and Muhammad Ali Abro³
¹Sungkyunkwan Univ., Korea, ²KRISS, Korea, ³Mehran Univ. of Engineering, Pakistan

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Morphology Change of Metal Nanowires into Particles via Laser-Driven Rayleigh Instability and Their Tunable Plasmonic Behavior

Harim Oh, Jeeyoung Lee, Minseok Seo, Yoonseok Oh, Jaeyong Kim, Seonwoo Lee, and MyeongKyu Lee
Yonsei Univ., Korea

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Few-Layered Metallic 1T-MoS₂/TiO₂ with Exposed (001) Facets for Enhanced Photocatalytic Activities

Jeong Ho Ryu and Jung-II Lee
Korea Nat'l Univ. of Transportation, Korea



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Transparence of Diopside Composites by Glass-Ceramic Process upon Heat Treatment Schedule

Byeongguk Kang and Seunggu Kang
Kyonggi Univ., Korea

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Nanoglass-Ceramics with a High Thermal Conductivity in ZnO-Al₂O₃-SiO₂ System

Subin Kyeong and Seunggu Kang
Kyonggi Univ., Korea

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Characterization of Functional Film Coated on Glass Substrate for PV Module according to the Annealing Ambient

Sejin Jung and Wonseok Choi
Hanbat Nat'l Univ., Korea

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Observation of Carrier Kinetics and Color Change of Tungsten Oxide by UV Irradiation

Young-Ahn Lee¹, Seung-Ik Han¹, Hanju Rhee², and Hyungtak Seo¹
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Characterization of Functional Film Coated on the Glass Substrate for PV Module according to the Thickness

Seung-cheol Yoo and Wonseok Choi
Hanbat Nat'l Univ., Korea

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Fabrication of Chemically Coupled Silver Nanocrystal based Plasmonic Metamaterials

Hye-Won Yun¹, Min-Soo Kang¹, Soo-Jung Kim¹, and Mi-Hyun Kim²
¹Korea Univ., Korea, ²ETRI, Korea

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The Transition Metal Doped and Heterojunction α -NiMoO₄ Photocatalyst for Dyes/Drug Degradation, Mechanism and Pathways

Schindra Kumar Ray and Soo Wahn Lee
Sun Moon Univ., Korea



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The Effect of HiPIMS Conditions on Physical Properties of Carbon Thin Films

Kyu-Yeon Shim, Woo Seop Jeong, Seunghee Cho, Hyun-A Ko, Doo Won Lee, Min Joo Ahn, and Dongjin Byun
Korea Univ., Korea

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Fabrication of Ultra-Thin Silicon Strain Gauge with SOI Wafer for Piezo-Resistive Pressure Sensor

Jun-Hwan Choi and Jung Sik Kim
Univ. of Seoul, Korea

TuP154

Synthesis of N-doped TiO₂ Nanoparticles by Bulk Direct Plasma Enhanced Electrolysis and Photocatalytic Property in Visible Region

Tae Hyung Kim, Duk-Hee Lee, Jae-Ryang Park, Kyung-Soo Park, and Chan-Gi Lee
IAE, Korea

TuP155

Plasma Resistance of CaO-Al₂O₃-SiO₂ (CAS) Glass under Fluorocarbon Plasma with Ar⁺

Hyein Na¹, Je Won Park¹, Sung-Churl Choi², and Hyeong-jun Kim¹
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Investigation on Ceramic/Polymer Composites by Freeze Casting for Dental Crown

Dong Gyu Kim, Wook Ki Jung, and Do Kyung Kim
KAIST, Korea

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First Principles Study of Screening an Efficient Metallic Adsorbent for Adsorptive Removal of Iodine Gas under Humid Conditions

Hoje Chun, Joonhee Kang, and Byungchan Han
Yonsei Univ., Korea

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Fabrication of Hollow Core-Shell according to Surface Etching Conditions of TiO₂@SiO₂

Ri Yu, Gye Seok An, and YooJin Kim
KICET, Korea



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Promoted Electro-Catalytic Degradation of Phenol Mediated by S-Modified Fe²⁺ Species Inherent to Fe Sulfides via Heterogeneous Catalysis

Yun Jeong Choe¹, Ji Young Byun^{1,2}, Sang Hoon Kim^{1,2}, and Jongsik Kim¹
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TuP160

Tailoring Surface Properties of Metal Vanadate Catalysts for Selective Catalytic NO_x Reduction by NH₃

Somin Lee^{1,2}, Dong Wook Kwon¹, Heon Phil Ha^{1,3}, and Jongsik Kim¹
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TuP161

Design for Dual Hierarchical Porous NiO/TiO₂ Composite Hybrid Nanostructures for Highly Improved Electrochromic Performance

Yu Jung-Hoon, Yang Hyeon, Jung Rak Hyun, Lee Ji Won, Kim Dong In, Hwang Ki-Hwan, Seo Hyeon Jin, Nam Sang-Hun, and Boo Jin-Hyo
Sungkyunkwan Univ., Korea

TuP162

Fabrication of New Concept Antistatic Photomask by Applying Indium-Tin-Oxide And UV-Assisted Partial Strip Method

Jangsik In^{1,2}, Byeongkyou Jin¹, Daeyeol Yang¹, Chunkil Park², Ahyun Kwon¹, Jungchul Park¹, and Daeyong Jeong²
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One-Pot Wet Chemical Preparation And Characterization of Fluorine-Containing TiO₂ Nanoparticles with Enhanced Photocatalytic Activities

Duk-Hee Lee, Jae-Ryang Park, Hyun-Woo Shim, Chan-Gi Lee, and Kyung-Soo Park
IAE, Korea

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Adsorption Behavior of SnO₂ Particles by Citrate Bonds of Fe₃O₄ Nanoparticles

Jae UK Hur¹, Jae Rok Shin¹, Dong Ho Chae¹, Hye-Ju Lee², Gye Seok An^{1,3}, Yeon-Gil Jung², and Sung-Churl Choi¹
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TuP165

Cost Effective Fabrication of Flexible and Mechanically Stable High Transparent Superamphiphobic Film

Bichitra Nanda Sahoo¹, Jungmok Seo², and Taeyoon Lee¹
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Preparation of ZrB₂ Slurry with High Solid Loading and High Dispersity through Surface Treatment with PEI

Jae Rok Shin¹, Jin Soon Han¹, Jae Uk Hur¹, Bong-Gu Kim², Gye Seok An^{1,3}, Yeon-Gil Jung² and Sung-Churl Choi¹

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Limited Electroless Ni-P Plating using PDMS Prcess on AAO Template

Hyunjun Kwon, Jung-Ho Park, Jung-Woo Lee, Jong-Hwan Park, Sun-Woo Kim, Young-II Na, Ho-Jun Choi, Se-Hee

Shin, Dae-Seok Seo, Han-Young Jung, and Su-Jeong Suh

Sunkyunkwan Univ, Korea

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Superhydrophilic Aluminum Surface Obtained by Ion Beam Irradiation

Jun Kue Park, Sunmog Yeo, JaeSang Lee, ChanYoung Lee, and Young Seok Hwang
KAERI, Korea

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Surface Plasmon Resonance Behavior of Nano-Textured Stainless Steel

Seo Minseok, Lee Myeongkyu, Lee Jeeyoung, Oh Yoonseok, Oh Harim, Lee Seonwoo, and Kim Jaeyong

Yonsei Univ., Korea

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Color Tunable Upconversion Nanophosphors under Various Excitation Wavelengths

A-Ra Hong^{1,2}, Kwangyeol Lee², and Ho Seong Jang¹

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The Effect of Heat Treatment on Surface of Multi-Layer Graphene Coated Nanoparticles

Jung Woo Lee¹, Sun Woo Kim¹, Jong Hwan Park¹, Se Hee Shin¹, Ho Jun Choi¹, Hyun Jun Kwon², Han Young Jeong³, Dae Seok Suh⁴, Young Il Na¹, Young Il Song¹, and Su Jeong Suh¹

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TuP172

Tuning the Electrical and Magnetic Properties of Sputter Grown Epitaxial BiFeO₃- CoFe₂O₄ Nanocomposite Thin Films

Tae Cheol Kim¹, Seung Han Lee¹, Hyun Kyu Jung¹, Jun Woo Choi², and Dong Hun Kim¹

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Microstructure and Properties of Electroless Ni-P-SiC Nanocomposite Coatings

Hong Wang, Yu-bao Cao, Da-wei Cui, and Wen-qing Wei
Weifang Univ., China

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First-Principles based Computational Study on Nucleation and Growth Mechanisms of Uranium on Molybdenum Surface Solvated in an Eutectic LiCl-KCl Molten Salt

Choah Kwon, Joonhee Kang, and Byungchan Han
Yonsei Univ., Korea

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Surface Plasmon Resonance of Gold Nanoparticles by Ion Coater

Hyun Kyu Jung, Seung Han Lee, Tae Cheol Kim, and Dong Hun Kim
Myongji Univ., Korea

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The Study of Zn-Al : Layered Double Hydroxide(LDH) Synthesis using Al(10%) Doped ZnO Thin Films by Facial Target Sputtering(FTS)

Sang-Hui Kang, Ji-Ho Eom, and Soon-Gil Yoon
Chungnam Nat'l Univ., Korea

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Calcination Temperature of Nd-Fe-B-O Fibers to Keep Fibrous Morphology

Eun Ju Jeon^{1,2}, Bum Sung Kim^{1,3}, Yong-Ho Choa², and Bin Le¹
¹KITECH, Korea, ²Hanyang Univ., Korea, ³Univ. of Sci. and Tech., Korea

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A Study on High Purity Tungsten Nanoparticles Preparation through RF Induction Thermal Plasma and Hydrogen Reduction Process

Dongyoon Shin, Duk-Hee Lee, Jae-Ryang Park, and Kyung-Soo Park
IAE, Korea

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Structure, Magnetic, and Ferroelectric Properties of BiFeO₃-CoFe₂O₄ Nanocomposites on Conductive Oxide Thin Films

Seung Han Lee, Tae Cheol Kim, Hyun Kyu Jung, and Dong Hun Kim
Myongji Univ, Korea



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Pyrrolic-Structure Enriched Nitrogen-Doped CNTs/Graphene Oxide Nanocomposites for Heck Coupling and Chemoselective Hydrogenation of Nitroarenes

Ayomide Labulo, Bernard Omondi, and Vincent Nyamori
Univ. of KwaZulu-Nata, South Africa

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3Y-TZP Suspension Characteristics according to Powder Size and Dispersants Molecular Weight

Soo-Hyun Kim, Jae-Hoon Lee, Pestaria Sinaga, and Sung-Hwan Bae
Kyungnam Univ., Korea

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Effect of Surface Microstructure on the Amphiphobicity for Polymer Substrate

Wenhui Yao, Young-Wook Cho, Young-Jun Kang, and Young-Rae Cho
Pusan Nat'l Univ., Korea

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Robust Flexible Copper Plating on Plasma-based Hetero-Nanostructures

Sang Jin Park^{1,2}, Jun Hyun Han², and Myoung-Woon Moon¹
¹KIST, Korea, ²Chungnam Nat'l Univ., Korea

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Surface Functionalization of 3D Printable Wood-Plastic Composites by Oxygen Plasma

Seohyun Cho^{1,2}, O-Chang Kwon^{1,2}, Seok Chung², and Myoung-Woon Moon¹
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Air Bubble-Assisted Oil Cleaning Behavior on the Hydrophilic Porous Fabric under Dry State

Minsung Kim^{1,2}, Tae-Jun Ko³, Seong-Jin Kim⁴, Young-A Lee⁴, Kyu-Hwan Oh¹, and Myoung-Woon Moon⁴
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TiO₂ Encapsulated AIOOH Hetero-nanostructures with Anti-oil Fouling Nature for Oil-Water Separation

Sun Mi Yoon^{1,2}, Hyebin Lee¹, Young Cheol Park¹, Sahn Nahm², and Myoung-Woon Moon¹
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Synthesis of Powders and Thin Films of Bi_2O_3 and their Application as CO_2 Sorbents and as Photocatalysts in Self-Cleaning Applications

Edith Luévano-Hipólito and Leticia M. Torres-Martínez
Universidad Autónoma de Nuevo León, Mexico

TuP188

The Transition Metal Doped and Heterojunction $\alpha\text{-NiMoO}_4$ Photocatalyst for Dyes/Drug Degradation, Mechanism and Pathways

Schindra Kumar Ray and Soo Wahn Lee
Sun Moon Univ., Korea

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Synthesis and Characterization of Hybrid ta-C/CrZrN Coatings

Sangyul Lee¹, HoeKun Kim¹, InGyu Lee¹, JongKuk Kim², and JunHee Hahn³
¹Korea Aerospace Univ., Korea, ²KIMS, Korea, ³KRISS, Korea

TuP190

Wave-Tunable Lattice Equivalents toward Micro- and Nanomanipulation

Hyeohn Kim¹, Taehoon Kim¹, Dohun Kim², and Wooyoung Shim¹
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TuP191

Tungsten Carbide Film Suitable for Adhesion Improvement of Hydrogen-Free DLC Film

Tsuyoshi Tanimoto¹, Ryo Isono¹, Yuya Sugie¹, Toru Harigai¹, Yoshiyuki Suda¹, Hirofumi Takikawa¹, Masao Kamiya², Satoru Kaneko³, Shinsuke Kunitsugu⁴, and Makoto Taki⁵
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Wettability and Electrical Conductivity of Nanoporous Carbon Film by Selective Etching Method

Shuyuan Wang, Peng Guo, and Aiyang Wang
CAS, China

TuP193

Properties of Carbon Amino Silica Black Mortar using Fly Ash

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TuP194

Chirality Selective Growth of Single Walled Carbon Nanotubes by Floating Catalyst Chemical Vapor Deposition (FC-CVD)

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TuP195

Role of Sulfur Contents on the Catalyst for Single Walled Carbon Nanotube Growth in Chemical Vapor Deposition

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TuP196

The Study of Coating Tungsten Carbide Particle with Co by Electroless Plating

Cheng-chuan Wang, Chia-Ying Yen, and An-Pang Chen
Industrial Tech. Research Inst., Taiwan

TuP197

Characterization of Zinc Titanate Nanoparticles Synthesized by Sol-Gel

Kyung Nam Kim and Nalumaga Hellen
Kangwon Nat'l Univ., Korea

TuP198

Effect of Oxy-Salt Additives on 1-Dcrystal Growth of Rutile TiO₂ in Molten Salt

Anteneh Maregn Beyene, Changyeon Baek, Wook Ki Jung, and Do Kyung Kim
KAIST, Korea

TuP199

The Effect of Hydrothermal Condition in the Phase and Morphology of YSZ Nanopowder

Jae-Hoon Lee, Sang-Seop Shin, Yeun-Geon Sung, Seong-Koo Yang, and Sung-Hwan Bae
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TuP200

Fabrication of TaC/SiC Coatings by Chemical Vapor Deposition on C/C Composite

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TuP201

Effect of In₂O₃ Addition on Nano-Sized WO₃ Gas Sensor Property

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TuP202

Adhesion Improvement of Polymer Films by Surface Modification using UV Irradiation for Cu Electroless Plating

Changmyeon Lee^{1,2}, Hongkee Lee¹, Hideo Honma², Joo-Hyong Noh², and Jun-mi Jeon¹
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TuP203

Synthesis of Commercial Cosmetic Grade TiO₂-SiO₂ Core-Shell Powder from Mechanically Milled TiO₂ Nanopowder

Basudev Swain, Jae Ryang Park, Seyul Kim, Jin-Ho Yoon, Kyung Soo Park, and Chan-Gi Lee
IAE, Korea

TuP204

Characteristics of 2-Step Perovskite Solar Cell with Sputter and CVD

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TuP205

Continuous and Low Temperature Mp-TiO₂ Process for Highly Efficient Flexible Perovskite Solar Cells

Byoeng Jo Kim and Hyun Suk Jung
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TuP206

Effect of TiO₂ Particle Size and Layer Thickness on Mesoscopic Perovskite Solar Cells

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TuP207

Composites of Two-Dimensional Zn-Al:LDH Nanosheets And Lead-Free MASnI₃ Perovskite for Flexible Energy Generator

Myoung-Hyun Lee, Swathi Ippili, and Soon-Gil Yoon
Chungnam Nat'l Univ., Korea



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Comparison of Electrical and Dielectric Responses of Methylammonium Lead Halides and Ferroelectric Perovskite Oxides

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TuP209

Comparison of Spin Coated and CVD Fabricated Lead Free Methylammonium Tin Halide Thin Films

Hae-Won Lee, S.V.N. Pammi, and Soon-Gil Yoon
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TuP210

Rapid Crystallization of Halide Films for Mass-Production of Perovskite Solar Cells

Kyungmun Yeom¹, Chan Su Moon^{1,2}, Jangwon Seo², and Jun Hong Noh^{1,2}

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TuP211

Effect on UV-Light Treatment for Improvement of Perovskite Solar Cells (PSCs)Efficiency

Sangmo Kim, Jeongseo Kim, Lee Haram, Seong Gwan Shin, Hyung Wook Choi, and Chung Wung Choi

Gachon Univ., Korea

TuP212

Characteristics of Titanium Dioxide Films with Various Crystal Structures Fabricated by Off-Axis Sputtering for Solar Cell Applications

Kim Sangmo, Dang Hai Truyen, Seong Gwan Shin, Hyung Wook Choi, and Chung Wung Bark
Gachon Univ., Korea

TuP213

Surface Plasmonic Resonance Enhanced Indium Tin Oxide (ITO) for Solar Cell by Fabricating Subnanostructure under Gold Nanoparticles with Nano Imprint Lithography

Bo Young Park^{1,2}, Keum Hwan Park¹, Byeong Kwon Ju², and Young Seok Kim¹

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TuP214

An Integrated Approach towards Highly-Efficient and Long-Term Stable Hybrid Perovskite Nanowires Solar Cells

Chih-Yu Chang
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The Influence of an Additive on the Perovskite Formation using a Shear Coating Process

Jihye Choe, Ji-Ho Song, Ji-Young Jeong, Choong-Heui Chung, and Ki-Ha Hong

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TuP216

Ni(B) Coated YSZ Powder by Neutral Electroless Plating

Sa Kyun Rha¹, Youn Seoung Lee¹, and Mi Jai Lee²

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TuP217

Ni Catalyst Modified by La_{0.67}Ce_{0.33}O_{1.67} on Carbon Support for Hydrogen Evolution Reaction in Alkali Media

Myeong Je Jang^{1,2}, Woo Sung Choi¹, Sung Mook Choi¹, and Kyu Hwan Lee^{1,2}

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TuP218

Synthesis and Characterization of MoS₂/CNF Electrocatalyst for Hydrogen Evolution Reaction

Jeong Hun Lee^{1,2}, Myeong Je Jang^{1,3}, Yoo Sei Park^{1,2}, Da Jung Park¹, Woo Sung Choi¹, Sung Mook Choi¹, Yang Do Kim², and Kyu Hwan Lee^{1,3}

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TuP219

NiO Nanowall Film Supported on Nickel Foam: An Efficient and Stable Oxygen Evolving Electrode

Pravin Babar and Jin Hyeok Kim

Chonnam Nat'l Univ., Korea

TuP220

First Principles Computational Screening of Highly Active Pyrites Catalysts for Hydrogen Evolution Reaction Through a Universal Relation with a Thermodynamic Variable

Joonhee Kang, Jeemin Hwang, and Byungchan Han

Yonsei Univ., Korea

TuP221

Metal-Supported Micro-Tubular Solid Oxide Fuel Cells Made by Aqueous Electrophoretic Deposition

Jyh-Shiarn Cherng and Leo Chen

Ming Chi Univ. of Tech., Taiwan



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Durability of Membrane Electrode Assemblies with Surface Patterned Membranes for PEMFC Applications

Gyu-Na Bae^{1,2}, Hye-Won Kim^{1,2}, Doo-Hwan Jung^{1,3}, Sang-Kyung Kim^{1,3}, Yong-Gun Shul², and Dong-Hyun Peck^{1,3}

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TuP223

Synthesis of (La_xSr_{1-x})FeO₃ (LSFO) from (La,Sr,Fe)-EDTA Solutions as An Air Electrode Catalyst for Metal-Air Secondary Batteries

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TuP224

Electrical Conductivity Relaxations of GDC: LSCF Composites for Oxygen Transport Membranes

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TuP225

Ag@Co₃O₄ Core-Shell Nanocrystals Synthesized for an Improved Oxygen Reduction Reaction for Fuel Cell Applications

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TuP226

Study of Catalyst Materials for Improving Carbon-Coking Resistant Ni-YSZ based on SOFC Anode

Je-lin Choi^{1,2}, Rak-Hyun Song^{1,2}, Tak-Hyoung Lim^{1,2}, Jong-eun Hong¹, and Seung-Bok Lee^{1,2}

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TuP227

Investigation of the Durability of BZY-NDC Composite Electrolytes Based-Solid Oxide Fuel Cell using Embedded

Atif Khan Niaz, Ho Seong Lee, and Hyung-Tae Lim

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TuP228

A Study on Demonstration Experiment for 40Nm³/hr Class Alkaline Water Electrolysis System

Seung-Yong Lee, Eun-Kyung Lee, Gun-Woo Oh, and Jung-Woon Lee

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Development of High Performance and Durable Anode-Supported Planar SOFC by a Tape Casting Method

¹Amjad Hussain, ¹Jong-Eun Hong, Beomsu Kwon^{1,2}, Rak-Hyun Song¹, Seung-Bok Lee¹, and Tak-Hyoung Lim^{1,2}

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TuP230

Analysis and Evaluation of Risk Assessment for Alkaline Water Electrolysis

Eun-Kyung Lee, Seung-Yong Lee, Gun-Woo Oh, and Jung-Woon Lee

Korea Gas Safety Corporation, Korea

TuP231

Analysis of Hazard Assessment for the Application of Polymer Electrolyte Fuel Cell to Unmanned Aircraft

Jun-Young Kang, Eun-Kyung Lee, Min-Woo Kim, Gun-Woo Oh, Jung-Woon Lee, and Seung-Kuk Lee

Korea Gas Safety Corporation, Korea

TuP232

High-Performance Nanofibrous LaCoO₃ Perovskite Cathode For Solid Oxide Fuel Cells Fabricated Via Chemically Assisted Electrodeposition

Saeed Ur Rehman, Rak-Hyun Song, Tak-Hyoung Lim, Seok-Joo Park, Jong-Eun Hong, Jong-Won Lee, and Seung-Bok Lee

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TuP233

Long-Term Stability Studies of Anode-Supported Flat-Tubular Solid Oxide Fuel Cells

Muhammad Zubair Khan^{1,2}, Rak-Hyun Song^{1,2}, Seung-Bok Lee^{1,2}, and Tak-Hyoung Lim^{1,2}

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TuP234

Safety Performance Evaluation for Wind-Water Electrolysis-Fuel Cell Hybrid System

Min-Woo Kim, Ji-Hye Kim, Eun-Kyung Lee, Gun-Woo Oh, Jung-Woon Lee, and Jong-Sam Moon

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TuP235

Development of a Porous Metal Anode-Support for a Solid Oxide Fuel Cell

Tae-Hun Kim, Rak-Hyun Song, Tak-Hyoung Lim, Seung-Bok Lee, and Jong-Eun Hong

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TuP236

Control of Microstructure and Stress for Continuous Casting of Silicon Ingot using Simulation Method

Jun-Kyu Lee, Jin-Seok Lee, Young-Soo Ahn, and Gi-Hwan Kang
KIER, Korea

TuP237

Understanding the Aging Effects of Precursor Solution Aging for Triple-Cation Lead Halide Perovskite

Passarut Boonmongkolras, Daehan Kim, and Byungha Shin
KAIST, Korea

TuP238

Largescale Fabrication of Perovskite Solar Cell via Shearing Printing

MinKyu Kim, Seongryul Pae, Hyeonseok Lee, Byungha Shin, and Steve Park
KAIST, Korea

TuP239

Preparation of Tin Sulfide Thin Films by Metal Organic Chemical Vapor Deposition using Sn(dmamp)₂

Ji Woon Choi¹, Young Kuk Lee¹, Seong Gu Kang², Gun Hwan Kim¹, Chan Wan Lee¹, and Taek-Mo Chung¹
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TuP240

Impact of Cu/Sb Ratio on the CuSbS₂ Solar Cells Fabricated by Hybrid Ink Method

Shahara Banu^{1,2} and Ara Cho^{1,2}
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TuP241

Effect of CdS Thickness and Its Optimization for Chemical Bath Deposited ZnO Transparent Electrodes based CIGS Thin Film Solar Cells

Jiseong Jang¹, Jun Su Lee¹, Jae Young Oh¹, Gahee Jeong¹, Inyoung Choi², Doh-Kwon Lee², Soomin Song³, Kihwan Kim³, Young-Joo Eo³, Jihye Gwak³, Jae Ho Yun³, and Choong-Heui Chung¹
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TuP242

Transparent Conducting ZnO Thin Films Prepared by Chemical Bath Deposition and Their Application to CIGS Solar Cells as Window Layers

Gahee Jeong¹, Jae Young Oh¹, Jae Woo Kim¹, Jun Su Lee¹, Jiseong Jang¹, Ki-Ha Hong¹, Inyoung Choi², Doh-Kwon Lee², Soomin Song³, Kihwan Kim³, Young-Joo Eo³, Jihye Gwak³, Jae Ho Yun³, and Choong-Heui Chung¹
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Enhanced Photovoltaic Properties using High-Performance Fluorine-Doped Tin Oxide Films as a Transparent Conducting Electrode

Bon-Ryul Koo, Dong-Yo Shin, and Hyo-Jin Ahn
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TuP244

Improvement in Dark Electrical Parameters of P3HT:PCBM Composite by Incorporation of Multilayer Graphene for Its Photovoltaic Application

Joginder Singh¹, Varun Singh Nirwal¹, Neetu Prasad^{1,2}, Koteswara Rao Peta¹, and P.K. Bhatnagar¹
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TuP245

Effect of Substrate Temperature on the Properties of In-Doped SnO₂ (ITO) Thin Films and their Application to Cu₂ZnSn(S, Se)₄ Thin Film Solar Cells

Jun Sung Jang and Jin Hyeok Kim
Chonnam Nat'l Univ., Korea

TuP246

Solution-Processed TiO₂/BiVO₄/SnO₂ Triple-Layer Photoanode with Enhanced Photoelectrochemical Water-Oxidation Performance

Sung Won Hwang¹, Jin Un Kim¹, Ji Hyun Baek², Jae Myeong Lee², Bit Na Kim¹, Hyun Suk Jung², and In Sun Cho¹
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TuP247

Study of Interlayer for Si Solar Cell with Copper Iodide Hole-Selective Layer

Ki-Seok Jeon^{1,2}, Hongsub Jee¹, Sangwoo Lim², Minjoon Park¹, and Chaehwan Jeong¹
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TuP248

Study for Al₂O₃ and Al₂O₃/Si_x Rear Surface Passivation of P-Type Silicon Perc Cell

Hongsub Jee, Kiseok Jeon, Minjoon Park, and Chaehwan Jeong
KITECH, Korea

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Structural Optimization of Al-Doped ZnO as Electron Transporting Layer

Jae Hyun Kim and Firoz Khan
DGIST, Korea



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A Study of Micro-Scale Spherical Silver Powder Synthesis with Hydroquinone as Reductant

Yi-Fu Chen
Specialty Alloy Development Section, Taiwan

TuP251

Nanoscale Detection of Surface Potential at the Grain Boundaries of Perovskite Solar Cells with Kelvin Probe Force Microscopy under Light Illumination

Hyunhwa Lee^{1,2}, Daehan Kim², Hyunsoo Lee¹, Byungha Shin², and Jeong Young Park^{1,2}
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TuP252

The Influence of Growth Pressure on SnS Thin Films Deposited by Vapor Transport Deposition

Dajeong Lee and Jaeyeong Heo
Chonnam Nat'l Univ., Korea

TuP253

The Influence of TCO Deposition Temperature on $\text{Cu}_2\text{ZnSn}(\text{Se,S})_4$ Thin Film Solar Cells

Hiji Jeong and Jaeyeong Heo
Chonnam Nat'l Univ., Korea

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Effects of Quenching Heat Treatments on the Morphological Properties of Bulk Heterojunction Organic Solar Cells

Benjamin Agyei-Tuffour^{1,2}, Deidre M. O'Carroll², Winston O. Soboyejo^{3,4}, Francis D. Agborli¹, Clarisa N. S. Darko¹, Emmanuel Nyankson¹, David Dodoo-Arhin¹, Egidius R. Rwenyagila⁵, Joseph Asare⁶, Christopher E. Petoukhoff², and Martiale G. Zebaze-Kana⁷
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TuP255

Technique for Catalytic Decomposition of Environmental Pollutants (Waste Water) under Ambient Condition

Md Kamal Hossain, Mohammad Moniruzzaman, and Badhan Saha
BCSIR, Bangladesh

TuP256

Fabrication and Photoelectrochemical Properties of ZnO-Based Photoelectrodes for Solar-Driven Water Splitting

Jong-Hyun Park, Hyojin Kim, and Dojin Kim
Chungnam Nat'l Univ., Korea



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Magnetic and Photocatalytic Response of Ag-doped ZnFeO Nano-Composites for Photocatalytic Degradation of Reactive Dyes in Aqueous Solution

Asif Mahmood
King Saud Univ., Saudi Arabia

TuP258

Atomic Layer Deposition based ZnSnO Buffer layer for CIGS Solar Cell With Enhanced Optical and Electrical Properties

Zeeshan Ur Rehman¹, Jihye Kim², Hyung Sang Park², and byungha Shin¹
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TuP259

Photoelectrochemical Properties and Solar Energy Application of Cu-Zn-Sn-S(CZTS) Semiconductor Thin Films using Co-Sputtering Method

Jheng-Kuan Lee¹, Kong-Wei Cheng^{1,2}, and Pei-Jung Wu¹
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TuP260

Mechanical Properties and in Vitro Test of Bioactive Glass Fabrics

Jewon Park¹, Hyein Na¹, Sung-Churl Choi², and Hyeong-Jun Kim¹
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TuP261

Simple and Rapid Colorimetric Aptasensor for Bisphenol a Detection

Eun-Hee Lee¹, Min Jung Kim², Sung Ku Lee³, Kyo Wook Hwang³, and Seung-Woo Lee³
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TuP262

First Principles Study on Hydrolysis of Phosphorus Trichloride and Oxychloride (PCl₃ And POCl₃) Catalyzed by Water Clusters

Hyunwook Jung, Joonhee Kang, Hoje Chun, and Byungchan Han
Yonsei Univ, Korea

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A Polydopamine Chemistry-based Surface Functionalization for Anti-Biofouling Coating of Medical Implants

Seunghoe Kim, Kyomin Chae, Yeontaek Lee, and Jungmok Seo
KIST, Korea



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Different Alignment between Skeletal and Smooth Muscle Cells on Coffee-Ring Patterns of Reduced Graphene Oxide

Su-Jin Song¹, Yong Cheol Shin¹, Moon Sung Kang¹, Jong Ho Lee², Seok Hee Kang¹, Suck Won Hong¹, and Dong-Wook Han¹

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TuP265

High Resolution Thin Film Flexible Pressure Sensor for Dental Diagnosis

Taehoon Kim, Hyeohn Kim, and Wooyoung Shim

Yonsei Univ., Korea

TuP266

Microinjection of Drug via Dome-Shaped Porous Alumina Microstructures

Yoobeen Lee and Jin Seok Lee

Sookmyung Women's Univ., Korea

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Cellular Adhesion and Growth on the Vertically Aligned Silicon Nanowire Arrays with Different Length

Jin Seok Lee

Sookmyung Women's Univ., Korea

TuP268

Precise Structural Control and Plasmonic Tuning on Tri-Metallic Nanostructures

Mouhong Lin and Jwa-Min Nam

Seoul Nat'l Univ., Korea

TuP269

Preparation of Amine-Functionalized Clays: Physicochemical Analysis and Biological Property

Tae-Youl Kim and Seong Yeol Kim

Lucky Industry Co., Ltd., Korea

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Naked-Eye Bio-Detection by Selective Polyhedral Cu Nanoshell Growth and Quantitative Enhancement of Plasmonic Light Scattering

Jae-Ho Kim, Jeong-Eun Park, Mouhong Lin, Sungi Kim, Gyeong-Hwan Kim, SungJun Park, Gwang Pyo Ko, and Jwa-Min Nam

Seoul Nat'l Univ., Korea



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Maskless Arbitrary Writing of Molecular Tunnel Junctions

Eun Byeon Seo, JunJi Jin, and Hyo Jae Yoon
Korea Univ., Korea

TuP272

Gradients of Rectification: Tuning Molecular Electronic Devices by the Controlled Use of Different-Sized Diluents in Heterogeneous Self-Assembled Monolayers

Gyudon Kong, Hyo Jeong Um, and Hyojae Yoon
Korea Univ., Korea

TuP273

Tuning Structures and Properties for Developing Novel Chemical Tools toward Distinct Pathogenic Elements in Alzheimer's Disease

Jiyeon Han^{1,2}, Hyuck Jin Lee^{1,2}, Kyu Yeon Kim³, Shin Jung Lee², Jong-Min Suh^{1,2}, Jaeheung Cho⁴,
Jung Hyun Chae³, and Mi Hee Lim¹
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TuP274

An iridium(III) Complex as a Photoactivatable Tool for Oxidation of Amyloidogenic Peptides with Subsequent Modulation of Peptide Aggregation

Juhye Kang^{1,2}, Shin Jung Lee¹, Jung Seung Nam¹, Hyuck Jin Lee², Myeong-Gyun Kang¹, Kyle Korshavn³, Hyun-Tak Kim¹, Jaeheung Cho⁴, Ayyalusamy Ramamoorthy³, Hyun-Woo Rhee⁵, Tae-Hyuk Kwon¹, and Mi Hee Lim²
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TuP275

Controlling Topological Parameters of Colloidal Clusters of Gold Nanoparticles for SERS Application

Younghyun Wy, Seunghoon Lee, and Sang Woo Han
KAIST, Korea

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Ratiometric and Reversible Sensing of Nitric Oxide by Quantum Dots in an Amphiphilic Polyethyleneimine Derivative Platform

Junhwa Lee, Joonhyuck Park, Dakyeon Lee, Sujin Lee, and Sungjee Kim
POSTECH, Korea

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NIR-II Emitting Quantum Dots for Multiplex in Vivo Imaging

Yebin Jung, Sanghwa Jeong, Sumin Lee, and Sungjee Kim
POSTECH, Korea



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Synthesis of Bimetallic Nanoparticle Clusters with Enhanced SERS Performance

Seunghoon Lee, Hojin Ahn, and Sang Woo Han
KAIST, Korea

TuP279

Enzymatic Film Formation for Cytocompatible Surface Modification

Kim Ji Yup and Choi Insung S.
KAIST, Korea

TuP280

Nanotopography-Induced Formation of Axon Collateral Branches of Hippocampal Neurons

Jeongyeon Seo, Juan Kim, Sunghoon Joo, and Insung Choi
KAIST, Korea

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Bioinspired Silicification on the Nanostructured Surface by Local Liquid Phase Deposition

Gyuri Kim and Jin Seok Lee
Sookmyung Univ., Korea

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3D Bioprinting of Bifurcating Vessels for Hierarchical Vasculature

Giho Choe¹, Kihoon Kim¹, Minyoung Kim¹, and Kwanwoo Shin^{1,2}
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TuP283

Extracellular Matrix Delivery System for Tissue Regeneration

Huong (Thanh) Nguyen, Kwanwoo Shin, Kilyong Lee, Minyoung Kim, and Augustina Setiawatiand
Sogang Univ., Korea

TuP284

Prevention of Bacterial Colonization on Catheters by a One-Step Coating Process Involving an Antibiofouling Polymer in Water

Hyeongseop Keum, Jin Yong Kim, Byeongjun Yu, Seung Jung Yu, Jinjoo Kim, Hyungsu Jeon, Dong Yun Lee, Sung Gap Im, and Sangyong Jon

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Assessment of the Environmental Performance of Loess using Daphnia Exposure Experiment

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TuP286

Synthesis, Properties and Application of Poly(Acrylic Acid)-g-DNA

Xiaole Hu, Chan-Jin Kim, and So-Jung Park

Ewha Womans Univ., Korea

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Fluorescence Labeled Human Serum Albumin as an Imaging Agent for a SPARC(Secreted Protein Acidic and Rich in Cysteine) Expressing Glioblastoma

Myung Geun Song^{1,2}, Jung Hwan Jo², Cho Rong Park², Hye Jung Jang², Ji-Yong Park², Hyewon Youn², June-Key Chung^{2,3}, Jae Min Jeong², Yun-Sang Lee², and Keon Wook Kang²

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