[TS01T_BP] Poster Session 2

Best Poster Awards Candidates

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4, 1F

TS01T_BP_1

Plasma-Assisted Synthesis of High-Yield CoSi Nanowires with Anomalous Scaling Behavior

Gwangsik Mun[1], Eugene Cho[2], Sihyun Joo[1], Taewoon Kim[1], Seoyeon Jeong[1], Yeon Sik Jung[1], and Hyeuk Jin Han[2]

([1]Korea Advanced Institute of Science and Technology, [2]Sungshin Women's University)

TS01T_BP_2

Single-Step Self-Aligned Printing of Conjugated Polymers for Monolithic Device Integration

Jin Seok Yoon, Bum Hwan Kim, Jae Eun Kim, Won Bae Cho, and Young Tea Chun

(Korea Maritime and Ocean University)

TS01T_BP_3

Environmentally Resilient and Predictable Gas Sensing Achieved through the Alignment of Conjugated Polymer Nanostructures

Bum Hwan Kim, Jae Eun Kim, Jin Seok Yoon, Won Bae Cho, and Young Tea Chun

(Korea Maritime and Ocean University)

TS01T_BP_4

Three-Dimensional Monolithic Integration of Nanowire-Based Polymer Transistors in Logic Circuits

Sang Hwa Song, U Seong Jin, Jin Seok Yoon, Won Bae Cho, and Young Tea Chun

(Korea Maritime and Ocean University)

TS01T_BP_5

Nanoscale-Patterned Charge-Trapping Synaptic Transistors based on Doped Conjugated Polymers

Jae Eun Kim, Bum Hwan Kim, Jin Seok Yoon, Won Bae Cho, and Young Tea Chun

(Korea Maritime and Ocean University)

TS01T_BP_6

Neurotransmitter-Inspired Ambipolar WSe_2 Synaptic Transistor

Seung-Ji Lo, Jihoon huh, Jeongyeol Park, Yohan Lee, Narae Lee, Jae Hyun Kim, Jaehyeung Park, and Moonsang Lee

(Inha University)

TS01T_BP_7

Low-Power and Linear Synaptic Operation in HfOx-Based RRAM via Al_2O_3 Interlayer Engineering

Hyeonwoo Kim and Jiyong Woo

(Kyungpook National University)

TS01T_BP_8

Semiconducting Janus Monolayers as a Platform for Ultrafast Switching and High-Endurance Nonvolatile Memory

Swathi Krishna, Ngoc Thanh Duong, Seong Chu Lim, and Ki Kang Kim
(Sungkyunkwan University)

TS01T_BP_9

Energy-Efficient Uncertainty Quantification via Gate-Tunable 1A1M Synaptic Device for Bayesian Neural Network

Hyeon Bin Kim[1], Yejin Kim[1], Yeon Seo An[1], Seokhyeon Shin[1], Sanghyeon Choi[3], and Gunuk Wang[1,2]
([1]KU-KIST, [2]Korea University, [3]Daegu Gyeongbuk Institute of Science and Technology)

NANO KOREA 2026 Conference

[TS02T_BP] Poster Session 2

Best Poster Awards Candidates

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4, 1F

TS02T_BP_1

Directional Piezo-Transmittance Sensors via Aligned CNTs

Byeongmin Kang[1,2], Kwangjun Kim[3], Jimin Gu[4], Jun-ho Jeong[2], Jong G. Ok[3], and Inkyu Park[1]

([1]Korea Advanced Institute of Science and Technology, [2]Korea Institute of Machinery & Materials, [3]Seoul National University of Science and Technology, [4]University of California)

TS02T_BP_2

Stabilization of Morphotropic Phase Boundary in Ultra-Thin HZO via Ti-Doped ZrO_2 Interlayer for DRAM Applications

Gayoung Kim and Rino Choi

(Inha University)

TS02T_BP_3

Water-Floating Nanotransfer of SERS Substrates for Pesticide Detection

Byung-Ho Kang[1,2], Ji-Hwan Ha[1,2], Byeongmin Kang[1,2], Sohee Jeon[2], Soon Hyoung Hwang[2], Junseong Ahn[3], Inkyu Park[1], and Jun-Ho Jeong[2]

([1]Korea Advanced Institute of Science and Technology, [2]Korea Institute of Machinery & Materials, [3]Korea University)

NANO KOREA 2026 Conference

[TS03T_BP] Poster Session 2

Best Poster Awards Candidates

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4, 1F

TS03T_BP_1

Overcoming the Trade-off between Water Repellency and Wet Adhesion via Microstructured Shape-Memory Polymer Patches

Junghwa Kang, Seongjin Park, Hee Jin Lee, Dong Kwan Kang, and Hoon Eui Jeong

(Ulsan National Institute of Science and Technology)

TS03T_BP_2

Programmable and High-Performance Magnetic Soft Actuators Enabled by Dual Cross-Linked Networks

Hyukjoo Kwon, Somi Kim, Sangwoo Lee, Soyoon Hong, Salah Tawfik, and Hoon Eui Jeong

(Ulsan National Institute of Science and Technology)

TS03T_BP_3

Effect of Oxygen Pressure during Rapid Thermal Annealing on ALD ZnO Thin-Film Transistors

Jihun Ha, Seung-Hun Lee, Ahyun Park, Jae Woong Lee, Yong-Jun Oh, and Jeong Hwan Kim

(Hanbat National University)

TS03T_BP_4

Enhanced Properties of ZnO Thin Films and TFTs by Two-Step Oxidation in ALD

Ahyun Park, Seung-Hun Lee, Jihun Ha, Jae Woong Lee, and Jeong Hwan Kim

(Hanbat National University)

TS03T_BP_5

Effect of Oxygen Partial Pressure on the Electrical, Structural, and Adhesion Properties of a-IGZO Films Using Sputtering

Jae Woong Lee, Seung-Hun Lee, Ahyun Park, Jihun Ha, Jun Yeong Jang, Sera Choi, and Jeong Hwan Kim

(Hanbat National University)

TS03T_BP_6

Electrical Properties of Low-k SiO_2 Thin Films Using Atomic Layer Deposition with Post-Deposition Annealing

Jun Young Jang, Jihun Ha, Ahyun Park, Sera Choi, Jae Woong Lee, and Jeong Hwan Kim

(Hanbat National University)

TS03T_BP_7

Electrical Properties of Cu/Ru Bilayer According to Thermal Annealing Temperature

Sera Choi, Ahyun Park, Jihun Ha, Seung-Hun Lee, Jun Young Jang, Jae Woong Lee, and Jeong Hwan Kim

(Hanbat National University)

[TS04T_BP] Poster Session 2

Best Poster Awards Candidates

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4, 1F

TS04T_BP_1

Composite Oxide Memristor with Engineered Defect Landscape for Low-Voltage Neuromorphic and Reservoir Computing

Hammad Ghazanfar, Muhammad Rabeel, Honggyun Kim, and Deok-kee Kim
(Sejong University)

TS04T_BP_2

3D Heterogeneous Interconnect Using Through-InP Via for RF Applications

Minsik Park, Jonghyun Song, Won-Chul Lee, Hyoungho Ko, and Jongwon Lee
(Chungnam National University)

TS04T_BP_3

Via-Embedded Self-Rectifying Memristor for Edge-AI Application

Solji Park[1], Gapseop Sim[2], Won-Chul Lee[1], Hyoungho Ko[1], and Jongwon Lee[1]
([1]Chungnam National University, [2]National NanoFab Center)

NANO KOREA 2026 Conference

[TS06T_BP] Poster Session 2

Best Poster Awards Candidates

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4, 1F

TS06T_BP_1

Solution-Processed Metasurface Quantum Dot Photodetectors for Inversed Device Structure

Min Jeong Kim and Tae Won Nam

(Pusan National University)

TS06T_BP_2

Programmable Single-Stranded DNA Layers Modulate Local pH at Electrocatalytic Interfaces

Sang Yeon Oh, Tae Kyoung Lee, and Jimin Park

(Korea Advanced Institute of Science and Technology)

TS06T_BP_3

Electrochemical pH Microenvironment Engineering for DNA-Compatible Reactions on a CMOS Microelectrode Array

Myeongjin Koh and Woo-bin Jung

(Pohang University of Science and Technology)

TS06T_BP_4

Multimodal Electrochemical Sensing of Ionic States Using a Functional Microelectrode Array

Woorim Byun and Woo-Bin Jung

(Pohang University of Science and Technology)

TS06T_BP_5

Fibrillar Ion-Transport Networks for Wide-Bandwidth Nafion Actuators

Jeong Sub Lim, So Young Kim, Hanbin Choi, Minjeong Kim, Wonjun Baek, and Do Hwan Kim

(Hanyang University)

TS06T_BP_6

A Scalable Artificial Molecular Recognition Platform for Online Monitoring of Host Cell Proteins in Biopharmaceutical Process

Gyunseong Jung, Youngwook Cho, and Sooyeon Cho

(Sungkyunkwan University)

TS06T_BP_7

Real-Time Spatiotemporal Mapping of Organ-Specific H_2O_2 Dynamics under Nanoplastics Exposure

Yechan Han, Youngwook Cho, and Sooyeon Cho

(Sungkyunkwan University)

TS06T_BP_8

Real-Time In Situ Monitoring of Root-Derived H_2O_2 Signaling in the Rhizosphere

Byeongju Choi and Sooyeon cho
(Sungkyunkwan University)

TS06T_BP_9

Dye-Sensitized Hybrid Indium Oxide Nanofibers for Wavelength-Selective and Room-Temperature Switchable NO_2 Sensing

Jieun Heo, Minhyun Kim, and Il-Doo Kim
(Korea Advanced Institute of Science and Technology)

TS06T_BP_10

Machine Learning-Driven Spectral Analysis of an Artificial Molecular Recognition Sensor Library for Digital Biomarker Identification in Mental Disorders

Jeonghyeon Cho, Minyeong Yoon, and Sooyeon Cho
(Sungkyunkwan University)

TS06T_BP_11

Mutation-Triggered Drug Release and Optical Reporting via Programmable DNA Corona on Single-Walled Carbon Nanotubes

Jeongmin Cha, Seungju Lee, and Sooyeon Cho
(Sungkyunkwan University)

TS06T_BP_12

Synergistic Ni and Zr Co-Substitution in $LaFeO_3$Perovskite Oxides for Enhanced Acidic Oxygen Evolution Reaction

Noh-Moon Lee and Bonjae Koo
(Sungshin Women's University)

TS06T_BP_13

Size-Dependent Surface Reactivity and Elemental Effects in Multimetallic Nanoparticles for Catalytic Nanomaterials Design

Mei-Yi Liao
(National Pingtung University)

TS06T_BP_14

Deep Learning-Based Single-Cell Image Cytometry for Quantitative Biophysical Heterogeneity Profiling in Lymphoma Therapeutic Assessment

Seongcheol Park and Sooyeon Cho
(Sungkyunkwan University)

[TS07T_BP] Poster Session 2

Best Poster Awards Candidates

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4, 1F

TS07T_BP_1

Interface Stabilization of $LiNi_{0.09}Co_{0.05}Mn_{0.05}O_2$ Using Surface-Modified Precursors for Sulfide-Based All-Solid-State Batteries

Hye-Rim Kang, Jin-Whi Kim, and Jeom-Soo Kim

(Dong-A University)

TS07T_BP_2

Study on the Effect of Doping as a Function of Precursor Particle Size in Recycled $LiNi_{0.65}Co_{0.15}Mn_{0.20}O_2$ Cathode Materials

Mun-Kyung Jung, Young-Bin Kim, and Jeom-Soo Kim

(Dong-A University)

TS07T_BP_3

Disentangling Dopant-Dependent Charge-Transfer and Li^+ Diffusion Resistance Contributions in $LiNi_{0.65}Co_{0.15}Mn_{0.20}O_2$ under High-Voltage Operation

Young-Bin Kim, Mun-Kyung Jung, and Jeom-Soo Kim

(Dong-A University)

TS07T_BP_4

Effect of Strong Zr-O Bonding on the Structural Stability of Single-Body Mid-Ni NCM Cathodes under High-Voltage Operation

Jun-Hyeog Ko, Min-Beom Kim, and Jeom-Soo Kim

(Dong-A University)

TS07T_BP_5

Effect of Nb Doping on the Structural Stability of O_3-Type $NaNi_1/_3Fe_1/_3Mn_1/_3O_2$ Cathode Materials for Sodium-Ion Batteries

Yu-Jin Son, Min-Jeong Jo, Hyo-Bin Ryu, and Jeom-Soo Kim

(Dong-A University)

TS07T_BP_6

Correlation between the Properties of Carbonate Precursors and the Electrochemical Performance of Cathode Active Materials

Kyung-tae Yeo, Yeong-gi Jeon, and Jeom-Soo Kim

(Dong-A University)

TS07T_BP_7

Effect of Precursor Morphology on the Synthesis of Single-Body $LiNi_{0.91}Co_{0.045}Mn_{0.045}O_2$ Cathode Materials

Ye-Won Lee and Jeom-Soo Kim
(Dong-A University)

TS07T_BP_8

Effect of Precursor-Derived Cathode Material Characteristics on Electrochemical Performance of $LiNi_{0.60}Co_{0.10}Mn_{0.30}O_2$ Cathode Materials

Yeong-Gi Jeon, Kyung-Tae Yeo, and Jeom-Soo Kim
(Dong-A University)

TS07T_BP_9

Site-Dependent Doping Effects on the Structural Stability of Single-Body Mid-Ni NCM Cathodes under High-Voltage Operation

Min-Beom Kim, Jun-Hyeog Ko, Jong-Heon Lim, and Jeom-Soo Kim
(Dong-A University)

TS07T_BP_10

Structural Stabilization of O3-Type $NaNi_{1/3}Fe_{1/3}Mn_{1/3}O_2$ Cathode Material via Ta Doping for Sodium-Ion Batteries

Min-Jeong Jo, Yu-Jin Son, Hyo-Bin Ryu, and Jeom-Soo Kim
(Dong-A University)

NANO KOREA 2026 Conference

[TS08T_BP] Poster Session 2

Best Poster Awards Candidates

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4, 1F

TS08T_BP_1

4D, 5D Metals Mediated Nickel Phosphide Nanoparticles Phase Transformation Toward Phosphorus-Rich Phases for Hydrogen Evolution Reaction

Eunsu Noh and Don-Hyung Ha

(Chung-Ang University)

TS08T_BP_2

Structurally Defined Model Catalysts for Understanding Performance and Durability in PEM Fuel Cell Cathodes

Soyeong Jo[1], Sohee Kim[2], Jongmin Lee[1], Jungwon An[2], Hyein Park[1], Jiwoo Lee[1], Je Hyeon Yeon[3], Segeun Jang[2], and Dong Young Chung[1]

([1]Korea Advanced Institute of Science and Technology, [2]Kookmin University, [3]Hyundai Motor Group)

TS08T_BP_3

Amorphous High-Entropy Phosphates Enabled by Crystallinity Tunability for High-Rate Alkaline Oxygen Evolution

Hyeon-Seok Lee and Don-Hyung Ha

(Chung-Ang University)

TS08T_BP_4

Enhanced OER Performance of Lanthanum Doped NiFe-LDH under Magnetic Field through $NiFe_2O_4$ Spinel Formation

Woo Young Jung and Haneul Jin

(Dongguk University)

TS08T_BP_5

Study of the Degradation of SOEC Integrated via Wind Turbine

Muhammad Measam Ali[1,2], Rak-Hyun Song[1,2], Dong-Woo Joh[1,2], Tak-Hyoung Lim[1,2], and Jong-Eun Hong[1,2]

([1]University of Science and Technology, [2]Korea Institute of Energy Research)

TS08T_BP_6

Understanding Surface Reconstruction of Nickel Sulfide for Anion Exchange Membrane Water Electrolysis

Byeongyeong Kwack, Junbeom Bang, and Sang Hyun Ahn

(Chung-Ang University)

TS08T_BP_7

Ultrafast Photothermal Shock for Crystallization of Vanadium Oxide and In Situ Anchoring of Co Single Atoms for Enhanced Oxygen Evolution Reaction

Dogyeong Jeon and Il-Doo Kim

(Korea Advanced Institute of Science and Technology)

[TS09T_BP] Poster Session 2

Best Poster Awards Candidates

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4, 1F

TS09T_BP_1

Real-Time Monitoring of pH and Temperature in a Multi-Well Platform Using a Nanopillar-Based Sensor

Mi Jin Kum, Jeong Su Kim, Jaewook Ryu, Kyoung G. Lee, and Donggee Rho
(National NanoFab Center)

TS09T_BP_2

Dual Drug Delivery with Bijels for Enhanced Antibacterial Efficacy

Jiwon Kim[1], Jaehee Jang[1], Jihyuk Yang[1], Khongorzul Enkhtaivan[1], Seongjoong Lee[1], Minje Kim[1], Sohyun Yoon[1], Sehee Kim[1], Wonju Go[1], Naranjargal Batbayar[1], Yonghyun Choi[1,2], Daeyeon Lee[4], and Jonghoon Choi[1,2,3]
([1]Chung-Ang University, [2]Nanomedicine Corporation, [3]Nanopeutics Inc, [4]University of Pennsylvania)

TS09T_BP_3

Effect of Size and Surface Oxidation on Microplastic Cytotoxicity and Peptide Binding for Biosensing Applications

Naranjargal Batbayar[1], Jiwon Kim[1], Jaehee Jang[1], Jihyuk Yang[1], Khongorzul Enkhtaivan[1], Seongjoong Lee[1], Sohyun Yoon[1], Minje Kim[1], Sehee Kim[1], Wonju Go[1], Yunhee Cho[1], Junseo Kang[1], Eunhoo Kim[1], Seoyoung Kang[1], Rokhyang Kim[1], Taehyun Seo[1], Seungbin Lee[1], Sungmin Yoon[1], Jaein Lee[1], Yonghyun Choi[1,2], and Jonghoon Choi[1,2]
([1]Chung-Ang University, [2]Nanomedicine Corporation)

TS09T_BP_4

Inflammation-Targeted Polyphenol-Condensed Antioxidant Nanoparticles for Therapeutic Application

Dohyub Jang[1], Honghwan Choi[1], Young Hun Seo[2], and Sehoon Kim[1]
([1]Korea Institute of Science and Technology, [2]Korea Institute of Science and Technology-Europe)

TS09T_BP_5

Mechanically Spatio-Chimeric Fibrin Assembly Enables Vascular-Integrated Muscle Regeneration for Volumetric Muscle Loss Repair

Su Hyun Jung[1], Minjun Kim[2], Da-Yoon Kim[1], Min Kyu Kim[1], Sieun Lee[2], Yoonhee Jin[2], and Joo H. Kang[1]
([1]Ulsan National Institute of Science and Technology, [2]Yonsei University College of Medicine)

TS09T_BP_6

AuNR@ZnO Core-Shell Nanostructures Functionalized with Siderophores for Active-Targeting Photothermal Antibacterial Therapy

Sehee Kim[1], Jaehee Jang[1], Jiwon Kim[1], Jihyuk Yang[1], Khongorzul Enkhtaivan[1], Seongjoong Lee[1], Minje Kim[1], Sohyun Yoon[1], Wonju Go[1], Naranjargal Batbayar[1], Yonghyun Choi[1], and Jonghoon Choi[1,2]
([1]Chung-Ang University, [2]Nanopeutics Inc.)

TS09T_BP_7

Multifunctional OMV-Liposome Hybrid Nanovesicles: From Structural Stabilization to Targeted Hypoxia Reversal

Khongorzul Enkhtaivan[1], Jiwon Kim[1], Jaehee Jang[1], Jihyuk Yang[1], Seongjoong Lee[1], Sohyun Yoon[1], Minje Kim[1], Sehee Kim[1], Wonju Go[1], Naranjargal Batbayar[1], Yonghyun Choi[1,2], and Jonghoon Choi[1]
([1]Chung-Ang University, [2]Nanomedicine Corporation)

TS09T_BP_8

Polydopamine-Coated Multicomponent ZnO/Ag/CuO Nanocomposite based on Wrinkled Mesoporous Silica for Synergistic Antibacterial Therapy

Minje Kim[1], Jaehee Jang[1], Jiwon Kim[1], Jihyuk Yang[1], Khongorzul Enkhtaivan[1], Seongjoong Lee[1], Sohyun Yoon[1], Wonju Go[1], Sehee Kim[1], Naranjargal Batbayar[1], Yonghyun Choi[1,2], and Jonghoon Choi[1,2,3]
([1]Chung-Ang University, [2]Nanomedicine Corporation, [3]Nanopeutics Inc.)

TS09T_BP_9

Engineering of Liposomes for Cancer Therapy via Modulation of Glutathione and Oxygen Levels

Sohyun Yoon[1], Jaehee Jang[1], Jiwon Kim[1], Jihyuk Yang[1], Khongorzul Enkhtaivan[1], Seongjoong Lee[1], Minje Kim[1], Sehee Kim[1], Wonju Go[1], Naranjargal Batbayar[1], Yonghyun Choi[1,2], and Jonghoon Choi[1,2,3]
([1]Chung-Ang University, [2]Nanomedicine Corporation, [3]Nanopeutics Inc.)

TS09T_BP_10

A Microfluidic-Fabricated iRGD-Hemoglobin Liposome for Reversing Tumor Hypoxia and Enhancing Radiotherapy

Wonju Go[1], Jaehee Jang[1], Jiwon Kim[1], Khongorzul Enkhtaivan[1], Jihyuk Yang[1], Sohyun Yoon[1], Minje Kim[1], Seongjoong Lee[1], Sehee Kim[1], Naranjargal Batbayar[1], Yonghyun Choi[1,2], and Jonghoon Choi[1,2,3]
([1]Chung-Ang University, [2]Nanomedicine Corporation, [3]Nanopeutics Inc.)

TS09T_BP_11

Magneto-Enzymatic Nanohybrid Biosensor Enables Dual-Target Sensing of Small Extracellular Vesicle Markers in Breast Cancer

Izzati Haizan and Ji-HaChoi
(Jeonbuk National University)

TS09T_BP_12

Rapid Identification of Natural Oligosaccharide Isomers at Low Concentrations Using OmpF Nanopore

Fan Gao, Yi-Lun Ying, and Yi-Tao Long
(Nanjing University)

[TS10T_BP] Poster Session 2

Best Poster Awards Candidates

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4, 1F

TS10T_BP_1

Long-Term Spatiotemporal Monitoring of Human Brain Organoids via 3D Liquid Metal-Based Multielectrode Array Platforms

Eunseon Jeong[1], Enji Kim[1,2], Jang-Ung Park[1,2], and Seung-Woo Cho[1,2]

([1]Yonsei University, [2]Institute for Basic Science)

TS10T_BP_2

Flexible SERS Platform with Three-Dimensional Hotspot Nanoarchitecture for Ultrasensitive Neurotransmitter Detection

Ayeong Jeon, Jisoo Park, and Jeonghun Kim

(Yonsei University)

TS10T_BP_3

Trajectory-Resolved SERS Metabolomics Uncovers Dynamic Metabolic Programs in Breast Cancer

Jisoo Park, Minhee Ku, Jaemoon Yang, and Jeonghun Kim

(Yonsei University)

TS10T_BP_4

Targeted and Controlled Carbon Monoxide Delivery Using Nanoparticle Systems for Inflammatory Diseases

Chae Yeon Han and Jihoon Kim

(Chung-Ang University)

TS10T_BP_5

Fabrication of Silk Protein Composite Discoidal Microparticles and Evaluation of Their Lung-Targeted Anticancer Efficacy

Hyeyoun Cho, Yoonho Hwang, Seonmin Choi, Sanghyo Park, and Jaehong Key

(Yonsei University)

TS10T_BP_6

Tannic Acid-Magnesium Nanoparticle Composite Cryogels for Multi-Functional Tissue Engineering and Bone Regeneration

Hyewoo Jeong and Heungsoo Shin

(Hanyang University)

TS10T_BP_7

Integrated Isothermal miRNA Detection via Ligation-Dependent CRISPR/Cas13a Activation

Jiyoon Lee, Jihyun Kim, Dong Yeon Jo, Suyeon Lee, and Hyun Gyu Park

(Korea Advanced Institute of Science and Technology)

TS10T_BP_8

Mannan Nanocapsules Redirect Doxorubicin-Induced Cell Death toward Pyroptosis and Complete DAMP-PAMP Co-Stimulation for Effective In Situ Cancer Vaccination

WeiHsuan Chen and Sejin Son
(Inha University)

TS10T_BP_9

Programmable Olfactory Receptors via Homotripeptide Display on M13 Bacteriophage pVIII N-Terminus through Genetic Engineering

Na-yeong Kim, Tae-Young Jeong, Minsu Jang, Seungwook Han, and Jin-Woo Oh
(Pusan National University)

TS10T_BP_10

Machine Learning-Guided Design of Experiments for Efficient Exploration of Nanomedicine Formulation and Targeting Component Production

Kinga Nimz[1], Ewelina Wyrzykowska[1], A.T. (Katerina) Xenaki[2], Maciej Gromelski[1], and Tomasz Puzyn[1,3]
([1]QSAR Lab Ltd, [2]Utrecht University, [3]University of Gdansk)

TS10T_BP_11

Integrated RPA-RCA-CRISPR-Cas12a Hydrogel Biosensing Platform for Ultrasensitive Malaria Detection

Jun ho Yang, Ha Neul Lee, and Yoo Kyung Kang
(Gyeongsang National University)

TS10T_BP_12

CRISPR-Based Gene Editing of Escherichia coli Nissle 1917 for Improved Probiotic Safety

Byeol Yoon, Swati Das, and Yoo Kyung Kang
(Gyeongsang National University)

TS10T_BP_13

Aptamer-Guided Site-Selective Protein Modification for Biotherapeutics

Jiyun Beon[1], Ewa Pietrasiak[1], Hyesung Jo[2], and Seung Soo Oh[1]
([1]Pohang University of Science and Technology, [2]Northwestern University)

TS10T_BP_14

Development of Peptide-Oligonucleotide Hybrid Biopolymers as Flu Type-Independent Affinity Reagents

Dain Bae, Minjong Lee, and Seung Soo Oh
(Pohang University of Science and Technology)

TS10T_BP_15

Light-Stimuli-Responsive Liposome Fusion Coupled with RCA-CRISPR for Cancer-Derived Exosomal miRNA Analysis

Khulan Nyamzaya, Jueun Han, Yejin Song, Jihee Lee, and Eunjung Kim
(Incheon National University)

TS10T_BP_16

Rolling Circle Amplification-Based DNA Nanoparticles as a Multivalent CpG Adjuvant and Antigen Co-Delivery Platform for Enhanced Dendritic Cell Activation

Jihee Lee[1], Hong-jun Park[2], Seungjoo Haam[2], and Eunjung Kim[1]
([1]Incheon National University, [2]Yonsei University)

NANO KOREA 2026 Conference

[TS11T_BP] Poster Session 2

Best Poster Awards Candidates

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4, 1F

TS11T_BP_1

Real-Time Decoupling of Normal and Shear Forces Using Tri-Photodiode

Yoorim Loh and Yong Suk Oh

(Changwon National University)

TS11T_BP_2

Enhanced Densification and Mechanical-Optical Properties of Freeze-Cast Porous LAS (Li_2O-Al_2O_3-SiO_2) Ceramics via TiO_2 Addition

Ha-Jin Gu, Young-Jae Kim, Ah-Hyeon Park, and Sang-Chae Jeon

(Changwon National University)

TS11T_BP_3

Comparative Analysis of the Complete Chloroplast Genomes of Dioscorea Species with Sequence Variation, Mutational Hotspots, and Divergence History

Cu Thi Tuyen, Sumin Jeong, Yeseul Kim, Bumjin Jang, Byung Jun Jin, Yun Ji Park, and Inkyu Park

(Changwon National University)

TS11T_BP_4

Microwave-Assisted Hydrothermal Synthesis of VO_2 Nanobelts with Enhanced Cycling Stability via rGO Coating

Hyegyeong Hwang and Jinsung Kwak

(Changwon National University)

TS11T_BP_5

Linear Polarization Dependent Photoresponse of $ReSe_2$ Schottky Diode

Jiwon Ha, Seok Hyun Byun, and Jongtae Ahn

(Changwon National University)

TS11T_BP_6

Development of Nanostructured PEGDA Hydrogel Biosensor for Pretreatment-Free Multiplexed Stress Monitoring

Eunseo Cho, Eunyeong Yang, Jaehyeok Choi, Daehwan Ko, and Jinsik Kim

(Dongguk University)

[TS12T_BP] Poster Session 2

Best Poster Awards Candidates

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4, 1F

TS12T_BP_1

Enhanced Dissolution of Iridium Anodes Induced by Organic Compounds

Seohyeon Ka[1,2], Woong Kim[2], Hyung-Suk Oh[1], and Woong Hee Lee[1]
([1]Korea Institute of Science and Technology, [2]Korea University)

TS12T_BP_2

Characterization and Investigation of Green Zinc-Based Metal-Organic Framework (MOF) for Carbon Dioxide Capture

Allison Dale Panaligan[1], You Seok Kang[2], Nomer Arriola Jr.[2], Bryan Gencianeo Alamani[1], Jeong Gil Seo[2], Marjorie Lara Baynosa[1], and Rizalinda de Leon[1]
([1]University of the Philippines Diliman, [2]Hanyang University)

TS12T_BP_3

Tailoring the Atomic Coordination of Cu(I) Dual-Atom Sites in a Metal-Organic Framework for Efficient C_{2+} Production via Synergistic C-C Coupling

Namgyoo Park and Youngkook Kwon
(Ulsan National Institute of Science and Technology)

TS12T_BP_4

Dual-Element Modulation of Cu Active Sites toward Enhanced C-C Coupling in CO_2 Electroreduction

Hojeong Lee and Youngkook Kwon
(Ulsan National Institute of Science and Technology)

TS12T_BP_5

Enhanced OER Performance of High-Energy Ball-Milled Co_3O_4-Fe_2O_3 Electrocatalysts for Anion Exchange Membrane Water Electrolyzers (AEMWE)

Sungjun Heo[1,2], Chiho Kim[1], Jooyoung Lee[1], Song Jin[1], Jae-Yeop Jeong[1], Shin-Woo Myeong[1], Hoseok Lee[1], Minjeong Park[1], and Sung Mook Choi[1,2]
([1]Korea Institute of Materials Science, [2]University of Science and Technology)

TS12T_BP_6

Surface Reconstructed Metal Nitride Catalysts via Fe Incorporation for Efficient Oxygen Evolution toward AEM Electrolysis

Yujin Sim, Seohyun Kim, and Kyoungsuk Jin
(Korea University)

TS12T_BP_7

Cobalt-Based Nanostructured OER Catalysts in Dilute Alkaline Media for Bipolar Membrane Electrolysis

Nanyoung Park and Kyoungsuk Jin
(Korea University)

TS12T_BP_8

Ambient Electrosynthesis of Oximes via Nitrate Reduction-Driven C-N Coupling

Seohyun Kim and Kyoungsuk Jin
(Korea University)

TS12T_BP_9

Sustainable Electrochemical Synthesis of Adipic Acid Using a Bifunctional Catalyst

Sojin Kim and Kyoungsuk Jin
(Korea University)

TS12T_BP_10

Electrochemical Direct Methylation of Imines

Eunji Baek and Kyoungsuk Jin
(Korea University)

TS12T_BP_11

Magnetite Core Dendrimer: Chemical Adsorption of CO_2 with Primary, Secondary, and Tertiary Amine

Do-Yeon Kim, Gunn Park, and Jae-Woo Park
(Hanyang University)

TS12T_BP_12

Binder Wettability Effects in Tandem Electrodes for Improved CO_2 Electro-Conversion to Multicarbon Products

Subin Park[1,2], Hyunwook Kim[1], Se-Woong Baek[2], and Da Hye Won[1,3,4]
([1]Korea Institute of Science and Technology, [2]Korea University, [3]UST-KIST School, [4]Kyung Hee University)

TS12T_BP_13

Vector-Reversal Strategy: Redirecting In-Situ Generated CO_2 for Low-Voltage Bicarbonate Reduction

Youngrok Lee[1], Chulwan Lim[1], Hyung-Suk Oh[1,2], and Woong Hee Lee[1,3]
([1]Korea Institute of Science and Technology, [2]Sungkyunkwan University, [3]UST-KIST School)

TS12T_BP_14

Direct Electrochemical Upgrading of Triethylamine-Captured CO_2 to High-Purity Formic Acid: A Sn-Cu-Catalyzed Reactive Capture and Conversion System

Kezia Langie[1], Changsoo Kim[1], Chan Woo Lee[2], Ung Lee[1], and Da Hye Won[1]
([1]Korea Institute of Science and Technology, [2]Kookmin University)

TS12T_BP_15

Controlled Growth of Carbon Nanotubes via Carbonate Electroreduction in Fluoride-Based Molten Salt

I Ketut Rai Asmara Dipta and Chan Woo Lee
(Kookmin University)

TS12T_BP_16

Atomic-Scale Electronic Modulation for Efficient CO_2 Utilization to Formate: Nanostructured Zn-Doped In_2S_3 on MOF-Derived Carbon-Based Electrocatalyst

Devina Thasia Wijaya[1], Andi Haryanto[1], Dwi Sakti Aldianto Pratama[1], Hyun Woo Lim[2], and Chan Woo Lee[1]
([1]Kookmin University, [2]Seoul National University)

TS12T_BP_17

Nanointerface Engineering of RuO_2/TiO_2 Catalysts for Efficient Water Activation and Alkaline Hydrogen Generation

Dwi Sakti Aldianto Pratama[1], Andi Haryanto[1], Hyun Woo Lim[2], and Chan Woo Lee[1]
([1]Kookmin University, [2]Seoul National University)

TS12T_BP_18

Surface-State-Driven Selectivity of Electrocatalytic Glucose Oxidation: Metallic Au, Au-OH and CuO

Myeonghwan Oh[1,2] and Dong Ki Lee[1,2,3]
([1]Korea Institute of Science and Technology, [2]Korea University, [3]Yonsei University)

TS12T_BP_19

Rhodium-Based Dual Functional Materials Derived from Layered Double Hydroxides for Direct Air Capture and Methanation

Daye Lee[1,2] and Chun-Jae Yoo[1,2]
([1]Korea Institute of Science and Technology, [2]Sungkyunkwan University)

TS12T_BP_20

Design and Operation Strategies for Direct Carbonate Electrolysis and System Integration in Reactive Carbon Capture

Junhyeok Lee and Jihun Oh
(Korea Advanced Institute of Science and Technology)

TS12T_BP_21

Enhanced Ethanol Selectivity in CO2RR by Controlling Interfacial Water with Tetramethylammonium Cations on CuZnO

Yekyong Kim[1], Seulyi Lee[1], and Jihun Oh[1]
([1]Korea Advanced Institute of Science and Technology, [2]Jeonbuk National University)

TS12T_BP_22

Molecular-Level Design of Reaction Environment for Carbon Capture and Utilization: Amine-Guided Selectivity in CO_2 Hydrogenation

Muhammad Ramadhan[1,2], Damdae Park[3], Changsoo Kim[1,2], Ung Lee[1,2], and Kyeongsu Kim[1,2]
([1]Korea Institute of Science and Technology, [2]University of Science and Technology, [3]Chungnam National University)

TS12T_BP_23

Investigating Electronic Structure Descriptors for Electrochemical CO_2 Reduction Selectivity in Cu-M Binary Alloys

Yujin Jung[1], Hafiz Ghulam Abbas[2], Soeun Kim[1], Beomil Kim[1], Junsic Cho[3], Sunghoon Han[3], Hakhyeon Song[1], Yuta Takaoka[4], Jun Tae Song[4], Tatsumi Ishihara[4], Chang Hyuck Choi[3,5], Stefan Ringe[2], and Jihun Oh[1]
([1]Korea Advanced Institute of Science and Technology, [2]Korea University, [3]Pohang University of Science and Technology, [4]Kyushu University, [5]Yonsei University)

TS12T_BP_24

Transport-Chemical Coupling Governs Relaxation Dynamics in CO_2 Electrolysis

Sun Gwan Cha, Seungchul Jang, and Youngkook Kwon
(Ulsan National Institute of Science and Technology)

[TS13T_BP] Poster Session 2

Best Poster Awards Candidates

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4, 1F

TS13T_BP_1

Active Learning Driven Accelerated Discovery of Synthesizable High-Entropy Oxides

Ye In Lee, Jin Ho Woo, and Min Young Ha

(Kyung Hee University)

TS13T_BP_2

Multi-Fidelity DPD Simulation Framework for Efficient Exploration of Design Space in Diblock Copolymer Directed Self-Assembly

Ji In Lee, Seungha Jeong, and Min Young Ha

(Kyung Hee University)

TS13T_BP_3

Multi-Fidelity Gaussian Process to Accelerate Simulation-Based Design: A Study on Optimization of Block Copolymer Directed Self-Assembly

Seungha Jeong, Ji In Lee, and Min Young Ha

(Kyunghee University)

TS13T_BP_4

Interfacial Engineering of Black Phosphorus with Halogen-Terminated Ti_2CT_x MXene for Lithium-Ion Battery Anodes

Chaehyun Kim and Woosun Jang

(Yonsei University)

TS13T_BP_5

Interfacial Design of Pt/Ag Multilayer Current Collectors for Stable Lithium Deposition in Zero-Excess Li Metal Batteries

Seojin Jeon[1], Jiyeon Seo[1,2], Hongkyung Lee[1,2], and Woosun Jang[1]

([1]Yonsei University, [2]Daegu Gyeongbuk Institute of Science and Technology)

TS13T_BP_6

A Data-Driven Knowledge Graph Framework for Electrolyte Materials in Protonic Ceramic Electrolysis Cell

Gaheun Shin and Joonhee Kang

(Pusan National University)

TS13T_BP_7

Simulation-Integrated Machine Learning for Polymer Property Prediction under Low-Data Regimes

Yubin Lee, Uijeong Kim, and Min Young Ha

(Kyung Hee University)

TS13T_BP_8

Structure-Based Discovery of CD44v6-Selective Peptides via Docking and Junction-Pocket Mechanism Analysis

Seonmin Choi, Hyeyoun Cho, Yoonho Hwang, Sanghyo Park, and Jaehong Key
(Yonsei University)

TS13T_BP_9

Inverse Design Framework for Air Electrodes in Protonic Ceramic Electrolysis Cells: Integrating Knowledge Graphs and Latent Space Optimization

Soyun Lee and Joonhee Kang
(Pusan National University)

NANO KOREA 2026 Conference

[TS14T_BP] Poster Session 2

Best Poster Awards Candidates

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4, 1F

TS14T_BP_1

Flow-Induced Piezocatalytic Degradation of Acetaminophen Using PVDF/$FeCo_2O_4$

Aye Chan Pwint Phyu, Gunn Park, and Jae-Woo Park

(Hanyang University)

TS14T_BP_2

Molecular Responses of THP-1 Monocytes to Silver Nanoparticles and Ions Revealed at the Single-Cell Level

Eunseo Lee[1], Sehee Park[1], Seung-Geun Park[1], Minseop Kim[1], Zayakhuu Gerelkhuu[1], and Tae Hyun Yoon[1,2]

([1]Hanyang University, [2]Yoon Idea Lab. Co., Ltd.)

TS14T_BP_3

Noncatalytic Mechano-Electrochemical Energy Conversion in Piezoelectric Ceramic Powders under Ultrasonic Cavitation

Gunn Park and Jae-Woo Park

(Hanyang University)

TS14T_BP_4

Mass Cytometry in Nanomedicine and Nanotoxicology: A Next-Generation Approach for Single-Cell Proteomics Analysis

Zayakhuu Gerelkhuu[1], Sehee Park[2], Eunseo Lee[1], Hyojoo Bang[1], Seung-Geun Park[1], Minseop Kim[1], Yewon Han[1], and Tae Hyun Yoon[1,3]

([1]Hanyang University, [2]Korea Research Institute of Chemical Technology, [3]Yoon Idea Lab. Co. Ltd.)

TS14T_BP_5

MINTOX: A Computational Framework for Joint Toxicity Assessment of Binary Nanoparticle-Ion Systems

Dawid Falkowski[1,2], Alicja Mikolajczyk[1,2], Jongwoon Kim[3], Karolina Jagiello[1,2], and Tomasz Puzyn[1,2]

([1]University of Gdansk, [2]University of Gdansk, [3]Korea Research Institute of Chemical Technology)

[TS01T_P] Poster Session 2

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4 (1F)

TS01T_P_1

Split Gate Twist Contact Device for Skew Gaussian Function

Kyounghoon Kim[1], Youngmin Han[2], Eousik Cho[1], and Hocheon Yoo[2]
([1]Gachon University, [2]Hanyang University)

TS01T_P_2

Light-Induced Bias-Programmable Probabilistic Bits for Scalable p-Computing

Juhyung Seo, Taehyun Park, and Hocheon Yoo
(Hanyang University)

TS01T_P_3

Alkyl Chain Engineering of Zwitterionic Surfactants in PEDOT:PSS for Mechanically Robust, ITO-Free Ultrathin QLEDs

Tae Woo Park[1], Youngjun Jeong[2], Junyoung Ha[2], Hocheon Yoo[1], and Dong Chan Kim[2]
([1]Hanyang University, [2]Gachon University)

TS01T_P_4

Bias-Tunable Multi-Band Photodetection with Wavelength-Dependent Negative Photocurrent and Current Polarity Switching

Geon Park, Wangmyung Choi, Junhyung Cho, and Hocheon Yoo
(Hanyang University)

TS01T_P_5

Tunable Transition between Anti-Ambipolar and N-Shaped NTC Characteristics in Split-Gate Heterojunction Transistors

Taejun Ohm, Jaechan Song, and Hocheon Yoo
(Hanyang University)

TS01T_P_6

Wavelength-Selective Charge Trapping in Polymeric Interface-Engineered Organic Transistors

Suhyeon Kim[1], Seungme Kang[1], Kyounghoon Kim[2], and Hochoen Yoo[1]
([1]Hanyang University, [2]Gachon University)

TS01T_P_7

Improved Structural Ordering for High-Performance p-Type TeO_x Thin-Film Transistors

Dahyun Kam, Sugyeong Han, Heesun Lim, Hyeonjeong Sun, Seungmin Choi, Seungjae Lee, Yeoeun Yun, Taeyang Kim, Suhwon Choi, Hyoseon Lee, and Seung-Beck Lee
(Hanyang University)

TS01T_P_8

Low-Leakage Nanowire Polymer Ferroelectric Transistors Toward Reliable Neuromorphic Architectures

U Seong Jin, Sang Hwa Song, Jin Seok Yoon, Won Bae Cho, and Young Tea Chun
(Korea Maritime and Ocean University)

TS01T_P_9

Hydrogen-Bonding Interfaces Enable Linear and Symmetric Perovskite Synapses through Controlled Ion Transport

Min Jong Lee and Jae Won Shim
(Korea University)

TS01T_P_10

Optoelectronic Platform Integrated with AI for Fast Classification of Toxic Industrial Chemicals

Wonkyu Kang, Jang-Kyun Kwak, Jaeseong Kim, and Sunkook Kim
(Sungkyunkwan University)

TS01T_P_11

CMOS-Compatible Te-Se/Si Photodetectors for SWIR Imaging Arrays

Byeongjin Park[1,2], Seongmo Kang[1], Junwoo Kim[1,3], Dain Kwon[1,3], Mincheol Kim[1,3], SoonYong Kwon[2], and Yonghun Kim[1,3]
([1]Korea Institute of Materials Science, [2]Ulsan National Institute of Science and Technology, [3]University of Science and Technology)

TS01T_P_12

Steep-Slope Cold Source FETs for Leaky Integrate-and-Fire Artificial Neurons

Narae Lee[1], Jihoon Huh[1], Jeongyeol Park[1], Yohan Lee[1], Seung Ji Lo[1], Jae Hyun Kim[1], Seyoung Oh[2], Byungjin Cho[2], and Moonsang Lee[1]
([1]Inha University, [2]Chungbuk National University)

TS01T_P_13

Nanoscale Geometric Disorder in Memristor Arrays as a Tunable Physical Entropy for Random Bit Generation

June Soo Kim
(Cheongju University)

TS01T_P_14

E-Beam Lithography Fabrication and Mesh Size-Dependent Electrical Characteristics of Nano-Dot Floating-Gate Flash Transistors

Hyeonseok Jeong[1], Juyeong Chae[1], Kangmin Yoo[1], Dongyeop Kim[1], Jineui Park[1], Hyeongjoo Sim[1], and Moongyu Jang[1,2]
([1]Hallym University, [2]Quantum Technology Institute of Gangwon)

TS01T_P_15

Electrical Characteristics of Electron-Beam Lithography-Fabricated Nanoscale Floating-Gate Neuromorphic Transistors

Kangmin Yoo[1], Hyeonseok Jeong[1], Juyeong Chae[1], Dongyeop Kim[1], Jineui Park[1], Hyeongjoo Sim[1], and Moongyu Jang[2]
([1]Hallym University, [2]Quantum Technology Institute of Gangwon)

TS01T_P_16

Enhanced Ferroelectric Performance of $Hf_{0.5}Zr_{0.5}O_2$ Thin Films via Process and Electrode Engineering

Junwoo Kim[1,2], Seock-Jin Jeong[1], Jiwoo Kim[1], Byeongjin Park[1], Seongmo Kang[1], Dain Kwon[1,2], Mincheol Kim[1,2], Jongwon Yoon[1], and Yonghun Kim[1,2]
([1]Korea Institute of Materials Science, [2]University of Science and Technology)

TS01T_P_17

Reconfigurable All-Optical Physical Unclonable Functions for Sustainable Security

Jeonghyun Kim, Changgyun Moon, and Sunkook Kim
(Sungkyunkwan University)

TS01T_P_18

Schmitt-Trigger and Reconfigurable Inverter Operations in $WSe_2/CuInP_2S_6$ Ferroelectric Transistors

Min Cheong and Min-Kyu Joo
(Sookmyung Women's University)

TS01T_P_19

Layered Semiconductor of $Mo_6S_3Br_6$ with Ultrahigh Carrier Mobility

Hyewon Shim[1], Yechan Kim[2], Yosub Choi[2], and Cheol-Joo Kim[1,2]
([1]Pohang University of Science and Technology, [2]Institute for Basic Science)

TS01T_P_20

Transitioning from P-Type to Ambipolar Characteristics in Two-Dimensional Tellurene through Al_2O_3 Thin Film Deposition

JO SU JIN, Yohan Lee, Jihoon Huh, Jeongyeol Park, Seung Ji Lo, Narae Lee, Jae Hyun Kim, and Moonsang Lee
(Inha University)

NANO KOREA 2026 Conference

[TS02T_P] Poster Session 2

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4 (1F)

TS02T_P_1

A Flexible Wound Management Platform based on Temperature-Responsive and Colorimetric Core-Shell Electrospun Fibers

Woojin Lee and Ji-Hwan Ha

(Hanbat National University)

TS02T_P_2

Microstructure Control of Anisotropic Polyimide Aerogel by Directional Freeze Casting

Dongwon Im and Yongrok Jeong

(Kyungpook National University)

TS02T_P_3

Achieving High-Efficiency and High-Purity RGB Colors in Penta-Layer Reflective Filters via Resonance Order Control

Seongman Wi, Cheolhun Kang, Jungan Jeon, Hyoseong Kim, and Kyu-Tae Lee

(Inha University)

TS02T_P_4

Development of Flexible Temperature Sensors based on Nanoribbon Yarn for Cryogenic Environments

Yeonsu Seo and Yongrok Jeong

(Kyungpook National University)

TS02T_P_5

Development of an Analysis Model for Thermoacoustic Stirling Engines based on DeltaEC

Donggyun Kim and Yongrok Jeong

(Kyungpook National University)

TS02T_P_6

Phase-Controlled Dip-to-Peak Transition in Multilayer Thin Films Enabled by Complex Refractive Indices of Top Metal Layers

Hyunhee Song, Dohyun Kim, and Kyu-Tae Lee

(Inha University)

TS02T_P_7

Three Dimensional Plasmonic Structure for Low-Concentration Biomarker Detection in Interstitial Fluid

Yeonguk Jung[1,2], Byung-Ho Kang[1,2], Sohee Jeon[1], Soon Hyoung Hwang[1], Inkyu Park[2], and Jun-Ho Jeong[1]

([1]Korea Institute of Machinery & Materials, [2]Korea Advanced Institute of Science and Technology)

TS02T_P_8

Scalable Solvothermal Synthesis of $Ti_3C_2T_x$ MXene Quantum Dots with Near UV Violet Emission

Seungkyu Lee[1], Shahzaib Ali[1], Kunsik An[2], Dae-Hyun Cho[3], and Doyoung Byun[1]
([1]Sungkyunkwan University, [2]Sejong University, [3]Gyeongsang National University)

TS02T_P_9

Laser-Assisted Ligand Engineering of Perovskite Nanofibers and Films for Fluorescence Modulation and Selective Ammonia Detection

Yonghyeon Park, Donghyeon Kim, Soobin Han, Hanseung Kim, and Yun Suk Huh
(Inha University)

TS02T_P_10

Enhanced Thermal Stability of ALD-Grown Indium Gallium Oxide via Dopant Engineering for DRAM Application

Jun Yong Lee[1], Dahui Jeon[1], Won Yong Choi[2], and In-Hwan Baek[1]
([1]Inha University, [2]Genesem Inc.)

TS02T_P_11

Threshold Voltage Modulation of SnO_2 Thin-Film Transistors via CF_4 Plasma Treatment for CMOS-Compatible Operation

Sang Beom Seo[1], Dahui Jeon[1], Won Yong Choi[2], and In-Hwan Baek[1]
([1]Inha University, [2]Genesem Inc.)

TS02T_P_12

Development of a Colorimetric and SERS-Activated Sensing Package System based on TPU-XO/Au Nanostructure with ALP Protective Layers

Sung yoon Bing and Ji-Hwan Ha
(Hanbat National University)

TS02T_P_13

Robust Nanotransfer Printing by Imidization-Induced Interlocking

Yongrok Jeong[1], Jihye Lee[2], Inkyu Park[3], and Jun-Ho Jeong[2]
([1]Kyungpook National University, [2]Korea Institute of Machinery & Materials, [3]Korea Advanced Institute of Science and Technology)

TS02T_P_14

Multifunctional Electrospun Fibers-Based Colorimetric Sweat Sensor for Disease Monitoring

Ji-Hwan Ha[1], Byung-Ho Kang[2,3], Sohee Jeon[2], Soonhyoung Hwang[2], Inkyu Park[3], and Jun-Ho Jeong[2]
([1]Hanbat National University, [2]Korea Institute of Machinery & Materials, [3]Korea Advanced Institute of Science and Technology)

TS02T_P_15

Optoelectronic Diagnostic Sensor Integrated Colorimetric Dressing for Advanced Wound Care

Ji-Hwan Ha[1], Byung-Ho Kang[2,3], Sohee Jeon[2], Soonhyoung Hwang[2], Inkyu Park[3], and Jun-Ho Jeong[2]
([1]Hanbat National University, [2]Korea Institute of Machinery & Materials, [3]Korea Advanced Institute of Science and Technology)

TS02T_P_16

Recyclable Triboelectric Nanogenerator for Ocean Monitoring Systems

Dae-Geun Choi[1], Junseong Ahn[2], Soon Hyoung Hwang[1], and Jun-Ho Jeong[1]
([1]Korea Institute of Machinery & Materials, [2]Korea University)

TS02T_P_17

3D-Printed Microstructure Using Two-Photon Lithography

Junhyuk Choi, Yunwoo Lee, Soon-Hyoung Hwang, Sohee Jeon, Dae-Geun Choi, Hyun Min Cho, Jihye Lee, Won-Seok Jang, and Jun-Ho Jeong
(Korea Institute of Machinery & Materials)

TS02T_P_18

Biomimetic, Programmable, and Part-by-Part Maneuverable Single-Body Shape Morphing Film

Yongrok Jeong[1], Soon Hyoung Hwang[2], Inkyu Park[3], and Jun-Ho Jeong[2]
([1]Kyungpook National University, [2]Korea Institute of Machinery & Materials, [3]Korea Advanced Institute of Science and Technology)

NANO KOREA 2026 Conference

[TS03T_P] Poster Session 2

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4 (1F)

TS03T_P_1

The Porous ZnO Thin Films with Pt Catalyst for the Application to CO Gas Sensors by Nano-Cluster Sputtering

Se Yong Park, Yohan Ko, Jeongmin Park, and Yoonkap Kim

(Gumi Electronics & Information Technology Research Institute)

TS03T_P_2

Fabrication of Laser-Induced Graphene-Based Flexible Microsupercapacitors via Thermal Transfer Printing

Sukjae Kim, Ilwoo Jun, Mun Jeong Choi, Junhyoung Ahn, Kee-Bong Choi, Geehong Kim, Su A Park, and Soongeun Kwon

(Korea Institute of Machinery & Materials)

TS03T_P_3

High Resolution Vision-Assisted Robotic-Arm Printing on Spherical Surfaces

Abdullah Rauf[1,2]

([1]Korea Electrotechnology Research Institute, [2]University of Science and Technology)

TS03T_P_4

Synthesis of Na^+-Free Aqueous Silica Sols over 70 nm for Radical-Assisted Chemical Mechanical Polishing

Do Hyun Moon and Jae Young Bae

(Keimyung University)

TS03T_P_5

Scalable Soft Robotic Platform with Magnetically Augmented Composites for Integrated Sensing and Actuation

Junghyo Kim and Jiyun Kim

(Ulsan National Institute of Science and Technology)

TS03T_P_6

Validation of Lateral Dopant Diffusion Consistency in Ion Implantation Processes Using TCAD Simulation for Smart-Fab Data Platforms

Jonghyeon Ha[1], Sung-Il Chang[1], Jun-Mo Yang[2], Hae-Cheol Hwang[2], Hyung-Jun Kim[2], and Jungsik Kim[1]

([1]Gyeongsang National University, [2]National NanoFab Center)

TS03T_P_7

Metrological Standardization of BET-Based Specific Surface Area Measurement in Graphene

Dain An and Ha-Jin Lee

(Seoul Women's University)

TS03T_P_8

Highly Reliable Stretchable Transmission Lines based on Ag-PDMS Soft Composites

Young Yun Kim[1], Hoon Yeub Jeong[2], Hyeongjun Kim[3], Jimin Kwon[3,4], and Seungjun Chung[1]
([1]Korea University, [2]Pusan National University, [3]Ulsan National Institute of Science and Technology, [4]Korea Advanced Institute of Science and Technology)

TS03T_P_9

Colloidal Synthesis of Toxic Element-Free Europium Doped Cesium Calcium Chloride Perovskite Nanocrystals

Hyungyoon Choi, Mi Yeon Yu, Yerin Kim, Giyong Park, Ho Young Woo, Da Won Lee, Yoonjoo Choi, and Taejong Paik
(Chung-Ang University)

TS03T_P_10

Magnetic Actuator Integrated Multifunctional Device

Heejae Won, Hajun lee, and Jiyun Kim
(Ulsan National Institute of Science and Technology)

TS03T_P_11

Toward Point-of-Care Diagnosis: A Sensitive Mediator-Free Electrochemical Biosensor for Reliable MRSA Detection

Sekar Madhu and Jungil Choi
(Ajou University)

TS03T_P_12

Diameter Control of GaN Nanorods for the Fabrication of Anisotropic Light-Emitting Devices

Jongwoo Kim[1], Joo Hyung Lee[2], Junhyoung Ahn[1], Soongeun Kwon[1], Hyungjun Lim[1], Yong-Ho Ra[3], Jung-Hong Min[2], and Hak-Jong Choi[1]
([1]Korea Institute of Machinery & Materials, [2]Korea Photonics Technology Institute, [3]Jeonbuk National University)

TS03T_P_13

Optimization of Feature-Scale Simulation Data for the Development of AI-Driven Etching Process Prediction Systems

Jiwon Jeong, Sebin An, and Ju-Hong Cha
(Gyeongsang National University)

TS03T_P_14

Enhanced Interconnect Reliability via WSSe Formation: A Strategy for Copper Diffusion Suppression

Vijay D. Chavan, Honggyun Kim, and Deok-kee Kim
(Sejong University)

TS03T_P_15

RTA Temperature-Dependent Oxygen Defect Control in In-Situ Ozone-Treated ALD HfO_2Gate Dielectrics for Reliable TFTs

Seung-Hun Lee[1,2], Jihun Ha[1], Ahyun Park[1], Yong-Jun Oh[1], Sungkyun Park[2], and Jeong Hwan Kim[1]
([1]Hanbat National University, [2]Pusan National University)

[TS04T_P] Poster Session 2

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4 (1F)

TS04T_P_1

Effects of Geometric Design Parameters and Process Conditions on Underfill Filling Efficiency in Bridge-Die-Based Chiplet Packaging

Bongmin Jeong[1,2], Jae-Hak Lee[2], Seungjin Oh[2], Hakyung Jeong[2], Juho Kim[2], Seungman Kim[1,2], Seongheum Han[2], Jun-Yeob Song[2], and Hyunkyu Moon[2]
([1]University of Science and Technology, [2]Korea Institute of Machinery & Materials)

TS04T_P_2

Thermomechanically Adjustable Semi-IPN Polyimide-Acrylamide Gels for Freeform Micro-LED Displays

Young In Kim[1,2], Ji O Kim[1,2], Hyesun Park[2], Bongkyun Jang[2], Jae-Hyun Kim[2], Kang Hee Ku[1], and Hyeon-Don Kim[2]
([1]Ulsan National Institute of Science and Technology, [2]Korea Institute of Machinery & Materials)

TS04T_P_3

AI-Driven Predictive Modeling of Semiconductor Unit Processes: Simulation-Experiment Calibration and Platform

Hyung-Jun Kim[1,5], Kwang-Hee Kim[1], Min-Jun Park[1], Seung-In Lee[1,5], Hae-Cheol Hwang[1], Jun-Mo Yang[1], Jonghyeon Ha[2], Sung-Il Chang[2], Jungsik Kim[2], Ji-Won Jeong[2], Se-Bin An[2], Ju-Hong Cha[2], Yeongin Kim[3], Intae Jeong[3], Yunsoo Kim[4], Taeho Lee[4], Jinho Ahn[4], and Ga-Won Lee[5]
([1]National NanoFab Center, [2]Gyeongsang National University, [3]Alsemy, [4]Hanyang University, [5]Chungnam National University)

TS04T_P_4

Label-Free SPR Detection of Exosomes Using a $CaZrO_3$:Sm Capture Layer

Gyeonghyeon Lee, Da Ye Kim, Hyunjun Kim, Noah Jang, Dongchan Jung, Young Hwan Yu, and Seong Ho Kong
(Kyungpook National University)

TS04T_P_5

Development of an Intelligent pH Sensing Platform based on Memristive Devices

Da Ye Kim, Hyunjun Kim, Noah Jang, Gyeonghyeon Lee, Dongchan Jung, Young Hwan Yu, and Seong Ho Kong
(Kyungpook National University)

TS04T_P_6

Stress Controlled Wafer-Scale Graphene Integration via Film-Assisted ECD for Reliable Nano-Electronic Platforms

Eunjin Hwang[1], Kwang-Seop Kim[1], Jae-Hyun Kim[1], Seon-Jin Choi[2], and Hyeon-Don Kim[1]
([1]Korea Institute of Machinery & Materials, [2]Hanyang University)

TS04T_P_7

Simple Micropatterning of Conductive Polymer Composites based on a Mechanical Scratch Process for Wearable Sensor Applications

Ye-Ji Lee[1], Dong-Joo Kang[1], Sung-Hun Ha[2], and Jong-Man Kim[1]
([1]Pusan National University, [2]Korea Institute of Materials Science)

TS04T_P_8

Effect of Sputtering Conditions and Post-Annealing on Resistive Switching Characteristics of Ag/VOx/Pt Memristors

Jaehyeok Jang, Hyunjun Kim, Noah Jang, Da Ye Kim, and Seong Ho Kong
(Kyungpook National University)

TS04T_P_9

Fabrication of Grating MOT Chips on the Si-gMOT Platform for Neutral-Atom-Based Compact Quantum Sensors

Yeeun Na[1,2], Hui Jae Cho[1,2], Ga Young Park[1], Gapseop Sim[1], So Yeon Kim[1], Jong-Bum You[1], Il-Suk Kang[1], Won-Chul Lee[1,2], Jae-Hoon Lee[3], Sangwon Seo[3], Hyun-Gue Hong[3], Sang Eon Park[3], Taeg Yong Kwon[3], Sang Bum Lee[3], Hyoungho Ko[2], Jongwon Lee[2], and Jongcheol Park[1]
([1]National NanoFab Center, [2]Chungnam National University, [3]Korea Research Institute of Standards and Science)

TS04T_P_10

Development and Characterization of ONO-Based Deep Trench Silicon Capacitors Using an 8-Inch Public Facility

Hyeonseol Kim, Taehyun Kim, Heejun Jang, Jaehyeong Park, and Cheongha Kim
(National NanoFab Center)

TS04T_P_11

Process Study for Fabricating Multilayer Nanostructures Using Roll-Based Nanoimprint Lithography

Sanghee Jung[1], Yeon-Wha Oh[1,2], Huijae Cho[1], Suhyeon Gwon[1], Ga-Won Lee[2], and Il-Suk Kang[1]
([1]National NanoFab Center, [2]Chungnam National University)

TS04T_P_12

Wafer-to-Wafer Hybrid Bonding with Sub-Micron Pad Interconnects

Seungyun Ha, Taehyun Kim, Jubeom Lee, Sangwug Han, Taesung Jung, Yun Hae Shim, and Hee Yeoun Kim
(National NanoFab Center)

NANO KOREA 2026 Conference

[TS06T_P] Poster Session 2

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4 (1F)

TS06T_P_1

Wireless Bio-Adhesive Hydrogel Device for Electrical Stimulation in Spinal Cord Injury

Tae Kyoung Lee, Yeon Jae Chang, Jaeyeon Jun, and Jimin Park

(Korea Advanced Institute of Science and Technology)

TS06T_P_2

Electrochemical Metal-Ion Delivery Enables Spatiotemporal Control of Cellular Signaling

Gwangbin Lee, Lian Lim, and Jimin Park

(Korea Advanced Institute of Science and Technology)

TS06T_P_3

Electrosynthetic Platform for Multiplexed Generation of Biological Signaling Molecules

Jinsoo Kim, Gwangbin Lee, and Jimin Park

(Korea Advanced Institute of Science and Technology)

TS06T_P_4

Enhanced Secondary Light Utilization in 3D Micro-Lens Array Photocatalyst Films with Immobilized Ag-Doped TiO_2

Jee-Won Ahn and Hwan-Jin Jeon

(Tech University of Korea)

TS06T_P_5

Acidity-Dependent Sr Segregation and its Impact on Surface Exchange Kinetics of $La_{0.6}Sr_{0.4}Co_{0.2}Fe_{0.8}O_{3-\delta}$ Air Electrodes

Jaeik Kim and Han Gil Seo

(Dankook University)

TS06T_P_6

Localized Joule Heating-Assisted Curing for Robust Immobilization of Ag-Doped TiO_2 on Copper Fibers for Efficient Methylene Blue Degradation

Hayun Jeong, Jihyeon Lee, Jee Won Ahn, and Hwan-Jin Jeon

(Tech University of Korea)

TS06T_P_7

Nanoporous Graphite for Mitigating Silicon Volume Expansion in Si/Graphite Composite Anodes

Hyunjung Kim, Jaejun Lee, Hyogeun Kim, Vu Binh Nam, and Hee-Tae Jung

(Korea Advanced Institute of Science and Technology)

TS06T_P_8

Novel Approach for Synthesizing High-Performance MXene Films with Enhanced EMI Shielding Ability

Woojin Hwang, Jeesoo Yoon, Jaedong Jang, and Hee-Tae Jung
(Korea Advanced Institute of Science and Technology)

TS06T_P_9

Ceramic-Coated Hydrophilic PAI Separator for Zinc-Ion Batteries

Tae-Hee Kim[1], Sujeong Woo[2], Joohyun Kim[2], and Ji-Won Jung[1]
([1]Konkuk University, [2]Kyungpook National University)

TS06T_P_10

Rod-Like Hydroxyapatite on Spherical Carbon for Selective Cobalt Removal

Changhyun Roh
(Korea Atomic Energy Research Institute)

TS06T_P_11

Proton Shielding Performance of Ceramic Filler-Integrated Cyanate Ester CFRP Composites

Daesin Kim, Bo Hyeon Cho, and Dong-Jin Lee
(Korea Institute of Materials Convergence Technology)

TS06T_P_12

Effect of Interfacial Complexation of Two Oppositely Charged Polyelectrolytes for Low-Voltage Reversible Electro-Adhesion

Seungju Lee and Hyeong Jun Kim
(Sogang University)

TS06T_P_13

Engineering Surface Defects in $Ti_3C_2T_x$ MXenes for Controlled Surface Modification and Enhanced Gas Sensing Performance

Seok hyeon Kim[1,2] and Seon Joon Kim[1,3]
([1]Korea Institute of Science and Technology, [2]Korea University, [3]Korea University of Science and Technology)

TS06T_P_14

Tailoring Product Selectivity in Electrochemical CO_2Reduction with Polyampholyte Ionomers

Sang Jun Park[1], Chansol Kim[2], and Hyeong Jun Kim[1]
([1]Sogang University, [2]Korea Institute of Science and Technology)

TS06T_P_15

Self-Healable MXene-Based Conductive Hydrogel with Liquid Metal Fillers for Flexible Electronics

Yoonseo Jang[1,2], Byeong-Kwon Ju[2], and Seon Joon Kim[1]
([1]Korea Institute of Science and Technology, [2]Korea University)

[TS07T_P] Poster Session 2

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4 (1F)

TS07T_P_1

Important Consideration for Interface Engineering of Carbon-Based Materials in Sulfide All-Solid Lithium-Ion Batteries

HyunTae Lim[1], JaeHong Choi[1], Yoonkook Son[2], and Pilgun Oh[1]
([1]Pukyong National University, [2]Chosun University)

TS07T_P_2

Understanding the Carbon Additive/Sulfide Solid Electrolyte Interface in Nickel-Rich Cathode Composites and Prioritizing the Corresponding Interplay between the Electrical and Ionic Conductive Networks to Enhance All-Solid-State-Battery Rate Capability

Kashif Saleem Saqib[1], JaeHong Choi[1], Yoonkook Son[2], and Pilgun Oh[1]
([1]Pukyong National University, [2]Chosun University)

TS07T_P_3

Uncertainty-Driven Active Learning for Accelerated Screening of Energy-Efficient Multi-Metallic Alloy Catalysts for Electrochemical Nitrate Reduction

Jimin Lee[1], AhYeon Cho[2], Minki Kim[1], YongJoo Kim[2], and Chansol Kim[1]
([1]Korea Institute of Science and Technology, [2]Korea University)

TS07T_P_4

Enhanced Photocatalytic Performance of Cu-Doped TiO_2 Nanofibers via Ion-Exchange and Acid Treatment

So-Hyeon Lee, Jae-Yoon Kim, Si-Hyeon Kim, Jin-Su Lee, Kyeong-Han Na, and Won-Youl Choi
(Kangwon National University)

TS07T_P_5

Calcination Temperature-Driven Microstructural Control of Electrospun $La_{0.6}Sr_{0.4}Fe_{0.9}Mn_{0.1}O_{3-\delta}$ Nanofiber Anodes for Improved SOFC Performance

Woo-Suck Oh, Seong-Min Lim, and Young-Wan Ju
(Wonkwang University)

TS07T_P_6

Microstructural Evolution and Ionic Conductivity of LLTO Solid Electrolytes under Different Sintering Methods

Eunsae Han, Seungheon Ryu, and Youngwan Ju
(Wonkwang University)

TS07T_P_7

Facile Synthesis of Carbon-Coated Hollow SiOx Composites Though Magnesio-Thermic Reduction for High-Performance Lithium-Ion Battery Anodes

Min-Seok Jeong, Ji-Young Choi, Seo-Yoon Kim, and Young-Wan Ju
(Wonkwang University)

TS07T_P_8

LiF-Free CEI Engineering Enables Enhanced Fast-Charging in High Mass-Loading Mn-Rich Li[Mn_1-xFex]PO_4 Cathodes

Jiwoo Choi, Bonyoung Ku, and Jongsoon Kim
(Sungkyunkwan University)

TS07T_P_9

High-Precision Terahertz Thickness Estimation of Lithium-Ion Battery Electrodes Using Model-Based Spectral Analysis

Jinwoo Jeon[1], Guseon Kang[2], Minwoo Park[1], Jae-Yoon Kim[1], Hyeonwoo Kim[1], Younggeun Lee[1], Seunghwa Ryu[1], and Young-Jin Kim[1]
([1]Korea Advanced Institute of Science and Technology, 2Korea Institute of Industrial Technology)

TS07T_P_10

Tailoring the Electronic Structure of Boron-Doped Carbon Rose for Enhanced ORR Selectivity toward H_2O_2 Production

Subeen Ohn, Yeomin Kang, and Ki Tae Park
(Konkuk University)

TS07T_P_11

Creep Properties of Sn-Bi-In Ternary Low-Temperature Solder for Thermoelectric Device Applications

Seong-jae Jeon, Seungik Shin, Seungwoo Han, and Seungmin Hyun
(Korea Institute of Machinery & Materials)

TS07T_P_12

Transition Metal Fluoride (TMF) Tailored Platinum Electrocatalyst for Highly Efficient Alkaline Hydrogen Evolution Reaction

Jeonghwa Choi[1,2] and Sungjun Kim[1]
([1]Korea Research Institute of Chemical Technology, [2]Hanyang University)

TS07T_P_13

Laser-Engineered 3D Carbon Hosts for Stable Metal Deposition in Anodeless Sodium Metal Batteries

Y. Son[1,2], H. Kim[1,3], Kyubock Lee[2], and Hana Yoon[1]
([1]Korea Institute of Energy Research, [2]Chungnam National University, [3]Korea University)

TS07T_P_14

Stabilizing Na Plating/Stripping on Current Collectors via Laser-Induced Graphene for Anode-Free Sodium Batteries

Haeun Kim[1,2], Yewon Son[1,3], Seung-Ho Yu[2], and Hana Yoon[1]
([1]Korea Institute of Energy Research, [2]Korea University, [3]Chungnam National University)

TS07T_P_15

Efficient Energy-Based Thermal Fatigue Analysis of Thermoelectric Devices via Model Reduction

Seungik Shin[1], Seong-jae Jeon[2], Jung Yup Kim[2], and Seungwoo Han[1,2]
([1]University of Science and Technology, [2]Korea Institute of Machinery & Materials)

TS07T_P_16

On-Sheet Regeneration of Spent High Nickel Cathode Enabled by Femtosecond Laser Pulses

Hyeonwoo Kim[1], Mee Ree Kim[2], Sangbaek Park[2], and Young-Jin Kim[1]
([1]Korea Advanced Institute of Science and Technology, [2]Chungnam National University)

[TS08T_P] Poster Session 2

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4 (1F)

TS08T_P_1

Electrocatalytic Hydrogen Storage via the Isopropanol/Acetone Liquid Organic Hydrogen Carrier System

Jaewon Lee[1,2] and Sung Ki Cho[2]

([1]University of Science and Technology, [2]Korea Institute of Science and Technology)

TS08T_P_2

Sn-Pd Activated Surface Nucleation Control of Ir Electrodeposition on Ti for Low-Loading OER Electrodes in PEM Water Electrolysis

Sieon An[1,2], Junhyeong Kim[1], Jongsup Hong[2], and Sung Ki Cho[1]

([1]Korea Institute of Science and Technology, [2]Yonsei University)

TS08T_P_3

Deciphering the Thermal Response of Pt/C Electrocatalyst for Hydrogen Energy Systems

Jongsu Noh and Dong Young Chung

(Korea Advanced Institute of Science and Technology)

TS08T_P_4

In-Situ DEMS Analysis of Carbon Support Degradation during ADT Protocols

Hongmin An, Jongsu Noh, and Dong Young Chung

(Korea Advanced Institute of Science and Technology)

TS08T_P_5

Investigation of Alkali Metal Cation Effects on Alkaline Hydrogen Evolution Reaction via In Situ ATR-SEIRAS

Hanjoo Kim and Dong Young Chung

(Korea Advanced Institute of Science and Technology)

TS08T_P_6

High-Entropy Effect-Driven OER Activity of NiFeCoCuW Electrodes for AEM Water Electrolysis

Yong won An, Dong Young Hwang, and Sang Hyun Ahn

(Chung-Ang University)

TS08T_P_7

Ion-Cluster-Driven Anion Exchange Membranes Enabling Salt-Free and Durable CO_2 Electrolysis under Alkaline Conditions

Jungmin Yoo[1], Haeryang Lim[2], Dong Young Hwang[1], So Young Lee[2], and Sang Hyun Ahn[1]

([1]Chung-Ang University, [2]Korea Institute of Science and Technology)

TS08T_P_8

Interfacial-Driven Insight into the Diagnosis of PEMFC Degradation Using Distribution of Relaxation Time Spectroscopy

JunHwa Kwon and Hee-Young Park
(Korea Institute of Science and Technology)

TS08T_P_9

High-Period Element Doping as a Key Driver of Hydrogen Evolution in a Proton Exchange Membrane Water Electrolyzer

Do Hyung Kweon and Hee-Young Park
(Korea Institute of Science and Technology)

TS08T_P_10

Flow-Cell Urea Electrosynthesis over Anion-Tailored Cu-Zn Catalysts Using CO_2 and Nitrate

Dong Young Hwang and Sang Hyun Ahn
(Chung-Ang University)

TS08T_P_11

Low-Temperature Soaking-Derived CoFe/Ni Catalysts for Enhanced Alkaline Oxygen Evolution Reaction

Jaeyoung Byun, Jungmin Yoo, and Sang Hyun Ahn
(Chung-Ang University)

TS08T_P_12

Structural Reinforcement of PEMFC Catalyst Layers under Carbon Corrosion and Recovery via Non-Conductive Nanostructured Additives

Seunghyun Jo, Katie Heeyum Lim, and Hee-Young Park
(Korea Institute of Science and Technology)

TS08T_P_13

Hydrogen Storage and Cycling Performance of a DPM-MBT LOHC Mixture

Simal Cam[1,2], Emilio Audasso[1], Yongmin Kim[1], and Hyangsoo Jeong[1,2,3]
([1]Korea Institute of Science and Technology, [2]University of Science and Technology, [3]Kyung Hee University)

TS08T_P_14

Self-Supported Na Intercalated RuO_2 Nanosheet Array for Efficient and Stable OER in PEM Water Electrolysis

Changseung Lee[1,2] and Jin Young Kim[1,3]
([1]Korea Institute of Science and Technology, [2]Korea University, [3]University of Science and Technology)

TS08T_P_15

Integrated Reactive CO_2 Capture and Conversion via Zwitterionic Carbamate Electrolysis

Heejong Shin
(Sogang University)

TS08T_P_16

Lewis Acid-Mediated Enhancement of Electrochemical OER via Electrophilic Peroxo Pathways

Jo Eun Jeong and Heejong Shin
(Sogang University)

TS08T_P_17

Enhancing Reactive CO_2 Capture via Hierarchical Pore Engineering in Carbonate Electrolysis

Minwoo Suh and Heejong Shin
(Sogang University)

TS08T_P_18

Revealing the Effect of OH^- Transport by Controlling Membrane Thickness

Dayun Kim[1], Heejong Shin[2], and Dong Young Chung[1]
([1]Korea Advanced Institute of Science and Technology, [2]Sogang University)

TS08T_P_19

Enhancing Ru-Based Catalysts for Ammonia Decomposition by Chloride Removal

Irene Rizky Safina Daulay[1,2], Yoondo Kim[2,3], Solicha Annur Hanifah[1,2], Minseok Bae[1], Keunsoo Kim[1,2], Hyangsoo Jeong[1,2], Yongmin Kim[1], Suk Woo Nam[1], Kwang Ho Song[3], and Hyuntae Sohn[1,2]
([1]Korea Institute of Science and Technology, [2]University of Science and Technology, [3]Korea University)

TS08T_P_20

Structural Modification of Catalyst and Membrane-Electrode for Effective Catalyst Utilization

Yeram Shin[1,2] and Sungjun Kim[2]
([1]Chungbuk National University, [2]Korea Research Institute of Chemical Technology)

TS08T_P_21

Facile Method for Tunable Layered Reinforced Composite Proton Exchange Membrane Fabrication

Nayeon Ko[1,2], Kwan-Young Lee[1,2], and Jin Young Kim[1,3]
([1]Korea Institute of Science and Technology, [2]Korea University, [3]University of Science and Technology)

TS08T_P_22

Advanced Design of Electrode Structure for High-Efficiency Anion Exchange Membrane Water Electrolysis

Seongmin Shin[1,2], Yeram Shin[2], and Sungjun Kim[2]
([1]Sungkyunkwan University, [2]Korea Research Institute of Chemical Technology)

TS08T_P_23

Correlation between Ionomer Content and Relative Humidity in PEMFCs: Impact on Proton Transport and Performance

Seunggyun Han, Seon-Yeong Lee, U hyeok Son, and Han-Ik Joh
(Konkuk University)

TS08T_P_24

Engineering Mesoporous Carbon via Solvent-Assisted Ligand Exchange of ZIF-8 for Enhanced ORR in Fuel Cells

Nayeon Kim and Han-Ik Joh
(Konkuk University)

TS08T_P_25

Moisture-Driven Electric Generator Using Hygroscopic Materials for Self-Powered Wound-Healing Stimulation

Yujang Cho, Seongcheol Ahn, Yeji Han, and Il-Doo Kim
(Korea Advanced Institute of Science and Technology)

NANO KOREA 2026 Conference

[TS09T_P] Poster Session 2

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4 (1F)

TS09T_P_1

Binary 2D Graphene-Integrated Electrochemical Sensor for Sensitive Detection of Benzo[a]Pyrene in Particulate Matter

Fauzan Amin and Hye Jin Lee
(Kyungpook National University)

TS09T_P_2

Passive Microfluidic Platform for Distance-Based Quantification of Janus Microparticle Aggregation via Sedimentation Encoding

Kyung Won Lee[1], Kyoung G. Lee[1], Nam Ho Bae[1], Donggee Rho[1], Jaehee Lee[1], Hyun C. Yoon[2], and Yoo Min Park[1]
([1]National NanoFab Center, [2]Ajou University)

TS09T_P_3

Structural Impact of mRNA on the Cubic

Harin Jin[1], Chaehyeon Park[2], Jongeon Park[2], and Hojun Kim[2]
([1]University of Science and Technology, [2]Korea Institute of Science and Technology)

TS09T_P_4

Switch-On MRI Nanoprobe Targeting P. gingivalis for Ultra-Early Diagnosis of Alzheimer's Disease via Magnetic Resonance Energy Transfer

Jaehee Jang[1], Jiwon Kim[1], Khongorzul Enkhtaivan[1], Jihyuk Yang[1], Seongjoong Lee[1], Minje Kim[1], Sohyun Yoon[1], Batbayar Naranjargal[1], Wonju Go[1], Sehee Kim[1], Yonghyun Choi[1,2], and Jonghoon Choi[1,2,3]
([1]Chung-Ang University, [2]Nanomedicine Corporation, [3]Nanopeutics Inc.)

TS09T_P_5

Engineering Exosome-Inspired Vesicles to Enhance Tissue Penetration

Seunghwan Bang, Hyerin Kim, and Hojun Kim
(UST-KIST School)

TS09T_P_6

MXene-Based Electrochemical Aptasensor Integrated with CRISPR/Cas12a for Rapid Detection of Staphylococcus Aureus

Minju Ahn and Jin-Ha Choi
(Jeonbuk National University)

TS09T_P_7

Microfluidic Platform for Oxygen-Loaded Liposomes Enabling Dual Immune Checkpoint Blockade in Pancreatic Cancer

Jihyuk Yang[1,2], Yonghyun Choi[1,2], Jaehee Jang[1], Jiwon Kim[1], Khongorzul Enkhtaivan[1], Naranjargal Batbayar[1], Hyejun Ko[1], Yerin Jang[1], Seongjoong Lee[1], Minje Kim[1], Sohyun Yoon[1], Wonju Go[1], Sehee Kim[1], and Jonghoon Choi[1,2,3]
([1]Chung-Ang University, [2]Nanomedicine Corporation, [3]Nanopeutics Inc.)

TS09T_P_8

Lactobacilli Biofilm Engineering under Sub-Lethal Metallic Conditions for Anti-Bacterial Urinary Catheters

Seongjoong Lee[1], Yonghyun Choi[1], Jaehee Jang[1], Jiwon Kim[1], Khongorzul Enkhtaivan[1], Jihyuk Yang[2], Minje Kim[1], Sohyun Yoon[1], Sehee Kim[1], Wonju Go[1], Naranjargal Batbayar[1], and Jonghoon Choi[1,2]
([1]Chung-Ang University, [2]Nanomedicine Corporation)

TS09T_P_9

CRISPR-Cas12a/Cas13a-Based Multiplex Detection Platform for Breast Cancer-Associated BRCA1 and miR-10b

Min Yu Choi and Jin-Ha Choi
(Jeonbuk National University)

TS09T_P_10

Amplification-Free Dual-Channel Metal-Enhanced Fluorescence (MEF) Biosensor Integrating CRISPR/Cas12a and Molecular Beacon for Simultaneous DNA and RNA Detection of Hepatocellular Carcinoma

Pureum Kim, Seoyoung Kim, and Jin-Ha Choi
(Jeonbuk National University)

TS09T_P_11

Atomic Layer Etching of HfO_2 for Atomic-Scale Thickness Control of MOSFET Gate Oxides

Kugalur Shanmugam Ranjith[1], Sanghun Han[2], Young-Kyu Han[1], and Yun Suk Huh[2]
([1]Dongguk University, [2]Inha University)

TS09T_P_12

Rapid Tyramine Sensing in Beef, Mackerel, and Cheese Using Cuvette-Type LSPR Chips with High Selectivity

Soobin Han[1], Taeyeon Kwon[1], Mi-Hwa Oh[2], Jong Pil Park[3], and Yun Suk Huh[1]
([1]Inha University, [2]National Institute of Animal Science, [3]Chung-Ang University)

TS09T_P_13

FAST-BBB: A Functional Assessment Platform for Rapid Screening of Blood-Brain Barrier Toxicity Induced by Household Chemicals Using a Tri-Culture Microfluidic Array

DoHyung Kim[1], Yunjeong Maeng[2], Taeim Lee[2], Sang Yoon Kyung[2], YoungWon Koo[1], HyeKang Park[1], Jihoon Ko[2], and Seokyoung Bang[1]
([1]Dongguk University, [2]Gachon University)

TS09T_P_14

Graphene Oxide-Assisted Discrimination of Viral RNA from Free RNA for Accurate Surface Detection of SARS-CoV-2

Hee Dong Kim, Daegyeom Lee, Min Kang Cho, Hyejin Lee, Yun Guang Li, Changyoon Baek, and Junhong Min
(Chung-Ang University)

TS09T_P_15

An Integrated Fluidic Platform for Oral Microbiome Profiling Utilizing Graphene Oxide Functionalized Microbeads

Min Kang Cho, Daegyeom Lee, Hee Dong Kim, Hyejin Lee, Yun Guang Li, Changyoon Baek, and Junhong Min
(Chung-Ang University)

TS09T_P_16

Liposome-Based Degradable Surface for Pathogen Concentration in Sample Preparation

Hyejin Lee, Yun Guang Li, Hee Dong Kim, Daegyeom Lee, Min Kang Cho, Changyoon Baek, and Junhong Min
(Chung-Ang University)

TS09T_P_17

Alkaline-Free Plasmid Isolation from Genomic DNA Using Bead-Based Platform

Daegyeom Lee, Hee Dong Kim, Min Kang Cho, Hyejin Lee, Yun Guang Li, Changyoon Baek, and Junhong Min
(Chung-Ang University)

TS09T_P_18

VO_2 Nanoparticle Based Flexible Films as Temperature-Responsive Nanomaterial

Yoonjoo Choi, Da Won Lee, Yerin Kim, Giyong Park, Hyungyoon Choi, and Taejong Paik
(Chung-Ang University)

TS09T_P_19

Colloidal Synthesis of Nearly Uniform Calcium Fluoride-Lithium Ytterbium Fluoride Heterodimer Nanoparticles

Giyong Park, Seung Hyeon Kim, Ho Young Woo, Da Won Lee, Yoonjoo Choi, Hyungyoon Choi, Yerin Kim, and Taejong Paik
(Chung-Ang University)

TS09T_P_20

All-In-One Microfluidic Design to Integrate Vascularized Tumor Spheroid into High-Throughput Platform

Youngtaek Kim and Hong Nam Kim
(Korea Institute of Science and Technology)

NANO KOREA 2026 Conference

[TS10T_P] Poster Session 2

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4 (1F)

TS10T_P_1

A Novel Platform for Bottom-up Tissue Engineering via Cell-Adhesive Double Network Self-Healing Hydrogel Capable of Pharmaceutical Testing

Jaewook Park and Won-Gun Koh
(Yonsei University)

TS10T_P_2

Ultrafast Self-Gelling, Highly Absorbent Starch Microparticles with Robust Wet-Tissue Adhesion for Non-Compressible Hemostasis

Dongkyun Shin[1], Soohwan An[1], Jihoon Jeon[1], Seung Yeop Han[1], Tae-Gyung Oh[1], and Seung-Woo Cho[1,2,3]
([1]Yonsei University, [2]Cellartgen, Inc., [3]Institute for Basic Science)

TS10T_P_3

Development of a Self-Healing Adhesive Hydrogel Patch for the Treatment of Inflammatory Diseases

YoungBin Kim and Won-Gun Koh
(Yonsei University)

TS10T_P_4

Development of an Injectable Self-Healing Adhesive Starch Hydrogel for Exosome-Based Therapy of Oral Mucositis

Eun ji Park and Won-Gun Koh
(Yonsei University)

TS10T_P_5

Modeling Obesity-Driven Liver-Pancreas Crosstalk Using a Convective Transport Multi-Organoid Device

Jungho Bae[1], Jisu Kim[4], Baofang Cui[1], Kisuk Yang[4], and Seung-Woo Cho[1,2,3]
([1]Yonsei University, [2]Cellartgen, [3]Institute for Basic Science, [4]Incheon National University)

TS10T_P_6

MMP-9-Responsive Hydrogel Platform for Real-Time, Non-Invasive Monitoring of Cellular Activity

Shinwoo Yun and Won-Gun Koh
(Yonsei University)

TS10T_P_7

Hydrogen-Bond-Driven Hydrogel Incorporating Carbon Dot-Polydopamine Nanoparticles for ROS-Regulating Inflammatory Tissue Repair

Minjeong Kim and Su-Hwank Kim
(Chung-Ang University)

TS10T_P_8

Catalytic Redox Cascade Polydopamine-Catalase Nanoparticles for Remodeling Oxidative and Hypoxic Microenvironments in Diabetic Wounds

Su-Hwank Kim
(Chung-Ang University)

TS10T_P_9

Multienzyme Redox Cascade Biomaterial for Regulating the Hypoxia-ROS Axis in Tissue Regeneration

Sumi Choi and Su-Hwan Kim
(Chung-Ang University)

TS10T_P_10

Three-Dimensional Tissue Cryopreservation Using Synthetic Dual-Antifreeze Peptide

Kevin Kent Vincent Canlas and Hansoo Park
(Chung-Ang University)

TS10T_P_11

Encapsulation-Based Nanoparticle Delivery for Enhanced Cryopreservation of 3D Cell Structure Systems

Juhyun Kim and Hansoo Park
(Chung-Ang University)

TS10T_P_12

A Microfluidic Electrochemical Immunosensor for Detection of CEA and Ki67 in 3D Tumor Spheroids

Sujin Kim[1,2], Seonyeop Kim[2], Chanjin Ko[2], Wonseok Lee[2], and Hwan Drew Kim[1]
([1]Seoul National University of Science and Technology, [2]Korea National University of Transportation)

TS10T_P_13

Optimizing the Surface Functionalization of Peptide-MXene Nanoplatforms to Amplify Tumor-Targeting Efficiency and Photothermal Therapy

Sujin Kim[1,2], Chaerin Park[1], Sathiyamoorthy Padmanaban[3], Aravindkumar Sundaram[3,4], Gul Karima[2], In-Kyu Park[3], and Hwan D. Kim[1]
([1]Seoul National University, [2]Korea National University, [3]Chonnam National University, [4]DR.Cure Co., Ltd.)

TS10T_P_14

Neuroactive Protein and Suture-Free Cuff Electrode Integrated Artificial Nerve Conduit for Sciatic Nerve Repair

Byulhana Kim[1,2], Jisung Kim[2], Joowon Lee[1], Buri Kim[1], Seyun Ahn[1], Changhoon Baek[2], and Justin J. Chung[1,2]
([1]Seoul National University, [2]Seoul National University Hospital)

TS10T_P_15

AI-Driven Discovery and Optimization of MEK5 Inhibitors With Lipid Nanoparticle-Based Delivery for Enhanced Anticancer Therapy

Yoonho Hwang, Seonmin Choi, Hyeyoun Cho, Sanghyo Park, and Jaehong Key
(Yonsei University)

[TS11T_P] Poster Session 2

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4 (1F)

TS11T_P_1

Comparison of Electrical Characteristics in Silicon Photomultipliers with Different Pixel Isolation Designs

Hyowoong Noh, Yong Sun Yoon, Junyeong Lee, and Dae-Sik Lee
(Electronics and Telecommunications Research Institute)

TS11T_P_2

Breathable Nanofiber Pressure Sensor Array Integrated into a Face Mask for Wireless Respiratory Monitoring

Jaehyun Kim and Dae-Sik Lee
(Sungkyunkwan University)

TS11T_P_3

Integrated Nanotopology and Direct qLAMP Platform for On-Site Detection of Atopic Dermatitis-Associated Bacteria

Jihan Lim[1], Junwoo Kwon[1], Kyoung G. Lee[2], and Younseong Song[1]
([1]Kumoh National Institute of Technology, [2]National NanoFab Center)

TS11T_P_4

Bioresorbable Protective Coatings for Enhanced Longevity of Continuous Glucose Monitoring Systems

Tae Sang Yu, Junwoo Yea, Solbi Han, and Kyung-In Jang
(Daegu Gyeongbuk Institute of Science and Technology)

TS11T_P_5

Multimodal Alcohol Measurement System for Real-Time In-Vehicle Alcohol Detection

Junyeong Lee[1], Hyowoong Noh[1], Ju-Hong Yang[2], Young Ki Hahn[2], and Dae-Sik Lee[1]
([1]Electronics and Telecommunications Research Institute, [2]Kyungpook National University)

TS11T_P_6

Wearable Multiplexed Colorimetric Band for Wound Monitoring based on pH and Temperature

Goeun Choi, Sangwon Kim, Taehwan Jang, Seongju Lee, and Yongsuk Oh
(Changwon National University)

TS11T_P_7

Design and Finite Element Analysis of a Pressure-Insensitive Shear Force Sensor for Pressure Injury Prevention

Sangbin Lee[1], Yonghee Lee[1], Hyeonseok Han[2], Younghan Kim[1], Seungjoon Ha[1], and Yong Suk Oh[1]
([1]Changwon National University, [2]Korea Advanced Institute of Science and Technology)

TS11T_P_8

Development of an FPCB-Based Flexible Sensor Patch for Real-Time Posture and Pressure Monitoring

Ha-Kyoung Lee, Nam-Hyeong Lee, Seng-ju Han, Young-han Kim, Jeong-A Han, Sang-bin Lee, and Yong-Suk Oh
(Changwon National University)

TS11T_P_9

Flexible Triboelectric SCG Sensor with Coil Architecture for Cuff-Less Blood Pressure Monitoring

Jeong A Han[1], Young Han Kim[1], Seng Ju Han[2], and Yong Suk Oh[1]
([1]Changwon National University, [2]University of California)

TS11T_P_10

Sintering Behavior of Al_2O_3-Gd_2O_3 Composites for Burnable Absorber Rods in SMRs

Ah-Hyeon Park[1], Ha-Jin Gu[1], Young-Jae Kim[1], Sung-Woo Ha[2], Kwang-Young Lim[2], Yeon-Soo Na[2], and Sang-Chae Jeon[1]
([1]Changwon University, [2]KEPCO Nuclear Fuel Co., Ltd)

TS11T_P_11

Microstructural Control of Gd_2O_3-ZrO_2 Composites for Burnable Absorber Applications in SMRs: Suppression of Diffusion-Induced Grain Boundary Migration for Enhanced Mechanical Stability

Young-Jae Kim[1], Ha-Jin Gu[1], Ah-Hyeon Park[1], Sung-Woo Ha[2], Yeon-Soo Na[2], Kwang-Young Lim[2], and Sang-Chae Jeon[1]
([1]Changwon National University, [2]KEPCO Nuclear Fuel Co., Ltd.)

TS11T_P_12

Morphological and Genome-Wide InDel Marker Analysis for Cultivar Discrimination in Rehmannia glutinosa

Sumin Jeong[1], Yun Ji Park[1], Yunjoo Kang[1], Yeseul Kim[1], Byung Jun Jin[1], Yong-Goo Kim[2], Jong Won Han[2], and Inkyu Park[1]
([1]Changwon National University, [2]Rural Development Administration)

TS11T_P_13

Comparative Analysis of Chloroplast-Mitochondrial Genome Interactions in 11 Salix Species

Yeseul Kim, Sumin Jeong, Shukherdorj Baasanmunkh, Youngmoon Kim, Hyeok Jae Choi, and Inkyu Park
(Changwon National University)

TS11T_P_14

The Effects of Tanshinone I on Memory Consolidation in Mice

Minseo Seo, Sun Woo Park, Huiyoung Kwon, and Ho Jung Bae
(Changwon National University)

TS11T_P_15

The Effect of Paeonol on Cognitive Impairments in Scopolamine- and βamyloid-Treated Mice

Sun Woo Park, Minseo Seo, Huiyoung Kwon, and Ho Jung Bae
(Changwon National University)

TS11T_P_16

Intergration of MOF/TEG for Hydrolysis and Detection of Nerve Agents

Eojin Oh, Myeonghun Jung, and Hea Jung Park
(Changwon National University)

TS11T_P_17

Ascorbic Acid-Driven Sustainable Recovery of Manganese from Waste Mn Dust

Yeonseo Jang and Haesung Jung
(Changwon National University)

TS11T_P_18

Synthesis of Phosphorescent Pt(II) Complexes with Sterically Rigid Indolocarboline Ligands

Geon Woo Park and Hea Jung Park
(Changwon National University)

TS11T_P_19

Design and Photophysical Study of Chiral-Structure-Based Pt(II) Emitters for Circularly Polarized Luminescence

Ho jun Lee and Hae jung Park
(Changwon National University)

TS11T_P_20

Cryogenic Electrical Characterization of Graphene Field Effect Transistor

Seok Hyun Byun, Jiwon Ha, and Jongtae Ahn
(Changwon National University)

TS11T_P_21

Emission Modulation of Blue Phosphorescent Pt(II) and Pd(II) Complexes through Ligand Conjugation Control and Metal-Center Variation

Phil Lip Lee and Hea Jung Park
(Changwon National University)

TS11T_P_22

Metformin-Mediated Inhibition of Ferroptosis in Brown Adipose Tissue via Antioxidant Pathway Activation

Dongsoo Seo, Yusra Ahmad, Junhyeok Lee, Jeongwoo Yoo, Wanjun Kim, Siwoo Lee, Huiyoung Kwon, Ho Jung Bae, and Younghoon Jang
(Changwon National University)

TS11T_P_23

Stage I Lung Cancer Discrimination Using Breath GC-MS VOC Profiling

Sejin Lee[1,2], Hyung-Keun Bahn[3], Ki-Hun Jeong[2], Sanghoon Jheon[3], and Dae-Sik Lee[1]
([1]Electronics and Telecommunications Research Institute, [2]Korea Advanced Institute of Science and Technology, [3]Seoul National University Bundang Hospital)

TS11T_P_24

Strategies to Improve Stability and Electrochemical Performance of PEDOT:PSS-Coated Au Neural Electrodes

Gilmo Kim, Minki Hong, Seunghun Han, and Jahyun Koo
(Korea University)

TS11T_P_25

Capacitive Sensing of Dynamic Flow for Evaluating Tubular Stiffness

Sujin Lee, Sungeun Kim, and Jahyun Koo
(Korea University)

TS11T_P_26

Construction of Capacitor and Inductor Libraries for Predictable Design of Biodegradable Circuits

Jiyeon Lee, Jaewon Kim, and Jahyun Koo
(Korea University)

NANO KOREA 2026 Conference

[TS12T_P] Poster Session 2

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4 (1F)

TS12T_P_1

Scalable Synthesis of Chloride-Mediated Copper Nanocatalysts for Selective Ethylene Production in Large-Area CO_2 Electrolyzers

Jiho Jeon and Hyung-suk Oh
(Korea Institute of Science and Technology)

TS12T_P_2

Mitigating Local Electric Field Intensification Using Porous Membranes in Ag-Cu Bilayer Electrodes for Improved CO_2 Reduction to Ethylene

Hyeon-Seok Bang[1,2], Jae-Young Choi[2], and Hyung-Suk Oh[1,2]
([1]Korea Institute of Science and Technology, [2]Sungkyunkwan University)

TS12T_P_3

Oxygen Vacancy Engineering via 1D InSeI for High-Efficiency Electrochemical CO_2-to-Formate Conversion

Min Gi Park[1,2], Jae-Young Choi[2], and Hyung-Suk Oh[1,2]
([1]Korea Institute of Science and Technology, [2]Sungkyunkwan University)

TS12T_P_4

Application of LLM AI as a Tool in In-Situ/Operando Analysis of Electrochemical CO_2 Reduction Reactions

Da Hyeon Seok, Dogyeong Kim, Hyung-Suk Oh, and Woong Hee Lee
(Korea Institute of Science and Technology)

TS12T_P_5

Unveiling the Transition of MoC Nanocluster to Mo Single-Atom Catalysts Derived from Kraft Lignin for Enhanced Oxygen Reduction Reaction

Jun Beom Park[1,2,3], Wooseok Yang[1,2], and Hyung-Suk Oh[1,2,3]
([1]Sungkyunkwan University, [2]KIST-SKKU Carbon-Neutral Research Center, [3]Korea Institute of Science and Technology)

TS12T_P_6

Strategy for Improving the Performance and Durability of Commercial CO2 Electrolysis Stacks based on a Zero-Gap Configuration

Beom Won Seo, Woong Hee Lee, and Hyung Suk Oh
(Korea Institute of Science and Technology)

TS12T_P_7

Gd-Doped Cu_2O Catalysts Enable High-Rate Selective Electrochemical CO_2-to-Ethanol Conversion via Interfacial Water Engineering

Hyunwoo Kim, Woong Hee Lee, and Hyung-Suk Oh
(Korea Institute of Science and Technology)

TS12T_P_8

Ion Environment Engineering through Cation-Free Electrolytes for Efficient CO_2 Reduction

E. D. Kim[1,2] and H. S. Oh[1]
([1]Korea Institute of Science and Technology, [2]Yonsei University)

TS12T_P_9

Investigating the Role of Dopants in Enhancing C2 Production on Cu-Based Catalysts for CO_2 Electroreduction

Dogyeong Kim[1,2], Seohyeon Ka[1,2], Seung-Ho Yu[2], Hyung-Suk Oh[1], and Woong Hee Lee[1]
([1]Korea Institute of Science and Technology, [2]Korea University)

TS12T_P_10

Dendritic Pt-Ir Nanostructures Supported on Antimony-Doped Tin Oxide for Durable and High-Performance PEM-URFC Oxygen Electrodes

Daehyeon Lee, Hyunchul Kim, and Hyung-Suk Oh
(Korea Institute of Science and Technology)

TS12T_P_11

Non-Aqueous Reactive Capture and Electrochemical Conversion of Semiconductor Process-Derived NO to N_2

Heesung Eum[1,2], Seokhyeon Cheong[1], Jiyun Kim[1], Hae-Seok Lee[2], Minserk Cheong[3], Hyunjoo Lee[1,4], and Dong Ki Lee[1,2,4,5]
([1]Korea Institute of Science and Technology, [2]Korea University, [3]Kyung Hee University, [4]UST-KIST School, [5]Yonsei University)

TS12T_P_12

Upcycling of Waste Nylon 6,6 into Nitrogen-Doped Carbon Supports for High-Performance PEMFC Catalysts

Yeonjoo Cho[1,2] and Youngjun Lee[2]
([1]Chonnam National University, [2]Korea Institute of Science and Technology)

TS12T_P_13

Sub-Ambient Temperature Direct Air Capture Using CALF-20

Jaeseo Lee[1,2] and Chun-Jae Yoo[1]
([1]Korea Institute of Science and Technology, [2]Korea University)

TS12T_P_14

Sub-100 nm Conductive Polymer Overlayer for Stable Silicon Anodes

Yumin Heo[1,2], Young Jun Lee[1], and Michael J. Lee[2]
([1]Korea Institute of Science and Technology, [2]Kyung Hee University)

TS12T_P_15

Integrated CO_2 Capture and Utilization for CO Production from Ambient Level CO_2 Using K/Al_2O_3

Kyeong-eun Kim[1,2] and Chun-Jae Yoo[2]
([1]Korea University, [2]Korea Institute of Science and Technology)

TS12T_P_16

Regulation of Bubble Dynamics Using Surfactant Additives in Bicarbonate Electrolysis

Sae In Suh[1,2], Han Sung Kim[2], Hyung-Suk Oh[1], and Woong Hee Lee[1]
([1]Korea Institute of Science and Technology, [2]Yonsei University)

TS12T_P_17

Rational Design of Hierarchically Porous N,S Co-Doped Carbon for Efficient CO_2 Capture

Choong-Hee Kim and Chansol Kim
(Korea Institute of Science and Technology)

TS12T_P_18

Lignin-Derived Carbon-Supported PtCo Intermetallic Catalysts for Proton Exchange Membrane Fuel Cells

Minjae Kwon[1,2] and Young Jun Lee[1]
([1]Korea Institute of Science and Technology, [2]Yonsei University)

TS12T_P_19

Enhancing the Acid-Stability of OER Electrocatalysts through Sb-Induced Structural Preservation

Hojin Lee, Hyung-Suk Oh, and Woong Hee Lee
(Korea Institute of Science and Technology)

TS12T_P_20

Phase-Restoration-Driven Electrochemical Recovery of Catalysts for Anion Exchange Membrane-Unitized Regenerative Fuel Cells

Man Ho Han and Woong Hee Lee
(Korea Institute of Science and Technology)

NANO KOREA 2026 Conference

[TS13T_P] Poster Session 2

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4 (1F)

TS13T_P_1

Computational Structural Modeling and Electronic Structure Analysis of a Dual Step Anion Engineering in $MnMoO_4$ for for HER: A Density Functional Theory Study

Chae-Eun Lim and Byung-Hyun Kim

(Hanyang University ERICA)

TS13T_P_2

Multi-Task Learning for Simultaneous Prediction of Key Li-ion Battery Indicators

Minjeong Gong[1], Yoonjung Choi[1], Han Mo Yang[2], Sang Bok Ma[2], and Dong-Hwa Seo[1]

([1]Korea Advanced Institute of Science and Technology, [2]SK ecoplant Co., Ltd.)

TS13T_P_3

Predictive Modeling of Silk-Mimetic Materials Using Molecular Dynamics and Machine Learning

Jeongae Kim[1,2], R. Helen Zha[2], and Yunfeng Shi[2]

([1]Korea Institute of Science and Technology, [2]Rensselaer Polytechnic Institute)

TS13T_P_4

Prediction of Ionic Conductivity in Solid Electrolytes Using Embedding Layers of Pretrained Machine-Learning Interatomic Potentials

Minjae Jang[1] and Jung-Hoon Lee[1,2]

([1]KU-KIST, [2]Korea Institute of Science and Technology)

TS13T_P_5

Digital Twin-Guided Robotic Crushing Module for Solid-Sample Preprocessing in Self-Driving Laboratories

Seongjin Bang[1,2], Daekyum Kim[2], and Sang Soo Han[1]

([1]Korea Institute of Science and Technology, [2]Korea University)

TS13T_P_6

AI-Driven Quantitative Review of Mobility-Stability Trade-off in Oxide Semiconductors

Ji Hoon Hong and Sung Beom Cho

(Ajou University)

TS13T_P_7

Opportunities and Limitations of Crystal Generative Models for Solid Electrolyte Discovery

Seungwoo Hwang[1], Jiho Lee[1], Sungwoo Kang[2], and Seungwu Han[1,3]

([1]Seoul National University, [2]Korea Institute of Science and Technology, [3]Korea Institute for Advanced Study)

TS13T_P_8

Moisture-Induced Surface Degradation Mechanism of Argyrodite Li_6PS_5Cl under Dry-Room Conditions

Yoon-Seong Kim and Dong-Hwa Seo
(Korea Advanced Institute of Science and Technolog)

TS13T_P_9

Data-Driven Discovery of High-Mobility Oxide Semiconductors

Seonhye Park, Un Hwan Lee, Bokyeong Kim, and Joonhee Kang
(Pusan National University)

TS13T_P_10

Dual-Functional Piezo-Response of Eco-Friendly Metal-Halide Toward Wearable Electronics

Dong Ho Lee[1], Lim Kyung Oh[1], Sihyeok Yang[2], Jin Woo Choi[2], and Han Seul Kim[1]
([1]Chungbuk National University, [2]Kongju National University)

NANO KOREA 2026 Conference

[TS14T_P] Poster Session 2

Date & Time	July 9(Thu.), 2026 / 10:30-12:00
Location	Exhibition Hall 4 (1F)

TS14T_P_1

Liquid-Liquid Phase Separation as a Defense Mechanism against TiO_2 Nanoparticle-Induced Photo-Stress

Hyeon-Ji Jo[1,2], Ik Hwan Kwon[2], Sang-Won Lee[1,2], Tae Geol Lee[1,2], and Se-Hwa Kim[1,2]

([1]University of Science and Technology, [2]Korea Research Institute of Standards and Science)

TS14T_P_2

Carbon Dot-Encapsulated Liposomes with Iron Ion-Based Fluorescence Quenching as a Novel Platform for Standardized Nanoliposome Integrity Assessment

Jun Hui Jeon, Jaeseok Kim, and Tae Geol Lee

(Korea Research Institute of Standards and Science)

TS14T_P_3

Ultrafast Molten-Salt Synthesis of Mn_2ZnO_4 Spinel Nanoparticles for Environmental and Electrochemical Applications

Cheyeon Park and Ha-Jin Lee

(Seoul Women's University)

TS14T_P_4

Development of 2D MXene Reference Materials and Analytical Measurement Technologies for Physical Properties

Minju Kim, Su Eon Lee, Su-Ho Cho, Hee Han, and Chi Won Ahn

(National NanoFab Center)

TS14T_P_5

Micro-Nanobubble-Driven Flotation of Microplastics: Role of Ferrate and Solution Chemistry

Jieun Lee and Sanghyun Jeong

(Pusan National University)

TS14T_P_6

Sample Preparation Optimization for Accurate Size and Number Concentration Measurement of Gold Nanoparticles Using Electrospray Differential Electrical Mobility Analysis (ES-DEMA)

Jaeseok Kim, Minjeong Kwak, and Tae Geol Lee

(Korea Research Institute of Standards and Science)

TS14T_P_7

Recovery Potential of Liver Organoids via Stress Granule-Mediated FTH-1 Regulation Following Zinc Oxide Nanoparticle Exposure

Nagyoung Kim, Jihye Hyoung, Min Beom Heo, Tae Geol Lee, and Ahruem Baek

(Korea Research Institute of Standards and Science)

TS14T_P_8

Nickel Oxide Nanoparticle-Induced Inflammatory Response May Be Due to Glucose Metabolism Dysregulation

Wonkyun Jung[1], Hee Jin Park[2], Cheolho Yoon[3], Gwang-Hee Lee[4], and Eun-Jung Park[1]
([1]Kyung Hee University, [2]Korea Institute of Toxicology, [3]Korea Basic Science Institute, [4]Institute for Advanced Engineering)

TS14T_P_9

Integrating SSbD with Nano Materials; ESG Performance and Nano-TiO_2 Application Case Study

Seong-Kwan Kim[1], Hyeon Soo Eom[1], Hee June Shin[2], Yang-won Suh[3], and Tae Hyun Yoon[4]
([1]Safety Corelab Co., Ltd., [2]Safety Assessment Solution Co., Ltd., [3]Korea Environment Institute, [4]Hanyang University)

TS14T_P_10

A Physics-Preserving U-Net Framework for Deep Denoising of Raman Spectra Retaining Vibrational Mode Information

Seungyoon Han[1], Dong-Joon Yi[1], Hyeong Chan Suh[2], and Mun Seok Jeong[1]
([1]Hanyang University, [2]University of Texas at Dallas)

TS14T_P_11

A Deep Learning Interpretation of Raman Spectra for Carbon Nanotube Quality Assessment

Dong-Joon Yi[1], Jaekak Yoo[2], Seungyoon Han[1], Yeongseo Kim[1], and Mun Seok Jeong[1]
([1]Hanyang University, [2]University of Illinois Urbana-Champaign)

TS14T_P_12

Dynamic Microfluidic Culture of Liver Organoids for Long-Term Nanoparticle Exposure Assessment

Hyeono Nam, Tae Geol Lee, and Ahruem Baek
(Korea Research Institute of Standards and Science)

TS14T_P_13

A 28 Days Inhalation Toxicity Testing of CNF (Cellulose Nanofiber) in Sprague-Dawley Rats

Seung Han Lee, Jae Hyuck Sung, Se Hyeok Park, Hye-Jin Noh, Mi-Jung Kim, Byung-gil Choi, and Kyung-Seuk Song
(Korea Conformity Laboratory)

TS14T_P_14

APIGENA: Cosmetic Ingredient Utilizing Apigenin-Loaded TDS

Bada Won[1], Jiyoung Park[2], JunHee Kim[1], Dawon Jung[1], Dabin Song[1], and Seung-chan Yang[1]
([1]Star's tech Co., Ltd., [2]Seoul National University)

TS14T_P_15

Real-Time Photoacoustic Monitoring of Silicon Biodegradation Using NIR-II Tunable Dielectric/Metal/Dielectric Nanostructures

Hee-Kyung Na
(Korea Research Institute of Standards and Science)