[MCARE 2024] Final Program

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Symposium 1. Materials for Hydrogen Fuel Production and CO2 Conversion in Carbon Neutrality

August 20 (TUE) 13:30-15:30

SP1-1	Boosting the catalytic degradation efficiency of ofloxacin via C3N4/Bi2S3 composite photocatalyst	**Manasi Murmu**	Chonnam National University
SP1-2	Local operando analysis of CO2 reduction reaction on polycrystalline gold surface	**Yunwoo Nam**	Yonsei University
SP1-3	Harnessing Photosynthetic Currents from Marine Phytoplankton for Hydrogen Mass Production	**Geonwoo Park**	Yonsei University
SP1-4	Effects of electrolyte modification with Nitrogen-included additives on CO2 reduction reaction	**Sung-Eun Cho**	Yonsei University
SP1-5	Solar Light-Driven Photocatalytic Generation of H2O2 Using Anthraquinone-TiO2 Complex via Ligand-to-Metal Charge Transfer Process	**Bada Lee**	Sungshin Women's University
SP1-6	Unassisted photoelectrochemical H2O2 production with in situ glycerol valorization using α-Fe2O3	**Sarang Kim**	Ulsan National Institute of Science and Technology (UNIST)
SP1-7	Advantage of N Doping ZnO Electrocatalyst Towards Electrochemical CO2 Reduction	**Rohini Kanase**	Chonnam National University
SP1-8	Highly Selective Electrochemical Conversion of CO2 to CO (> 88%) by Adjustable Electrodeposition: Ex-situ vs. In-situ Mode in Zn/ZnO Electrocatalyst	**Rohini Subhash Kanase**	Chonnam National University
SP1-9	Integrating a catalyst effectively increases photoanode efficiency and stability	**Maheswari Arunachalam**	Chonnam National University
SP1-10	Boosting Electrochemical CO2 Conversion and Local CO Concentration by Au-Cu2O Tandem Catalyst with Precise Control of Au Nanoparticles	**Suneon Wang**	Korea Advanced Institute of Science and Technology (KAIST)
SP1-11	Impact of Nitrogen/Carbon Ratio in Ligands on Nickel Single-Atom Catalysts for CO2 Electroreduction	**Hyeonuk Choi**	Korea Advanced Institute of Science and Technology (KAIST)
SP1-12	Preparation of N-doping controlled carbon derived from crab shell for CO2 adsorption.	**Jiyull Kim**	Konkuk University
SP1-13	Enhanced hydrogen evolution performance through atomically dispersed rhodium within layered double hydroxides under acidic conditions	**Youngeun Kim**	Sungkyunkwan University
SP1-14	Cadmium Sulfide/Selenide (CdS/CdSe) Quantum Dots Prepared by Successive Ionic Layer Adsorption and Reaction (SILAR) for Efficient CdS/CdSe-Sensitized Photoelectrochemical Cells	**Jinsu Kim**	Jeonbuk National University
SP1-15	Highly efficient Ni-N-C catalyst derived from MOF@MOF structure for CO2 electroreduction	**Chul Hyun Jun**	Sungkyunkwan University
SP1-16	Design of Potassium-Doped Upconversion Microrod/P-doped g-C3N4 Photoelectrodes for Enhanced Photoelectrochemical Water Splitting Across the Extended Solar Spectrum from UV to Near-Infrared	**Hyeon Jung Yu**	Chonnam National university
SP1-17	Electrochemically Intercalated MoS2 Electrocatalyst for Improved Hydrogen Evolution Reaction.	**Jyoti Ganapati BADIGER**	Chonnam National University
SP1-18	Titanium Nitride-Supported Iridium-Nickel Alloys as Highly Active Electrocatalysts for Hydrogen Evolution Reaction	**TOAN MINH PHAM**	Kyung Hee University
SP1-19	Hydrogen Production from Co-gasification of Biomass Palm Oil By-products and Coal	**Ha-Na Jang**	Yonsei University
SP1-20	The Development of a p-type Photocathode for Solar Fuel Conversion	**Suzan Abdelfattah Sayed**	Chonnam National University
SP1-21	Influence of micro-structural and operational parameters on the long-term durability of La0.6Sr0.4CoO3-δ cathode	**Amjad Hussain**	Korea Institute of Energy Research (KIER)
SP1-22	10% Solar-to-Hydrogen Conversion via Organic Light Absorbers with Ni-Heazlewoodite Electrocatalysts	**Jaemin Park**	Sungkyunkwan University

SP1-23	Investigation of Surface Engineering for Nickel-based Catalysts in Alkaline Hydrogen Evolution Reaction	**Dahee Park**	Korea Institute of Materials Science (KIMS)
SP1-24	Enhanced local CO2 concentration boosts highly selective photocatalytic CO2 conversion	**Woo Jin Byun**	Ulsan National Institute of Science and Technology (UNIST)
SP1-25	Enhanced Stability and Performance in Hydrogen Production via Water Electrolysis Using Hydrogel-Coated Electrodes	**MinJae Kim**	Sungkyunkwan University
SP1-26	Developing a bipolar membrane-embedded carbon-gradient reverse electrodialysis (CG-RED)	**Donghyeon Lee**	Kangwon National University
SP1-27	Electrochemical compressor for hydrogen separation and compression from exhausted gas mixture	**Hyemin Jung**	Kangwon National University
SP1-28	CoxRe1-xS2 nanosheets grown on MXene as an efficient bifunctional electrocatalysts for overall water splitting	**Dong Jin Lee**	Dongguk University
SP1-29	Designing Quinone Molecules for Oxygen-Stable Electrochemical Atmospheric CO2 Capture	**Haein Cho**	Sungkyunkwan University
SP1-30	Sustainable Hydrogen Production from Lignin without CO2 Emission	**Jieun Park**	Ewha Womans University
SP1-31	Ni-Co LDH@ BiPO4 foam as a superior photocatalyst for hydrogen evolution	**Mahboobeh Zargazi**	University of Ulsan
SP1-32	Enhancing the catalytic activity of a perovskite-based electrode via Metal catalytic additives for high-temperature CO2 electrolysis	**Sang Won Lee**	Korea Institute of Ceramic Engineering and Technology (KICET)
SP1-33	High-performance photoelectrochemical cells with MoS2 nanoflakes photoanode on 3D porous carbon spun fabric	**Dong Ick Son**	Korea Institute of Science and Technology (KIST)
SP1-34	Synthesis of single atom and atomic cluster catalysts by chemical vapor deposition technique	**Heeyeon Kim**	Korea Institute of Energy Research (KIER)
SP1-35	Graphitic Carbon Nitride-Anchored MoS2 Nanosheets for Enhanced Bifunctional Water Splitting	**Sankar Sekar**	Dongguk University
SP1-36	Enhanced Bifunctional Water Electrolysis Activities of Activated Carbon-Decorated Trimetallic Alloys	**Anshika Gupta**	Dongguk University
SP1-37	Enhanced Bifunctional Water Splitting Performance of NiFe LDH Microspheres	**Atsaya Shanmugam**	Dongguk University
SP1-38	The effect of organic addtive on electrochemical fabrication of mico-structured electrode for reverse electrodialysis	**EUNJI KWON**	Kangwon National University

Symposium 2. Advanced Materials for Energy Storage

August 22 (THU) 13:30-15:30

SP2-1	Nanoengineering of RGO/Bi2S3 negatrode through atomic layer deposition of TiO2 for high performance supercapattery applications	**Amarnath Thangavel Sivagurunathan**	Chonnam National University
SP2-2	Trilayer polybenzimidazole membrane assembly for highly efficient vanadium redox flow batteries	**Trung Tuyen Bui**	Korea Institute of Science and Technology (KIST)
SP2-3	Redox-active polycaprolactone for an electrode in an aqueous organic battery	**Sangho Cho**	Korea Institute of Science and Technology (KIST)
SP2-4	Layered crystal structure Li1 αNi1 x yMnxCoyO2 (0.1 ≤ x+y ≤ 0.5) manufactured from various disused lithium secondary batteries using an automated and integrated recycling system as well as its battery performances	**YoungWoon KIM**	Chungnam National University
SP2-5	Exploration of New Ir-Ni based Catalysts for Promoting Reactivity of Oxygen Evolution Reaction in PEM Water Electrolysis	**Seongjun Kim**	Seoul National University of Science and Technology
SP2-6	Electrochemical and electrochromic properties of all-solid-state thin film battery	**Kwanyoung Oh**	Korea Institute of Science and Technology (KIST)
SP2-7	Enhancement of Lithium-Air Battery Performance through LiOH Formation and SECM Analysis.	**Haesung OH**	Yonsei University
SP2-8	Electrochemical performance evaluation according to changes in activation conditions of carboxyl-doped graphene nanoplatelets	**Ji-Yeoung Choi**	Wonkwang University
SP2-9	Ultra-thin Sputtered RuO2 Recombination Layers for High-Efficiency All-Perovskite Tandem Solar Cells	**Pil Ju Youn**	Seoul National University of Science and Technology
SP2-10	Enhancing the Performance of Sodium-Ion Battery Anode Through the Integration of Graphene Oxide Quantum Dots	**Shahd Boud**	Jeonbuk National University
SP2-11	Electrochemical Properties of Core-shell Fe-Ni-Co-S Derived from Prussian Blue Analogue as Electrode for Supercapacitors	**Meiying Cui**	Pusan National University
SP2-12	Enhanced Electrochemical Characteristics of NiMn-Layered Double Hydroxide Modified NiCo Metal-Organic Frameworks Composite for Supercapacitor Electrodes	**Meiying Pei**	Pusan National University
SP2-13	Entrapment of biomolecules in MOF-based xerogel monoliths for electrochemical hydrogen evolution	**QUOC HAO NGUYEN**	Kyung Hee University
SP2-14	Shape-controlled binary phase of manganese oxide for high-capacity with durable anode for lithium-ion batteries	**Hyemin Kim**	Korea Maritime and Ocean University
SP2-15	Investigating the Degradation Mechanism of Thick Graphite Electrodes via Electrochemical Impedance Spectroscopy	**Jinsoo Yoon**	Sungkyunkwan University
SP2-16	Sustainable Utilization of Cellulose-Rich Cornhusk for Activated Carbon for High-Performance Sodium-Ion Capacitor	**Jeong Geun Kim**	Chonnam National University
SP2-17	Microstructure and mechanical properties of the Al-B Alloy with Rare Earth and Fe Addition	**HyoSang Yoo**	Korea Institute of Industrial Technology (KITECH)
SP2-18	A Novel Separator Coated with Non-Conductive Polar Mesoporous Carbonaceous Materials for Extended Cycle Life and Superior Performance of Lithium-Sulfur Batteries	**Je Yeon Kim**	Korea University of Technology and Education (KOREATECH)
SP2-19	Shape and Property Effects of Si-Based Anode Materials on the Electrochemical Performance of Li-ion Batteries	**Yeon-Jin Cha**	Korea Electronics Technology Institute (KETI)
SP2-20	Clarifying the Correlation between Cu Surface Properties and Li Deposition	**Hae-Ri Yang**	Korea Electronics Technology Institute (KETI)
SP2-21	An Innovative Dual-Layer Sulfur Cathode with Sulfur-Infused Nonconductive Mesoporous Carbonaceous Material and Free-Standing Carbon Nanotube Layers for Advanced Li-S Batteries	**Ji Yang Lim**	Korea University of Technology and Education (KOREATECH)
SP2-22	Argyrodite Solid Electrolyte with Enhanced Air-stability for All-Solid-State Batteries	**You-Jin Lee**	Korea Electrotechnology Research Institute (KERI)
SP2-23	A Survey on Utilizing Second-Life EV Batteries: Economic Effects and Applications	**Jeongeon Lee**	Seoul National University of Science and Technology

SP2-24	Guiding Electrodeposition for Pre-passivation of Li-Metal Anodes: Enabling Extended Stability in Practical Li-Metal Batteries	**Jiyeon Seo**	Daegu Gyeongbuk Institute of Science and Technology (DGIST)
SP2-25	Enhancing methane adsorption performance through carbonized AC-MOF core-shell structure	**Yeonbhin Kim**	Korea Institute of Materials Science (KIMS)
SP2-26	Innovative Bi-Layer Coatings for Zn Anodes: A Path to Dendrite Suppression and Anti-Corrosion	**Jaewoong Han**	Daegu Gyeongbuk Institute of Science and Technology (DGIST)
SP2-27	Enhanced Ionic Transport in Colloidal Electrolytes via Nanospinbar for Dendrite-Free Electrodeposition	**Minhong Lim**	Daegu Gyeongbuk Institute of Science and Technology (DGIST)
SP2-28	Fabrication of Highly Conductive Single-Walled Carbon Nanotube Materials for Electrode Application	**Joowon Lee**	Ewha Womans University
SP2-29	One-Pot Formation of Nanostructured MnO2-Carbon Composite for High Capacity and Durable Aqueous Zn-ion Batteries	**Jin-young Choi**	Korea Institute of Industrial Technology (KITECH)
SP2-30	Formation of Ultra-thin Self-assembled Monolayer on the Zinc Metal Anode for Durable Aqueous Zinc-ion Batteries	**Jin-young Choi**	Korea Institute of Industrial Technology (KITECH)
SP2-31	Enhancing Lithium-Sulfur Battery Performance through a Novel Microwave-Assisted Synthesis of Sulfur-MWCNT Composites	**Haeyoung Choi**	Korea Electrotechnology Research Institute (KERI)
SP2-32	High rate performance of Carbon Ion Implanted Surface Modification for High-voltage LiNi0.5Mn1.5O4 Cathodes	**Jin-young Choi**	Korea Institute of Industrial Technology (KITECH)
SP2-33	Impact of Mixed-nitrogen Anions Arrangement on the Lithium Ions Transport in the High-voltage Spinel Cathodes	**Jin-young Choi**	Korea Institute of Industrial Technology (KITECH)
SP2-34	Fabrication of MOF Decorated Fabric for Gas Adsorption	**SeonYeong Kang**	Korea Institute of Materials Science (KIMS)
SP2-35	Valorization of Waste Tire via Microwave Heating: Carbon Anodes Derived from Waste Tire for Sodium-Ion Battery	**Yongjoon Yang**	Myongji University
SP2-36	Facile Preparation of Sulfur-Doped Carbon Anodes from Rubber Scraps for Lithium-ion Batteries	**Heewon Jin**	Myongji University
SP2-37	Effects of Residual Solvent in Solid-Electrolyte Membrane on All-Solid-State Batteries	**Hyeonjin Cho**	University of Science and Technology (UST), Korea Electrotechnology Research Institue (KERI)
SP2-38	Ex-situ solid-state 7Li NMR analysis of lithium metal electrodes in lithium metal batteries	**Sunha Kim**	Korea Basic Science Institute
SP2-39	Sulfur-Doped Carbon Anodes for Lithium Ion Batteries from Polyacrylonitrile via Sulfonation Induced Stabilization	**Hyeonji Jang**	Kyung Hee University
SP2-40	Removal of residual silica and generation of nanopores on industrial waste silicon using ammonium fluoride, and its application to lithium-ion battery anodes	**Min Ji Kim**	Korea Institute of Ceramic Engineering and Technology (KICET)
SP2-41	Facile microwave synthesis of P-doped carbon as catalyst electrodes for vanadium redox flow batteries	**Sieun Jeon**	Korea National University of Transportation
SP2-42	Utilizing urea and citric acid to functionalize the surface of carbon nanotubes with imide groups for vanadium redox flow battery application	**Heeyeon An**	Korea National University of Transportation
SP2-43	New Electrodeposited Thin Film of NiAl–LDH@ZIF-67(Co) Heterostructure with Significantly Enhanced OER Electrocatalysis	**MOHAMMAD CHAHKANDI**	University of Ulsan
SP2-44	Regulating the Uniform Deposition of Lithium-Ions on Lithium Metal Anode using MWCNT Fabrics	**YoungWook Cho**	Korea Electronics Technology Institute (KETI)
SP2-45	Revitalizing Lithium Metal Anodes via Mechanothermal-Milling: Stripping Native Passivation Layers	**Sanghyeon Park**	Daegu Gyeongbuk Institute of Science and Technology (DGIST)
SP2-46	Modified interlayer as a polysulfide inhibitor for Li-S batteries	**Doohun Kim**	Korea Electrotechnology Research Institute (KERI)
SP2-47	Improving Cycling Performance of Si Microparticles anode with Metal Fluoride Coating	**Woosuk Kang**	Pohang University of Science and Technology (POSTECH)

SP2-48	Alternative chelating agent of co-precipitation for NCM precursor : A study on ammonia free co-precipitation.	**SHIN PARK**	Pohang University of Science and Technology (POSTECH)
SP2-49	Electrochemical Quantification of Li2O in Li2S Compound Utilizing Lithium-Sulfur Battery Operaction Principle	**Yun Ho Jeong**	Pohang University of Science and Technology (POSTECH)
SP2-50	Synthesis of Nickel Nanotube Composites by Electrospinning and Electroless Deposition	**Areum Kim**	CALTECH
SP2-51	Improving the performance of 1-D Electrospinning nanofibers used in anodes, cathodes, and separators in lithium-ion batteries.	**JinUk Yoo**	Chung-Ang University
SP2-52	Optimized Performance in All-Solid-State Lithium-Sulfur Batteries Achieved via the Mechano-fusion Process	**Jun young Heo**	Korea Electrotechnology Research Institute (KERI)
SP2-53	A Study on Enhancing the Performance of Aqueous Zinc Ion Batteries Via Protective Layers on Separator	**Shin jeong LEE**	Korea Electrotechnology Research Institute (KERI)
SP2-54	Interface Enhancement for SiOx Anodes in All-Solid-State Battery Using Mechano-fusion Process	**Junghwan Sung**	Korea Electrotechnology Research Institute (KERI)
SP2-55	Infiltration-driven performance enhancement of poly-crystalline cathodes in all-solid-state batteries	**Jun-Woo Park**	Korea Electrotechnology Research Institute (KERI)
SP2-56	Facile Synthesis of ZnS@CNT interconnected with carbon frameworks derived from ZIF-8 as high-performance anode for lithium-ion batteries	**Hosung Hwang**	Korea Institute of Science and Technology (KIST)
SP2-57	Studies on Redox Polymer as Cathode Active Material for Seawater Batteries	**Hyebin Jeong**	Pohang University of Science and Technology (POSTECH)
SP2-58	Enhanced N/P ratio and dendrite suppression of Zn powder-based anode for high-performance aqueous zinc-ion battery	**Jinhyeong Yoon**	Hanyang University
SP2-59	Mitigating side reaction of Zn anode by a coating of N-doped porous graphene layer for aqueous zinc-ion battery application	**Kangmin Lee**	Hanyang University
SP2-60	Enhancing performance All-Solid-State Batteries (ASSBs) Through Advanced Cathode Electrode Design	**Dongjin SIM**	Korea Electrotechnology Research Institue (KERI)
SP2-61	Activated Carbon-Decorated FeTiO3 Nanosheets as an Anodic Material for High-Performance Sodium-Ion Battery	**Youngmin Lee**	Dongguk University
SP2-62	Synthesis of soft carbon from non-graphitizable binder pitches by catalytic graphitization for an anode in lithium-ion battery	**Sungho Lee**	Korea Institute of Science and Technology (KIST)
SP2-63	Spherical superstructure of iron oxide/carbon nanorods as high-performance anode materials for lithium ion batteries	**Jongyoon Park**	Ajou University
SP2-64	Highly active-material-concentrated cathodes of nickel and cobalt-free cation-disordered rock-salts for Li-ion batteries	**Dong-Hwa Seo**	Korea Advanced Institute of Science and Technology (KAIST)
SP2-65	Physisorption-based MOF containing Tank with Enhanced Dormancy Compared to LH2 Tank	**Hyunchul Oh**	Ulsan National Institute of Science and Technology (UNIST)
SP2-66	Facile synthesis of 2D MXene and Ni-Co phosphide heterostructures toward high performance asymmetric supercapacitor applications	**Erdenebayar Baasanjav**	Chungbuk National University
SP2-67	Laser induced Nb2C MXene/rGO hybrid for high performance all-solid-state microsupercapacitors	**Shridhar Hegde**	Chungbuk National University
SP2-68	High-performance lithium-ion battery anode material based on graphene nanosheet-titanium dioxide nanocomposite	**Hiesang Sohn**	Kwangwoon University

Symposium 3. Advanced Materials for Next Generation Photovoltaics

August 22 (THU) 13:30-15:30

SP3-1	Multi-Functional Passivation for High-Performance Hybrid phototransistor utilizing ZnON/Perovskite Heterostructure	**Kwang-Ro Yun**	Korea University
SP3-2	Energy yield comparison of commercialized TOPCON cells	**Sungho Hwang**	Korea University
SP3-3	Reliability study on no-gap module with encapsulation material research	**Dongchul Suh**	Hoseo University
SP3-4	Enhancing performance of two-step fabricated perovskite solar cells with sulfonium triflate-based additive	**HyunJun Lee**	Korea Advanced Institute of Science and Technology (KAIST)
SP3-5	Effects of primary and secondary mixed fluors on dye-sensitized solar cells	**Hayun Jeong**	Jeju National University
SP3-6	Study on the growth behavior of Sb2Se3 thin films on Mo-foils by co-evaporation and their application to flexible solar cells	**Shi-Joon Sung**	Daegu Gyeongbuk Institute of Science and Technology (DGIST)
SP3-7	Sb2Se3 thin films prepared by vapor transport deposition process and their application to thin film solar cells	**Jaebaek Lee**	Daegu Gyeongbuk Institute of Science and Technology (DGIST)
SP3-8	Tailoring Cation Disorder in Cu3BiS3 Films: Insights from Dithiocarbamate Solution Processing	**Jisu Jung**	Sungkyunkwan University
SP3-9	Eco-friendly Perovskite Solar Cells with a Wide Processing Window through Vacuum-assisted Method	**Seongjun Park**	Korea Advanced Institute of Science and Technology (KAIST)
SP3-10	Development of Solution Process for Synthesizing BaZrS3 Thin Film at Moderate Temperature	**Jaewook Lee**	Sungkyunkwan University
SP3-11	Functionalized Polymer-Capped SnO2 Nanoparticle Electron Transport Layer for Efficient Perovskite Solar Cells	**Nayoon Kwon**	Korea Advanced Institute of Science and Technology (KAIST)
SP3-12	Chemically Driven Cation Disordering in AgBiS2 Thin Film with Improving of Light Absorption Properties	**Neul Ha**	Sungkyunkwan University
SP3-13	Optimization of Optical Performance in AgBiS2 Thin Films via Cation Disorder and Morphology Control using DMSO-Based Solution Process	**Dayeon Yi**	Sungkyunkwan University
SP3-14	Enhancement of Solar Cell Performance through Introduction of Metal Oxides on the Electron Transport Layer	**Taewoong Son**	Korea Advanced Institute of Science and Technology (KAIST)
SP3-15	Understanding Charge Carrier Properties via Electric Method	**Siwon YUN**	Chungnam National University
SP3-16	Photo-stable Perovskite Solar Cells Enabled with Efficient Anti-Solvent Additive Method	**Wonjong Lee**	Chungnam National University
SP3-17	Effective Surface Passivation using Mixed Cation System for Stable Perovskite Solar Cells	**Jaehee Lee**	Korea Advanced Institute of Science and Technology (KAIST)
SP3-18	Robot-arm based automated system for developing wide bandgap perovskite solar cells	**Sooah Kim**	Korea Research Institute of Chemical Technology (KRICT)
SP3-19	Optimizing semi-transparent perovskite solar cell performance through additive control	**Suji Moon**	Korea Research Institute of Chemical Technology (KRICT)
SP3-20	High-quality α-phase FAPbI3 perovskite via eco-friendly solvent purification	**Soo bin Yoo**	Korea Research Institute of Chemical Technology (KRICT)
SP3-21	A holistic approach for highly efficient n-i-p perovskite solar cells	**Kyungmin Lee**	Korea Research Institute of Chemical Technology (KRICT)
SP3-22	Understanding the Lead Halide Perovskite Single Crystal via Photoluminescence Quantum Efficiency	**HYEJI HAN**	Chungnam National University

Symposium 4. Advanced Materials for Fuel Cells and Electrolysis

August 21 (WED) 15:00-17:00

SP4-1	Highly active hexagonal perovskite air-electrode materials for proton ceramic electrolysis cells	**Jun-Young Park**	Sejong University
SP4-2	Stability-Preserving Ir Oxide on Sb-doped Tin Oxide Support for Comparable Proton-Exchange Membrane Water Electrolysis	**Hye Young Jung**	Korea University
SP4-3	In situ Mechanistic Study of Acidic Oxygen Evolution Reaction on Iridium Oxides via Surface Interrogation Scanning Electrochemical Microscopy	**Yeonsu Kim**	Yonsei University
SP4-4	Highly Conductive Quaternary Ammonium-Free Membranes Showing Stable Performance for Water Electrolysis in 1 M KOH	**Asridin Dayan**	Korea Institute of Science and Technology (KIST)
SP4-5	Alloy Electrocatalysts for Alkaline Hydrogen Evolution with Enlarged Surface Area Using Nanowire Template	**Kyeong-Rim Yeo**	Chung-Ang University
SP4-6	Enhancing the durability of catalyst support for oxygen reduction reaction by surface modification of highly crystalline carbon	**Gyumi Kang**	Seoul National University of Science and Technology
SP4-7	Synergetic Interaction of Crystalline Carbon and Metal Oxide for High Durability ORR Catalyst	**Seung Min Woo**	Seoul National University of Science and Technology
SP4-8	Improved Alkaline and Saline Water Oxidation by "Doping−interfacing" of NiFe-Layered Double Hydroxide	**Lawrence Yoon Suk Lee**	The Hong Kong Polytechnic University
SP4-9	Electrochemical Synthesis of Single Crystal Transition Metal Phosphides via Electrode Surface Heating	**Hyokyum Ahn**	Yonsei University
SP4-10	CeO2 Atomic layer deposition of surface engineering of LSCF reversible solid oxide cell air electrode	**Sung Eun Jo**	Pohang University of Science and Technology (POSTECH)
SP4-11	Effects of Chloride Ions and PEG in the Electrodeposition of electrolytic copper foil	**Jun-Seo Yoon**	Jeonbuk National University
SP4-12	Study on the applicability of molten carbonate reversible cells for carbon capture	**Emilio Audasso**	Korea Institute of Science and Technology (KIST)
SP4-13	Au-incorporated CoFe colloidal nanoparticles for highly efficient OER catalyst.	**Gyuhyeon Kim**	Chung-Ang University
SP4-14	Composition-Dependent Electrocatalytic Activities of Colloidal Nickel Phosphide Nanoparticles: From Ni12P5 to NiP2.	**Yeongbin Lee**	Chung-Ang University
SP4-15	Electrodeposition of Ruthenium Cobalt as Bifunctional Electrocatalysts for Water Splitting in Acidic Media	**Boeun An**	Chung-Ang University
SP4-16	Synthesis and Performance Evaluation of Electrocatalysts Based on Recycled Lithium-ion Battery Powder for Water Electrolysis	**Hui il Nam**	Korea Institute of Industrial Technology (KITECH)
SP4-17	Development of Ruthenium-Platinum Single Crystalline Alloy Nanoparticle Catalysts via Selective Working Electrode Surface Temperature Control for Energy Conversion	**Taeyeon Kang**	Yonsei University
SP4-18	Coating effects of Sm0.2Ce0.78M0.02O2-δ (M=Ni, Co, Pd) layer on Ni/YSZ anode for Internal Dry Reforming in Solid Oxide Fuel Cells	**Jun Ho Kim**	Chonnam National University
SP4-19	Explosive Reconstruction of Active Species based on CoxN@NC for boosting Oxygen Evolution Reaction	**Hyung Wook Choi**	Sungkyunkwan University
SP4-20	Enhanced catalytic activity and durability for overall water splitting of Ni3Fe alloy by designing N-doped carbon encapsulation	**Uiyoung Lee**	Sungkyunkwan University
SP4-21	Boosting water dissociation and hydrogen production via pyrrolic-N-modified Ni metal on N-doped carbon nanoplate	**Jiwon Kim**	Sungkyunkwan University
SP4-22	Synthesis of lignin derived porous carbon sphere and noble metal hybrid material via spray drying method as oxygen reduction reaction electrocatalysts	**Hyuck Gu Choi**	Sungkyunkwan University
SP4-23	A study on NiFe Nanosheets on Iron Substrates for Enhanced Oxygen Evolution Reaction	**Byeongchan Choi**	Korea Institute of Industrial Technology (KITECH)

SP4-24	Efficient Fabrication of Cermet Electrodes and Functional Layer for Reversible Solid Oxide Cells via Co-Sputtering	**Sanghoon Lee**	University of California San Diego
SP4-25	Shape-Controlled Solvothermal Reflux Synthesis of ZnCo2O4 nanostructures for Oxygen Evolution Reaction	**Deukhyeon Nam**	Korea Institute of Industrial Technology (KITECH), Korea University
SP4-26	Epitaxial Growth of Oriented CoO Films by Sputtering Depositions	**Joon-Ho Kang**	Jeonbuk National University
SP4-27	Electrical, Optical, and Structural Phase Transitions of Ion-implanted VO2	**Young-Woo Park**	Jeonbuk National University
SP4-28	Porous Film-type Electrode Applying Polyaniline as Conductive Binder for Reducing Internal Resistance in an Alkaline Water Electrolysis Stack	**Suhyun Kim**	Korea Institute of Industrial Technology (KITECH)
SP4-29	Design and unveiling the role of metal imidazolium ionic liquids in MOF derived Co-NC catalysts: Boosting ORR efficiency for hydrogen fuel cell application.	**Muthukumar Perumalsamy**	Jeju National University
SP4-30	Interpenetrating network of sulfonated polyvinylidene fluoride and 3-amino benzene sulfonic acid as proton exchange membrane for water electrolyzer	**Bee Lyong Yang**	Kumoh National Institute of Technology
SP4-31	Upgraded recycling of waste heat pack towards electrocatalyst for oxygen reduction reaction	**Keyru Serbara Bejigo**	Jeju National University
SP4-32	Electrochemical Evaluation of Cathode Functional Layer Fabricated by Thin Film Process	**Jiwoong Jeon**	Dankook University
SP4-33	Fabrication and characterization of nano-porous perovskite electrodes by wet-etching and sputter technique	**Hojun Yoo**	Dankook University
SP4-34	Effects of deposition conditions of GDC functional layer on electrochemical characteristics of LT-RSOCs	**Geon hyeop Kim**	Dankook University
SP4-35	Stable SWCNT-TiO2 hybrid catalyst with high-density SWCNT networks for hydrogen evolution reaction	**Minji Park**	Korea Institute of Science and Technology (KIST)
SP4-36	Urea-Persulfate Fuel Cell Combined with Forward Osmosis for a Continuous Power and Water Production from Urine	**Jiseon Kim**	Pohang University of Science and Technology (POSTECH)
SP4-37	Atomic-Level Insights into Biomimetic Fe/Ni Bimetallic Catalysts on Carbon Nitrides for O2 Electrocatalysis	**Yunseok Shin**	Inha University
SP4-38	Porous Bimetallic Mesocrystals within Carbon Framework as high-performance bifunctional catalyst	**Hiesang Sohn**	Kwangwoon University

Symposium 5. Frontiers of Functional Nanomaterials for Eco-friendly Devices Applications

August 21 (WED) 15:00-17:00

SP5-1	An Experimental and Computational Study on the CO2 Sorption in a 3-D Microporous Ca-based MOF	**Yong Sun Won**	Pukyong National University
SP5-2	Low-consumption of charges with high-efficiency room-temperature dried Prussian blue by salicylate additives	**Jisu Han**	Electronic and Telecommunication Research Institute
SP5-3	Oxytetracycline decomposition characteristics of terbium and copper co-doped TiO2 prepared by liquid phase plasma method	**Chan-Seo You**	Sunchon National University
SP5-4	High-performance interfacial water evaporation of black TiO2-x with high-concentration bulk oxygen vacancies	**Myeongjun Ji**	Seoul National University of Science and Technology
SP5-5	Pore distribution and carrier dynamics in nano-porous GaN	**Kwangwook Park**	Jeonbuk National University
SP5-6	Van der Waals Epitaxial Grown Ⅲ-N Nanorods/ZnSnN2 Heterojunction-Based Photodiodes	**JeongHyeon Kim**	Jeonbuk National University
SP5-7	Nanoporous Pt films formed by oblique angle deposition: in-plane structural and electronic anisotropy	**Daeju Kim**	Jeonbuk National University
SP5-8	Fluorescent Silica Nanoparticles Prepared with Copolymer Templates and Organic Chromophores	**Eun-Bum Cho**	Seoul National University of Science and Technology
SP5-9	Enhancing Thermoelectric Standardization: Exploring Durable and Reproducible Materials	**EunA Koo**	Korea Institute of Energy Research (KIER)
SP5-10	Selective removal of Bromide Ions present in a solution containing Chloride Ions using Zr-based Metal-Organic Frameworks	**WooYeon Moon**	Sookmyung Womens University
SP5-11	Polycaprolactone-based dielectric layers for transient electronics: Self-healing, degradable, and high performance in ZnO field-effect transistors	**Sangho Cho**	Korea Institute of Science and Technology (KIST)
SP5-12	Bi-Sb-Te/PEDOT:PSS hybrid thermoelectric fibers for thermoelectric textile devices	**Seungwoo Han**	Korea Institute of Machinery and Materials (KIMM)
SP5-13	Study on the formation of high conductivity electrodes for low-temperature sintering by spray pyrolysis process	**Yuchan Kim**	Korea Institute of Materials Science (KIMS)
SP5-14	Temperature dependent growth of GaN layer on α-phase retained Ga2O3 template	**Gyunseo Kim**	Kumoh National Institute of Technology
SP5-15	AlGaN nanowires on ITO-coated glass substrate as a electron transport layer	**Dasom Jeong**	Kumoh National Institute of Technology
SP5-16	GaN nanowires induced by thin AlN interlayer on Si (100)	**Jongwoo Kim**	Kumoh National Institute of Technology (KIT)
SP5-17	GaN nanowires on fused silica glass using graphene as an interlayer	**Bumku LEE**	Kumoh National Institute of Technology
SP5-18	Catalytic performance of a novel SCR catalyst based on MIL-125(Ti)-derived TiO2@C support for low-temperature NH3-SCR in ammonia-fueled ships	**Hyejin Kim**	Korea Institute of Industrial Technology (KITECH), Pusan National University
SP5-19	Preparation of amine-grafted zeolites with weak acidic sites for pipeline gas pre-treatment using PSA	**Hyeoksang Ryu**	Korea Institute of Industrial Technology (KITECH)
SP5-20	Mo2C-Capped Carbon Nanotube Membranes for EUV Lithography	**Su Min Lee**	Korea Electronics Technology Institute (KETI)
SP5-21	Selective Optical Detection of Ethylene Using Liquid Crystals	**Seoyeon Park**	Pohang University of Science and Technology (POSTECH)
SP5-22	The Development of Cool Paint for Increasing the Performance of Heat Insulation on Material Surfaces	**Eunseok Woo**	eabios
SP5-23	High aspect ratio etch profile simulation for next-generation semiconductor process	**Jaehyeong Park**	Jeonbuk National University

SP5-24	Study on surface functionalization for highly sensitive non-enzymatic diquat pesticide detection	**Mehtab Muhammad**	Jeonbuk National University
SP5-25	Synergistic Catalytic Effects of MoS2 and Carbon Nanomaterial Composite	**Eunjin Choi**	Korea Institute of Science and Technology (KIST)
SP5-26	Poly(Ethylene Glycol)/Nanocellulose Separator with High Porosity for High Performance Lithium-Ion Batteries	**Youngsang Ko**	Kyung Hee University
SP5-27	Plasma Electron-Assisted Approach to Atomically Precise Layer-by-Layer Etching of Two-Dimensional Materials	**Yunjo Jeong**	Korea Institute of Science and Technology (KIST)
SP5-28	Interfacial characteristics of Cu/TiW/ITO electrode under damp heat	**Jae-Seong Jeong**	Korea Electronics Technology Institute (KETI)
SP5-29	Construction of mixed CuBi oxide from LDH precursor for photocatalytic degradation of TCH by activated persulfate under visible light irradiation	**Alaa Magdy Saad**	Yeungnam University
SP5-30	Ozone generator by water oxidation anode in a membrane electrode assembly for drinking water treatment	**Jinseo Lee**	Pohang University of Science and Technology (POSTECH)
SP5-31	Composite Electrocatalysts with Magnéli Ti4O7 and Sb-doped SnO2 for Mineralization of Organic Pollutants in Wastewater	**Doyeon Kim**	Pohang University of Science and Technology (POSTECH)
SP5-32	Ag NW-graphene hybrid based flexible electrode: Enhanced mechano-electric property of the hybrid device	**Hiesang Sohn**	Kwangwoon University
SP5-33	MoS2/PEDOT: PSS Composite-based 3D Porous Hydrogel Patches for Sweat Analysis	**Suraj Balasaheb Shinde**	Jeonbuk National University

Symposium 6. Electromechanical Coupling Materials for Nanogenerators and Self-powered Electronics

August 21 (WED) 15:00-17:00

SP6-1	Improved polarization of metal-ferroelectric-metal capacitors deposited by Rf sputtering of Al2O3-doped HfO2 on epitaxial ITO films on yttria-stabilized zirconia (100) substrate.	**IN PYO HONG**	Gachon University
SP6-2	Flexible PDMS/ZnS: Cu composite self-powered applications using mechanoluminescence and triboelectricity	**Sugato Hajra**	Daegu Gyeongbuk Institute of Science and Technology (DGIST)
SP6-3	Enhanced Performance of Flexible Piezoelectric Composites for Energy Harvesting via Gamma-Ray Irradiation	**Gyoung Ja Lee**	Korea Atomic Energy Research Institute (KAERI)
SP6-4	Study on the Output Performance of an Energy Harvester Based on Lead-Free (Ba,Sr)TiO3-BaTiO3 Piezoelectric Nanoparticles under Gamma-Ray Irradiation	**Changyeon Baek**	Korea Atomic Energy Research Institute (KAERI)
SP6-5	Temperature-Stable and High-Performance Lead-Free Piezoelectric Sensors Based on Hybrid Composite Structure with Opposite Temperature Dependence of Piezoelectric Properties	**Kyuhyun Park**	Korea Atomic Energy Research Institute (KAERI)
SP6-6	Impact of Phosphor-Coated Layers on Mechanoluminescence Generation in Zinc Sulfide Microparticle-Embedded Polydimethylsiloxane Films	**Soon Moon Jeong**	Daegu Gyeongbuk Institute of Science and Technology (DGIST)
SP6-7	Optimizing Additive Strategies for Improved Breakdown Strength in Lead-Free Pyrochlore Ceramics	**Seung Yong Lee**	Korea Advanced Institute of Science and Technology (KAIST)
SP6-8	Enhanced Energy Conversion Performance of a Magneto-Mechano-Electric Generator using PVDF and CoFe2O4-BaTiO3 Core-Shell Composite	**Bitna Bae**	Kyungpook National University
SP6-9	Enhanced Piezoelectric Energy Harvesting based on CFRP-Integrated Screen Printing	**Hyomin Jeon**	Kyungpook National University
SP6-10	Mid-Temperature Thermoelectric Performance of half-Heusler TiNiSb-based Composite Film	**Hyejeong Choi**	Kyungpook National University
SP6-11	Low-cost and eco-friendly synthesis of tellurium nanowires and their thermoelectric properties	**Ji Eun Lee**	Chonnam National University
SP6-12	Bioresorbable, wireless, system for electrotherapy	**Daniel Tiruneh**	Chung-Ang University
SP6-13	Enhanced Hybrid Nanogenerator based on (PVDF, PANBTO) Coaxial structured Electrospun Nanofiber	**Dong Hyun Kim**	Chung-Ang University
SP6-14	Enhancing the performance of triboelectric nanogenerators using a KIT-6/PDMS friction layer with multi sized pores	**Jianbin Mao**	Gachon University
SP6-15	Enhanced Output Performance of Triboelectric Nanogenerators by Electromechanical Composition	**Se Ryong Park**	Kwangwoon University
SP6-16	Wireless Physio Health Monitoring System enabled Green Triboelectrification	**Bincy Shaji Thanjan**	Jeju National University
SP6-17	Advancements in Gas Sensing: Enhanced Response and Recovery of Nb-Doped MoS2 Synthesized via Physical Vapor Deposition	**Jinyoung Choi**	Yonsei University
SP6-18	Align-Structured with Ultrasound-Responsive Piezoelectric scaffold for Promoting Nerve Regeneration	**Dabin Kim**	Sungkyunkwan University
SP6-19	Force-induced conductive hydrogel Direct current generator	**Hyeji Ryu**	Yonsei University
SP6-20	Humidity-enhanced electromechanical Schottky-junction generating 1.4 mA cm-2 of direct current	**Sera Jeon**	Yonsei University
SP6-21	Communicator System derived using Self-Powered Hybrid Sensors	**Monunith Anithkumar**	Jeju National University
SP6-22	Phase engineering-induced piezoelectricity change of van der Waals heterostructure	**Daejin Kim**	Yonsei University

Symposium 7. Materials for Green Ammonia Cycling

August 20 (TUE) 13:30-15:30

SP7-1	Understanding the Role of Proton Transport Resistance for Electrochemical Systems	**Hoang Thai Bao Ngo**	Korea Institute of Energy Technology (KENTECH)
SP7-2	Metal-supported carbon hybrid composite electrocatalysts for ammonia oxidation in solid acid electrolysis systems to produce high purity carbon-free H2	**Jungseub Ha**	Pohang University of Science and Technology (POSTECH)
SP7-3	Plasma induced Oxygen Vacancies over CuOx catalysts supported by N,Se co-doped Porous Carbon for Enhanced Electrocatalytic Nitrate Reduction to Ammonia	**Junbeom Maeng**	Pohang University of Science and Technology (POSTECH)
SP7-4	Polymer type additive to Li-mediated nitrogen reduction reaction for green ammonia production	**Chaeeun Lim**	Pohang University of Science and Technology (POSTECH)
SP7-5	Effect of solvent mixtures on Lithium-mediated Nitrogen Reduction Reaction	**Hyeju Yun**	Pohang University of Science and Technology (POSTECH)
SP7-6	Exploring single transition-metal incorporated FeTe2 electrocatalyst for efficient electrochemical reduction of nitrogen to ammonia	**Nam Hoang Truong**	Chungnam National University
SP7-7	Insights into Active Sites via Additive-Modified Interfacial Architectures in Lithium Redox-Mediated Nitrogen Reduction to Ammonia	**Vy Thuy Nguyen**	Chungnam National University
SP7-8	Phosphorylated nanocellulose: An eco-friendly nanomaterial for non-aqueous electrochemical systems	**Do Hyeong Kwon**	Korea Institute of Energy Technology (KENTECH)
SP7-9	Advancing Electrochemical Nitrogen Reduction Reactions in Non-aqueous Systems with Lithium: The Role of Interfaces	**Dongwoo Shin**	Seoul National University
SP7-10	Performance Enhancement of Lithium-mediated Nitrogen Reduction with the Introduction of Additives	**Yeongbae Jeon**	Seoul National University
SP7-11	Advancement of Active, Stable, and Selective Materials for Sustainable Ammonia Production and Utilization	**SUBHASH CHANDRA SHIT**	Korea Institute of Energy Technology (KENTECH)
SP7-12	Study on ether blending electrolyte in Lithium-mediated Ammonia electrosynthesis	**Yebin Han**	Pohang University of Science and Technology (POSTECH)
SP7-13	Enhancing Ammonia Production via Electrochemical Nitrate Reduction on CuO-CeO2 Catalyst with Controlling Oxygen Vacancy	**Yujin Kong**	Korea Advanced Institute of Science and Technology (KAIST)
SP7-14	Operando Observation of Reaction Surfaces in Lithium-Mediated Electrochemical Nitrogen Reduction	**Yurim Sohn**	Korea Institute of Energy Technology (KENTECH)
SP7-15	Effect of DeNOx on ceria based materials for Direct Ammonia Converted SOFC	**Dong Jae Park**	Korea Institute of Ceramic Engineering and Technology
SP7-16	Synergistic Tandem Electroreduction of Nitrate to Ammonia Using a Cobalt/Copper Dual-Atom Catalyst	**Jungwon Suh**	Korea Advanced Institute of Science and Technology (KAIST)
SP7-17	Electrochemical Nitrate Reduction To Ammonia on Facet-Engineered Epitaxial Perovskite Oxide	**Hwang Jun Beom**	Gwangju Institute of Science and Technology (GIST)

Symposium 8. Semiconductor Nanocrystal Quantum Dots

August 21 (WED) 15:00-17:00

SP8-1	Coke Resistant Dry Reforming of methane by the encapsulation of metal nanoparticles inside hollow sphere.	**Agni Raj Koirala**	Korea Advanced Institute of Science and Technology (KAIST)
SP8-2	Phase Transformation Dynamics of Quantum-Sized Semiconductor Nanocrystals Revealed by In-Situ Transmission Electron Microscopy	**Hyeongseung Kim**	Daegu Gyeongbuk Institute of Science and Technology (DGIST)
SP8-3	Wearable Displays Based on Stretchable Quantum Dot Color Conversion Layers	**Yeongji Lee**	Daegu Gyeongbuk Institute of Science and Technology (DGIST)
SP8-4	Nickel-Cobalt Anchored MoO2 as an Efficient Hydrogen Production Catalyst for Alkaline Water Electrolysis	**Kyeong Su Kim**	Korea Advanced Institute of Science and Technology (KAIST)
SP8-5	Enhancement of the stability characteristics in electrical synaptic devices based on PVA:GO QDs nanocomposites with directional formation filaments	**MING LI**	Hanyang University
SP8-6	Co-promoted Mo2N on γ-Al2O3 as an Efficient Nitrogen Carrier for Chemical Lopping Ammonia Synthesis	**Siwoo Bae**	Korea Advanced Institute of Science and Technology (KAIST)
SP8-7	Tailoring Charge Transport Properties of Cd3P2 Quantum Dot Films for Photodetection	**Ha-Chi V. Tran**	Sungkyunkwan University
SP8-8	Minimizing Structural and Crystallographic Defects in Thick Shell QDs for Improved Photoluminescence Quantum Yield	**Hyoungjun Kim**	Sungkyunkwan University
SP8-9	Passivation of Perovskite Quantum Dots Surface by Ethylene Glycol Side Chain Conjugated Polymer for High-Efficiency Perovskite Solar Cells	**Tae Oh Yoon**	Jeonbuk National University
SP8-10	Synthesis and Application of Green Emitting Cs3Cu2Cl5 Nanocrystals	**Gibaek Lee**	Jeonbuk National University
SP8-11	Development of thermally stable and high-brightness blue OLED materials	**Ga-hyun Kim**	Wonkwang University

Symposium 9. Advanced Biomaterials and Bioelectronics

August 20 (TUE) 13:30-15:30

SP9-1	New type of polyurethane biomaterial applied in different kinds of medical devices	**HYUNG TAE KIM**	S&G BIOTECH INC
SP9-2	Wearable, biodegradable Si MOSFET based gas sensing array	**Kang Hyeon Kim**	Jeonbuk National University
SP9-3	Development of a CXCR4-targeted Core/Shell Nanoplatform with Surface-modified Liposome-Coated Multifunctional Mesoporous Silica Nanoparticle for Enhanced Colon Cancer Treatment through Berberine and Paclitaxel Co-Delivery	**Yeonwoo Jang**	Chung-Ang University
SP9-4	MnCo2S4 Nanozymes with Dual Enzymatic Activities for Efficient Removal of Phenolic Dyes	**Moon Il Kim**	Gachon University
SP9-5	Exploitation of selenium-doped carbon quantum dots for sialic acid sensing and free radical scavenging applications	**Roopkumar Sangubotla**	Gachon University
SP9-6	Electrochemical analysis of intracellular reactive oxygen species and nitrogen species using scanning electrochemical microscopy (SECM)	**Jongwon Kim**	Yonsei University
SP9-7	MOF-Mxene modified screen-printed electrode system to measure ascorbic acid, for precision medication	**Jose Paul**	Gachon University
SP9-8	Rapid Identification of Pathogenic Bacteria with Label-Free SERS Spectra and Artificial Intelligence Classification Algorithm	**Suji Lee**	Kyung Hee University
SP9-9	Antibacterial and anti-inflammatory effect of amoxicillin-conjugated hyaluronic acid nanoparticles for treatment of oral soft tissue disease	**Young-IL Jeong**	Chosun University
SP9-10	Anticancer effect of atezolizumab-based nanomedicine and cold atmospheric plasma against oral cancer cells	**Chang Young Kim**	Chonnam National University
SP9-11	Control of anti-inflammatory drug delivery of microneedles through plasma-polymerized polymer thin film	**Ji-Hun Seok**	Chosun University
SP9-12	Dual layer-coating of PDMS to prevent calcification and bacterial infection for the potential use of urinary tract biomaterials	**Taehyeon Kim**	Yonsei University
SP9-13	Toward Highly Matching the Dura Mater: A Polyurethane Integrating Biocompatible, Leak-Proof, and Self-Healing Properties	**Wu Bin Ying**	Korea Advanced Institute of Science and Technology (KAIST)
SP9-14	A Bio-based, Sweat-Resistant and Markedly Sensitive Iontronic Skin for Advancing Central Sleep Apnea Monitoring	**Jin Zhu**	Chinese Academy of Sciences
SP9-15	Synthesis of highly dispersed Mo nanocatalyst embeded in biomass-derived N-doped carbon	**Jun beom Park**	Sungkyunkwan University
SP9-16	Utilization of Microwave irradiation in the Fabrication of Two-dimensional Polymeric Cobalt Phthalocyanine and its Application at Glucose sensor and Continuous Glucose Monitoring	**Hobin You**	Korea National University of Transportation
SP9-17	Exploration of power source for wearable and implantable devices based on enzymatic biofuel cells	**Joonyoung Lee**	Seoul National University of Science and Technology
SP9-18	Synthesis of Plasmonic Nanostructures on the Membrane in Gram-positive Bacteria	**Yonghee Shin**	Sogang University
SP9-19	Enzymeless α-Fe2O3-ZnO Hybrid Nanostructure-Based Sensor for Sensitive Quantification of Nitrite Ions	**Rafiq Ahmad**	Pukyong National University
SP9-20	Growth-Induced Extinction Development for the Signal Generation in Immunoassays	**Hyon Bin Na**	Myongji University
SP9-21	Surface-engineered metal-organic frameworks for electrochemical biosensors	**Tae-Jun Ha**	Kwangwoon University
SP9-22	Biodegradable piezo-resistivity type strain sensors for sciatic nerve regeneration	**Min Jae Park**	Yonsei University
SP9-23	Double Gate Dielectrically-Modulated Thyristor for highly sensitive biosensing and low power consumption	**Chan Heo**	Jeonbuk National University

SP9-24	Pre-diffusion with Choline-based ionic liquids and gels for Organic Electrochemical Transistors	**Sungbin Choi**	Sungkyunkwan University
SP9-25	Fully stretchable painless tattoo microneedle sensor for long term electrophysiological signal monitoring	**Keonuk June**	Sungkyunkwan University
SP9-26	Polymeric Conductive Adhesive based Ultrathin Epidermal Electrodes for Long-term Monitoring of Electrophysiological Signals	**Tae-il Kim**	Sungkyunkwan University
SP9-27	A wireless implant for the continuous monitoring of chronic and acute stress by electrophysiological signals from adrenal gland	**Lili Guo**	Sungkyunkwan University
SP9-28	Highly Stretchable and Strain-Insensitive Liquid-Metal based Elastic Kirigami Electrodes (LM-eKE)	**Chaerin Kwak**	Sungkyunkwan University
SP9-29	Injectable Optoelectronic Probe with Heat Dissipation Guide for Enhanced Photodynamic Therapy	**Tae-il Kim**	Sungkyunkwan University
SP9-30	Enhanced Vertical Thermal Conductivity in BN Composite Films for Highly Integrated Electronics	**Yujin Mun**	Sungkyunkwan University