

# [MCARE 2024] Final Program (Oral)

ver.24.08.07

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

August 19 (MON)		[ Symposium 1. ] Session 01					Crystal Ballroom 3
15:20-17:10	110						
Chairperson(s)		<i>Tsutomu Minegishi (The Univ. of Tokyo)</i>					
15:20-15:50	30	Keynote	SO1-1	<b>Jae Sung Lee</b>	Ulsan National Institute of Science and Technology(UNIST)	Towards Solar Hydrogen Production at Practical Scale	South Korea
15:50-16:20	30	Invited	SO1-2	<b>Ryu Abe</b>	Kyoto University	Mimicking Natural Photosynthesis: Visible-Light-Induced Water Splitting into H <sub>2</sub> and O <sub>2</sub> via Z-Scheme Photocatalysis Systems	Japan
16:20-16:50	30	Invited	SO1-3	<b>Ji-Hyun Jang</b>	Ulsan National Institute of Science and Technology(UNIST)	Morphology Control of Hematite for Efficient Photoelectrochemical Water Splitting	South Korea
16:50-17:10	20	Oral	SO1-4	<b>Chang Hyun Ko</b>	Chonnam National University	Hydrogen Production for Carbon Neutrality from Catalytic Decomposition of Methane via Ni/SBA-15 catalysts: Metal-Support Interaction Control Using a Nonionic-Surfactant	South Korea

August 20 (TUE)		[ Symposium 1. ] Session 02					Crystal Ballroom 3
09:00-12:00	180						
Chairperson(s)		<i>Ji-Hyun Jang (UNIST)</i>					
09:00-09:30	30	Invited	SO1-5	<b>Tsutomu Minegishi</b>	The University of Tokyo	(Photo)electrochemical devices for carbon neutrality	Japan
09:30-10:00	30	Invited	SO1-6	<b>Ho Won Jang</b>	Seoul National University	Interfacial engineering for high-performance water splitting photoanodes	South Korea
10:00-10:30	30	Invited	SO1-7	<b>Akinobu Nakada</b>	Kyoto University	Molecular and Material Design of Photocatalysts for CO <sub>2</sub> Reduction	Japan
10:30-11:00	30	Invited	SO1-8	<b>Hyunwoong Park</b>	Kyungpook National University	Artificial Photosynthesis Running Out of the Laboratory into the Field	South Korea
11:00-11:20	20	Oral	SO1-9	<b>Kyong-Hwan Chung</b>	Sunchon National University	Assessment of hydrogen productivity in liquid plasma cracking of perovskite composites with highly enhanced visible light responsibility	South Korea
11:20-11:40	20	Oral	SO1-10	<b>Taehun Lee</b>	Jeonbuk National University	Exploring Surface Structure and Dynamics of Bismuth Vanadate (BiVO <sub>4</sub> ) Photoelectrodes: Insights from Machine Learning Molecular Dynamics	South Korea
11:40-12:00	20	Oral	SO1-11	<b>Sanjay Mathur</b>	University of Cologne	Tantalum nitrides and oxynitrides as advanced electrocatalysts for hydrogen evolution reaction	Germany

August 20 (TUE)		[ Symposium 1. ] Session 03					Crystal Ballroom 3
13:30-15:20	110						
Chairperson(s)		<i>Ho Won Jang (Seoul Nat'l Univ.)</i>					
13:30-14:00	30	Keynote	SO1-12	<b>Yung-Eun Sung</b>	Seoul National University	Electrocatalysts for electrochemical energy conversion devices	South Korea
14:00-14:30	30	Invited	SO1-13	<b>Soo Young Kim</b>	Korea University	Single Atom Decorated MOF Nanosheet for Electrochemical Conversion of CO <sub>2</sub> to CO	South Korea
14:30-15:00	30	Invited	SO1-14	<b>Chuan Zhao</b>	The University of New South Wales	Challenges and Opportunities for Green Hydrogen Production from Water Electrolysis	Australia
15:00-15:20	20	Oral	SO1-15	<b>Joo Young Park</b>	Korea Institute of Materials Science(KIMS)	Absorptivity enhancement of MOF-801 through atmospheric pressure plasma exposure	South Korea

August 21 (WED)		[ Symposium 1. ] Session 04					Crystal Ballroom 3
09:00-10:50	110						
Chairperson(s)		<i>Bin Liu (CityU)</i>					
09:00-09:30	30	Invited	SO1-16	<b>Dae-Hyeong Kim</b>	Seoul National University	Unconventional Power Conversion, Transfer, and Storage Devices	South Korea
09:30-10:00	30	Invited	SO1-17	<b>Kwangyeol Lee</b>	Korea University	Multielement Nanoparticle Tectonics Toward Efficient Electrochemical Catalysts	South Korea
10:00-10:30	30	Invited	SO1-18	<b>Jun Huang</b>	The University of Sydney	Tailoring Nanocatalysts for Chemoselective CO <sub>2</sub> upcycling	Australia
10:30-10:50	20	Oral	SO1-19	<b>Bee Lyong Yang</b>	Kumoh National Institute of Technology, GHS co. Ltd.	Optimizing PEM Water Electrolysis: Surface-Engineered 1T'-Phase WS <sub>2</sub> Nanosheets and Stabilized Ti <sub>3</sub> C <sub>2</sub> MXene for Enhanced Efficiency and Economic Viability	South Korea

August 21 (WED)		[ Symposium 1. ] Session 05					Crystal Ballroom 3
14:40-16:00	80						
Chairperson(s)		<i>Chuan Zhao (UNSW Sydney)</i>					
14:40-15:10	30	Invited	SO1-20	<b>Bin Liu</b>	City University of Hong Kong	Probing CO <sub>2</sub> Reduction Chemistry over Model Single Atom Catalyst under Operando Condition	Hong Kong
15:10-15:40	30	Invited	SO1-21	<b>Qing MAO</b>	Dalian University of Technology	Electrochemical CO <sub>2</sub> Conversion towards Industrial Application	China
15:40-16:00	20	Oral	SO1-22	<b>Eunice Estrella De Guzman</b>	De La Salle University	Boosted Selectivity of Graphene-supported Cobalt Phthalocyanine towards the electrosynthesis of CO with Geopolymer	Philippines

August 22 (THU)		[ Symposium 1. ] Session 06					Crystal Ballroom 3
09:00-10:50	110						
Chairperson(s)		<i>Kyungmin Choi (Sookmyung Women's Univ.)</i>					
09:00-09:30	30	Invited	SO1-23	<b>Kan Zhang</b>	Nanjing University of Science and Technology	Photoelectrochemical Conversion Based on Solid-Liquid Interface of Semiconductor	China
09:30-09:50	20	Oral	SO1-24	<b>Kyungsu Na</b>	Chonnam National University	A New Carbon-Consuming Catalytic Cycle with Sequential Activation of CO <sub>2</sub> and CH <sub>4</sub>	South Korea
09:50-10:10	20	Oral	SO1-25	<b>Seenivasan Selvaraj</b>	Chonnam National University	Minimal doping approach to Activate Lattice Oxygen Participation in K <sub>2</sub> WO <sub>4</sub> Electrocatalysts for Oxygen Evolution Reaction	South Korea
10:10-10:30	20	Oral	SO1-26	<b>Tahereh Mahvelati-Shamsabadi</b>	University of Ulsan	Single Atom Pt Electrocatalysts on Unilamellar Reduced Graphene Oxide Nanosheets for Effective Alkaline Hydrogen Evolution Reaction	South Korea
10:30-10:50	20	Oral	SO1-27	<b>Ziyaad Aytunaa</b>	University of Cologne	Binary MO <sub>2</sub> (M = V, Sn, Ti, Zr, Hf) High-Entropy Oxides as Superior Catalysts for Enhanced Oxygen Evolution Reaction	Germany

## Symposium 2. Advanced Materials for Energy Storage

August 19 (MON)		[ Symposium 2. ] Session 01					Crystal Ballroom 1
15:20-16:40		80					
Chairperson(s)		<i>Ranjith Thangavel (Indian Institute of Technology), Seung-Yong Lee (Hanyang Univ.)</i>					
15:20-15:40	20	Oral	SO2-1	<b>Junsu Kim</b>	Sungkyunkwan University	Polymeric phthalocyanine induced inorganic rich SEI on carbonaceous host enabled stable lithium metal anode	South Korea
15:40-16:00	20	Oral	SO2-2	<b>Jinsuk Byun</b>	Sungkyunkwan University	Polyoxometalate Initiated In-situ Conformal Coating of Multifunctional Hybrid Artificial Layers for High Performance Zinc Metal Anodes	South Korea
16:00-16:20	20	Oral	SO2-3	<b>Hyeok Jae Lee</b>	Sungkyunkwan University	Bi-coated 3D Porous Cu Current Collector for Zn Metal Anode	South Korea
16:20-16:40	20	Oral	SO2-4	<b>QUOC HAO NGUYEN</b>	Kyung Hee University	Fabrication of Fe single atoms and ultrafine Mo <sub>2</sub> C embedded in Nitrogen-carbon heterostructures for enhanced oxygen reaction performance in Zinc-air batteries	South Korea

August 20 (TUE)		[ Symposium 2. ] Session 02					Crystal Ballroom 1
09:00-11:40		160					
Chairperson(s)		<i>Yoon Hwa (Arizona State Univ.), Kota Suzuki (Tokyo Institute of Technology)</i>					
09:00-09:30	30	Keynote	SO2-5	<b>Atsuo YAMADA</b>	The University of Tokyo	Liquid Madelung energy accounts for the huge potential shift in electrochemical systems	Japan
09:30-10:00	30	Invited	SO2-6	<b>Changshin Jo</b>	Pohang University of Science and Technology(POSTECH)	Structuring of Prussian blue analogues particles for sodium ion battery applications	South Korea
10:00-10:30	30	Invited	SO2-7	<b>Yi Yu</b>	ShanghaiTech University	Transmission Electron Microscopy of Lithium Metal	China
10:30-11:00	30	Invited	SO2-8	<b>Yongning Zhou</b>	Fudan University	New layer-structured cathode materials for sodium-ion batteries and their sodium storage mechanisms	China
11:00-11:20	20	Oral	SO2-9	<b>Viet Phuong Nguyen</b>	Korea Institute of Machinery and Materials(KIMM)	Regulating Lithium Nucleation and Growth by Ultrathin ZnF <sub>2</sub> Layer for Dendrite-Free Lithium-Metal Anode	South Korea
11:20-11:40	20	Oral	SO2-10	<b>ALPHONSE RAJ RUBY</b>	Jeju National University	Dopamine-assisted Li <sub>4</sub> Ti <sub>5</sub> O <sub>12</sub> decoration on MCMB anode for lithium-ion batteries	South Korea

August 20 (TUE)		[ Symposium 2. ] Session 03					Crystal Ballroom 1
13:30-15:30		120					
Chairperson(s)		<i>Won-Jin Kwak (UNIST), Yi Yu (ShanghaiTech Univ.)</i>					
13:30-14:00	30	Invited	SO2-11	<b>Wei Liu</b>	ShanghaiTech University	Advanced sintering methods for garnet electrolytes and solid-state lithium-metal batteries	China
14:00-14:30	30	Invited	SO2-12	<b>Yoon Hwa</b>	Arizona State University	Characterization and Electrochemical Performance of Low Crystallinity Sulfur-Carbon Composites in Lithium-Sulfur Batteries	United States
14:30-15:00	30	Invited	SO2-13	<b>Sangryun Kim</b>	Gwangju Institute of Science and Technology	Hydride-based superionic conductors for all solid-state batteries	South Korea
15:00-15:30	30	Invited	SO2-14	<b>Che-Ning Yeh</b>	National Tsing-Hua University	On the Fast Charging of Graphite Electrodes for Lithium-ion Batteries	Taiwan

August 20 (TUE)	[ Symposium 2. ] Session 04						Crystal Ballroom 1	
16:00-17:50	110							
Chairperson(s)	<i>Sangryun Kim (GIST), Wei Liu (ShanghaiTech Univ.)</i>							
16:00-16:30	30	Invited	SO2-15	<b>Chia-Chin Chen</b>	National Taiwan University	Mixed Ion-Electron Transport in Solid-State Batteries	Taiwan	
16:30-17:00	30	Invited	SO2-16	<b>Kota Suzuki</b>	Tokyo Institute of Technology	Material Search Guidelines of Superionic Conductors for All-Solid-State Lithium Battery	Japan	
17:00-17:30	30	Invited	SO2-17	<b>Seung-Yong Lee</b>	Hanyang University	Lithium Growth Behaviors Investigated by Cryo-TEM	South Korea	
17:30-17:50	20	Oral	SO2-18	<b>Arul Sravanan Raaju Sundhar</b>	Jeju National University	Unlocking fast charging potential with solvent-free single-step electrode interphase engineering for Ni-rich cathode materials and beyond	South Korea	

August 21 (WED)	[ Symposium 2. ] Session 05						Crystal Ballroom 1	
09:00-10:50	110							
Chairperson(s)	<i>Xiaodi Ren (USTC), Kyojin Ku (Hanbat Nat'l Univ.)</i>							
09:00-09:30	30	Keynote	SO2-19	<b>ChunYi Zhi</b>	City University of Hong Kong	Conversion Anode for Aqueous Zinc Batteries	Hong Kong	
09:30-10:00	30	Invited	SO2-20	<b>Jaeyeon Ryu</b>	Sogang University	Dual-ion Strategy for Extreme Fast-charging Batteries	South Korea	
10:00-10:30	30	Invited	SO2-21	<b>Sung-Kyun Jung</b>	Ulsan National Institute of Science and Technology(UNIST)	Guided phase transition in host formation reaction for designing cathode materials of Li-ion batteries	South Korea	
10:30-10:50	20	Oral	SO2-22	<b>Sang-Wook Han</b>	Jeonbuk National University	Structural and Magnetic Properties of Exchange Bias Co/CoO Bilayers	South Korea	

August 21 (WED)	[ Symposium 2. ] Session 06						Crystal Ballroom 1	
14:40-16:10	90							
Chairperson(s)	<i>Jaeyeon Ryu (Sogang Univ.), Sung-Kyun Jung (UNIST)</i>							
14:40-15:10	30	Invited	SO2-23	<b>Xiaodi Ren</b>	University of Science and Technology of China	Molecular Anchoring Strategy for High-Voltage High-Safety Lithium Metal Batteries	China	
15:10-15:40	30	Invited	SO2-24	<b>Kyojin Ku</b>	Hanbat National University	Partially disordered rock-salt materials for lithium-ion batteries from aerosol based synthesis	South Korea	
15:40-16:10	30	Invited	SO2-25	<b>Youngjin Kim</b>	Kangwon National University	Unraveling the Intricacies of Residual Lithium in High-Ni Cathodes for Lithium-ion Batteries	South Korea	

August 22 (THU)		[ Symposium 2. ] Session 07					Crystal Ballroom 1
09:00-11:30	150						
Chairperson(s)		<i>Seongmin Bak (Yonsei Univ.), Minkyung Kim (Kwangwoon Univ.)</i>					
09:00-09:30	30	Invited	SO2-26	<b>Won-Jin Kwak</b>	Ulsan National Institute of Science and Technology(UNIST)	Electrolyte design for reversible organic electrode batteries	South Korea
09:30-10:00	30	Invited	SO2-27	<b>Ranjith Thangavel</b>	Indian Institute of Technology	Sustainable Materials for Sodium-ion based Energy Storage Systems with High Energy and Power Density	India
10:00-10:30	30	Invited	SO2-28	<b>Hee-Dae Lim</b>	Hanyang University	Regulating Mg deposition by constructing protective and magnesiophilic layers for reversible multivalent Mg-metal batteries	South Korea
10:30-10:50	20	Oral	SO2-29	<b>Ranjith Balu</b>	Kumoh National Institute of Technology	Facile synthesis of Ce doped NiCoTe@N-doped porous carbon for long-lasting and flexible rechargeable zinc-air battery	South Korea
10:50-11:10	20	Oral	SO2-30	<b>Sangeeta Adhikari</b>	Chonnam National University	Enhancing the energy storage capacity of an aqueous ammonium ion supercapacitor through molybdenum-based oxide-sulfide electrode system	South Korea
11:10-11:30	20	Oral	SO2-31	<b>TOAN MINH PHAM</b>	Kyung Hee University	An Ultrathin 2D Nanostructured Ti, Fe-codoped CoS as Robust Electrocatalyst for Rechargeable Zn-air Batteries	South Korea

August 22 (THU)		[ Symposium 2. ] Session 08					Crystal Ballroom 1
13:30-15:30	120						
Chairperson(s)		<i>Changshin Jo (POSTECH), Hee-Dae Lim (Hanyang Univ.)</i>					
13:30-14:00	30	Invited	SO2-32	<b>Seongmin Bak</b>	Yonsei University	Mult-Scale/Multi-Modal Characterization Studies of Battery Materials Using Synchrotron-Based X-ray Techniques	South Korea
14:00-14:30	30	Invited	SO2-33	<b>Minkyung Kim</b>	Kwangwoon University	Stabilizing ultra-nickel layered oxide, LiNiO <sub>2</sub> as a cathode for lithium ion batteries	South Korea
14:30-14:50	20	Oral	SO2-34	<b>Vishwanathan Ravichandran</b>	Jeju National University	P-phenylenediamine Functionalized Graphene Micro-supercapacitors for Self-powered Environment Monitoring System	South Korea
14:50-15:10	20	Oral	SO2-35	<b>Vignesh Krishnan</b>	Jeju National University	Redox-mediated biowaste-derived porous carbon electrode for high performance symmetric supercapacitor	South Korea
15:10-15:30	20	Oral	SO2-36	<b>Rajavarman Swaminathan</b>	Jeju National University	Binder-Free Tungsten Disulfide: A Hydroelectric-Powered Supercapacitor Towards Self-Sustainable System	South Korea

August 22 (THU)		[ Symposium 2. ] Session 09					Crystal Ballroom 1
16:00-17:40	100						
Chairperson(s)		<i>Yongchai Kwon (SEOULTECH), Hyung-Jun Koo (SEOULTECH)</i>					
16:00-16:20	20	Oral	SO2-37	<b>Ha-Na Jang</b>	Seoul National University of Science and Technology	Impact of transition metal co-doping on F-doped SnO <sub>2</sub> deposited graphite felt for vanadium redox flow batteries	South Korea
16:20-16:40	20	Oral	SO2-38	<b>Mingyu Shin</b>	Seoul National University of Science and Technology	Exploration of Catholytes for Fe(BIS-TRIS) Flow Batteries	South Korea
16:40-17:00	20	Oral	SO2-39	<b>Mike Jason Koleczko</b>	Seoul National University of Science and Technology	Multiaxial Superomniphobic Hyperbola Structures for Self-cleaning Properties in Solar Cells	South Korea
17:00-17:20	20	Oral	SO2-40	<b>Min-Young Choi</b>	Seoul National University of Science and Technology	A Highly Stretchable Textile-Based Supercapacitor with Liquid Metal Current Collector	South Korea
17:20-17:40	20	Oral	SO2-41	<b>SangHyun Sohn</b>	Seoul National University of Science and Technology	Synergy coupling of tribovoltaic and moisture-enabled electricity from hygroscopic materials	South Korea

## Symposium 3. Advanced Materials for Next Generation Photovoltaics

August 20 (TUE)		[ Symposium 3. ] Session 01					Crystal Ballroom 3
16:00-18:00	120						
Chairperson(s)		<i>Jongchul Lim (Chungnam Nat'l Univ.)</i>					
16:00-16:30	30	Invited	SO3-1	<b>Severin Niklas Habisreutinger</b>	Oxford PV Ltd.	The opportunities and challenges of perovskite-based tandem photovoltaics	United Kingdom
16:30-17:00	30	Invited	SO3-2	<b>Nakita K. Noel</b>	University of Oxford	Controlling the Crystallisation Dynamics of Halide Perovskites: The Path to Improved Performance and Stability	United Kingdom
17:00-17:30	30	Invited	SO3-3	<b>Jay B. Patel</b>	King's College London	Terrestrial And Non-Terrestrial Environmental Effects on Perovskite Solar Cell Performance	United Kingdom
17:30-18:00	30	Keynote	SO3-4	<b>Steven C. Tidrow</b>	Alfred University	Potential Simple Halide Perovskites: NSMM Review	United States

August 21 (WED)		[ Symposium 3. ] Session 02					Pearl
14:40-18:10	210						
Chairperson(s)		<i>Jongmin Choi (DGIST)</i>					
14:40-15:10	30	Invited	SO3-5	<b>Hyesung Park</b>	Korea University	Vacuum Processable Perovskite Solar Cells	South Korea
15:10-15:40	30	Invited	SO3-6	<b>Yi Hou</b>	National University of Singapore	Unlocking the Potential of Perovskite Solar Cells: from Single-Junction to Tandem	Singapore
15:40-16:10	30	Invited	SO3-7	<b>Beomsoo Kim</b>	Korea Research Institute of Chemical Technology(KRICT)	Advanced process for Wide Eg perovskite solar cells :Ambient air, vacuum evaporation and automated process	South Korea
16:10-16:40	30	Invited	SO3-8	<b>Yuelong Li</b>	Nankai University	Wide-band gap perovskite films for tandem solar cells	China
16:40-17:10	30	Invited	SO3-9	<b>Jun Hong NOH</b>	Korea University	Design of Interlayers in Halide Perovskite Thin Film Solar Cells	South Korea
17:10-17:40	30	Invited	SO3-10	<b>Yousheng Wang</b>	Jinan University	Defect passivation of wide-bandgap perovskites for indoor photovoltaics and perovskite/silicon tandem solar cells	China
17:40-18:10	30	Invited	SO3-11	<b>Yen-Hung Lin</b>	The Hong Kong University of Science and Technology	Reaching the Goldilocks Zone: Mastering the Defective Nature of Perovskite Solar Cells	Hong Kong

August 22 (THU)		[ Symposium 3. ] Session 03					Pearl
09:00-12:00	180						
Chairperson(s)		<i>Jae Sung Yun (Univ. of Surrey)</i>					
09:00-09:30	30	Keynote	SO3-12	<b>Sung-Yeon Jang</b>	Ulsan National Institute of Science and Technology(UNIST)	High-Efficiency Solar Cells Based on Low Bandgap Perovskite Quantum Dots	South Korea
09:30-10:00	30	Invited	SO3-13	<b>Jiaying Wu</b>	The Hong Kong University of Science and Technology (Guangzhou)	Structural regulation for reduced charge recombination enabling high-efficient single-component organic solar cells	China
10:00-10:30	30	Invited	SO3-14	<b>Jongmin Choi</b>	Daegu Gyeongbuk Institute of Science and Technology(DGIST)	Material Engineering Strategies for High-Performance and Stabilized Quantum Dot and Perovskite Photovoltaics	South Korea
10:30-11:00	30	Invited	SO3-15	<b>Chu-chen CHUEH</b>	National Taiwan University	Compatibilizer Effects on the Performance and Stability of Polymer Solar Cells	Taiwan
11:00-11:20	20	Oral	SO3-16	<b>Kiran A. Nirmal</b>	Korea University	Machine Learning Empowers Efficient Design of Ternary Organic Solar Cells with PM6 Donor	South Korea
11:20-11:40	20	Oral	SO3-17	<b>Duangmanee Wongratanaphisan</b>	Chiang Mai University	rGO-PEG Composites: Passivated Perovskite/Carbon Electrodes for Efficient and Stable Planar HTM-free Flexible Solar Cells	Thailand
11:40-12:00	20	Oral	SO3-18	<b>Warunee Khampa</b>	Chiang Mai University	Fabricating CsFA-based Perovskite Layers in High Humidity Environment for Enhanced Photovoltaic Performance	Thailand

August 22 (THU)		[ Symposium 3. ] Session 04					Pearl
13:30-15:30	120						
Chairperson(s)		<i>Beom-Soo Kim (KRICT)</i>					
13:30-14:00	30	Invited	SO3-19	<b>Jin-Wook Lee</b>	Sungkyunkwan University	Crystal Growth and Composition Engineering for Reproducible Fabrication of High-Performance Perovskite Solar Cells	South Korea
14:00-14:30	30	Invited	SO3-20	<b>Rui Wang</b>	Westlake University	Constructing efficient and stable formamidinium-based perovskite	China
14:30-15:00	30	Invited	SO3-21	<b>Jae Sung Yun</b>	University of Surrey	Scanning Probe Microscopy Investigation of Halide Perovskites Solar Cells	UK
15:00-15:30	30	Invited	SO3-22	<b>Zhong'an LI</b>	Huazhong University of Science and Technology	New Molecular Design Strategies of Hole Transporting Materials towards Efficient and Stable Perovskite Solar Cells	China

August 22 (THU)		[ Symposium 3. ] Session 05					Pearl
16:00-18:10	130						
Chairperson(s)		<i>Chu-Chen Chueh (NTU)</i>					
16:00-16:30	30	Invited	SO3-23	<b>Young Yun Kim</b>	Korea Research Institute of Chemical Technology(KRICT)	A Pathway toward Realization of High-performance Large-area Perovskite Solar Modules	South Korea
16:30-17:00	30	Invited	SO3-24	<b>Tzu Chien Wei</b>	National Tsing-Hua University	Scale-up Engineering for Perovskite Solar Cells	Taiwan
17:00-17:30	30	Invited	SO3-25	<b>Sanghan Lee</b>	Gwangju Institute of Science and Technology	Organometal Halide Perovskite-Based dual Photoelectrodes for Unbiased Solar water splitting	South Korea
17:30-17:50	20	Oral	SO3-26	<b>Wongsathon Musikpan</b>	Chiang Mai University	Unveiling the Ideal P2 for Carbon Electrodes: An Experimental Study with UV Laser Scribing in Perovskite Solar Cells	Thailand
17:50-18:10	20	Oral	SO3-27	<b>Chukwuebuka Emmanuel Usulor</b>	Chiang Mai University	Surface Passivation with Oxalic Acid Treatment for Efficient and Stable Carbon-based Perovskite Solar Cells	Thailand

## Symposium 4. Advanced Materials for Fuel Cells and Electrolysis

August 19 (MON)		[ Symposium 4. ] Session 01					Crystal Ballroom 2
15:20-16:50	90						
Chairperson(s)		<i>Jinwoo Lee (KAIST)</i>					
15:20-15:50	30	Invited	SO4-1	<b>Sang Hoon Joo</b>	Seoul National University	Atomically Dispersed Metal Catalysts Steering Selective Electrocatalysis of Commodity Chemical Production	South Korea
15:50-16:10	20	Oral	SO4-2	<b>Abhisek Padhy</b>	Indian Institute of Science	Bifunctional Strontium Cobalt Molybdenum Oxide (Sr <sub>2</sub> CoMoO <sub>6</sub> ) Perovskite as an Efficient Catalyst for Electrochemical Water Splitting Reactions in Alkaline Media	India
16:10-16:30	20	Oral	SO4-3	<b>T. Kavinkumar</b>	Karpagam Academy of Higher Education	Modulating Co-N/Mo-N/Fe-P configurations in cobalt molybdenum nitride/iron phosphide heterostructure by interface engineering for efficient electrocatalytic water splitting under alkaline media	India
16:30-16:50	20	Oral	SO4-4	<b>HyeonSeung Jung</b>	Gwangju Institute of Science and Technology	Design of Catalyst Layer for High Gas Diffusivity Evaluated with Electrochemical Electrode Analysis System in Polymer Electrolyte Membrane Fuel Cells	South Korea

August 20 (TUE)		[ Symposium 4. ] Session 02					Crystal Ballroom 2
09:00-12:00	180						
Chairperson(s)		<i>Dong Young Chung(KAIST)</i>					
09:00-09:30	30	Invited	SO4-5	<b>Sang Hyun Ahn</b>	Chung-Ang University	Self-terminated electrodeposition of platinum group metal electrocatalysts	South Korea
09:30-10:00	30	Invited	SO4-6	<b>Jin Young Kim</b>	Korea Institute of Science and Technology(KIST)	Materials Interface Engineering of Polymeric Composite Membrane for Hydrogen Fuel Cell and Water Electrolyzer Applications	South Korea
10:00-10:30	30	Keynote	SO4-7	<b>Shaojun Guo</b>	Peking University	Strain Catalysis for Hydrogen Cycles	China
10:30-11:00	30	Invited	SO4-8	<b>Sungjun Kim</b>	Korea Research Institute of Chemical Technology(KRICT)	Advanced anion conducting polymers for water electrolysis application	South Korea
11:00-11:20	20	Oral	SO4-9	<b>June Sung Lim</b>	Seoul National University	Designing Atomically Dispersed Ni Catalysts Mimicking the Ni SOD Enzyme for Efficient Electrochemical H <sub>2</sub> O <sub>2</sub> Production	South Korea
11:20-11:40	20	Oral	SO4-10	<b>Amr Hussein Mady Hussein</b>	Yeungnam University	Core-shell Cu <sub>2</sub> O@CoO/rGO composite as a robust catalyst for dual environmental applications: reduction of p-nitrophenol and heterogeneous catalyst for toxic organic pollutant removal.	South Korea
11:40-12:00	20	Oral	SO4-11	<b>MOHAMED SADIQ MOHAMED SALEEM</b>	Jeju National University	Sulfurization of binder-free cobalt oxide to cobalt sulfide as a non-noble electrocatalyst for hydrogen & oxygen evolution reaction	South Korea

August 20 (TUE)		[ Symposium 4. ] Session 03					Crystal Ballroom 2
13:30-15:40	130						
Chairperson(s)		<i>Sang Hoon Joo (SNU)</i>					
13:30-14:00	30	Keynote	SO4-12	<b>Hoon Taek CHUNG</b>	Sejong University	Perspectives of Hydrogen Industries and Electrolysis Technologies	South Korea
14:00-14:30	30	Invited	SO4-13	<b>Seoin Back</b>	Sogang University	From data to discovery: AI discovers electrocatalysts	South Korea
14:30-15:00	30	Invited	SO4-14	<b>Yu Katayama</b>	Osaka University	Role of Electrochemical Interface for Water Oxidation on Ruthenium Dioxide	Japan
15:00-15:20	20	Oral	SO4-15	<b>Tae Ho Shin</b>	Korea Institute of Ceramic Engineering and Technology(KICET)	Robust Ceramic Assisted Supports for High Durable PEMFC	South Korea
15:20-15:40	20	Oral	SO4-16	<b>Shan K. Sundaram</b>	Alfred University	Engineered Cermets with Tunable Porosity for Energy Applications	United States



August 20 (TUE)		[ Symposium 4. ] Session 04					Crystal Ballroom 2
16:00-17:30	90						
Chairperson(s)		<i>Sang Hyun Ahn (Chung-ANG Univ.)</i>					
16:00-16:30	30	Invited	SO4-17	<b>Jinwoo Lee</b>	Korea Advanced Institute of Science and Technology(KAIST)	Atomically Dispersed Electrocatalysts for Low Temperature Fuel Cells and Water Electrolysis	South Korea
16:30-17:00	30	Invited	SO4-18	<b>Ming Gong</b>	Fudan University	Interfacial Mechanism on Oxygen Evolution Electrocatalysis	China
17:00-17:30	30	Invied	SO4-19	<b>Dong Young Chung</b>	Korea Advanced Institute of Science and Technology(KAIST)	Insights on porous structure for electrocatalytic active sites	South Korea

August 21 (WED)		[ Symposium 4. ] Session 05					Crystal Ballroom 2
09:00-10:50	110						
Chairperson(s)		<i>Seoin Back (Sogang Univ.)</i>					
09:00-09:30	30	Invited	SO4-20	<b>Hyun S. Park</b>	Korea Institute of Science and Technology(KIST)	Electrochemical N2 reduction and NH3 oxidation for sustainable hydrogen storage and production under ambient conditions	South Korea
09:30-10:00	30	Invited	SO4-21	<b>Myoung Hwan Oh</b>	Korea Institute of Energy Technology(KENTECH)	Synthesis and Analysis of Nano-shell Catalysts for Harnessing Defects	South Korea
10:00-10:30	30	Invited	SO4-22	<b>Byung Hyo Kim</b>	Soongsil University	Structural analysis of Pt nanoparticles for fuel cell catalysts using liquid phase TEM	South Korea
10:30-10:50	20	Oral	SO4-23	<b>Chandan Chandru Gudal</b>	Sungkyunkwan University	Strategic Usage of Redox Active Material and Sacrificial Zinc Electrode for Spontaneous Hydrogen Evolution Reaction	South Korea

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

August 21 (WED)		[ Symposium 5. ] Session 01					Charlotte
09:00-10:50		110					
Chairperson(s)		<i>Yeonho Im (Jeonbuk Nat'l Univ.)</i>					
09:00-09:30	30	Keynote	SO5-1	<b>S. Ravi P. Silva</b>	Advanced Technology Institute, University of Surrey	Innovations in flexible and thin film energy materials for a Net Carbon Zero future	United Kingdom
09:30-10:00	30	Invited	SO5-2	<b>Dahl-Young Khang</b>	Yonsei University	Ouzo-based Conducting Polymer Nanostructures for High Performance EMI Shielding	South Korea
10:00-10:30	30	Invited	SO5-3	<b>Daehoon Han</b>	Chonnam National University	Multi-Material 4D Printing for Functional Heterostructures	South Korea
10:30-10:50	20	Oral	SO5-4	<b>Sung Woo Hong</b>	Korea Institute of Industrial Technology(KITECH)	Highly Transparent, Colorless Optical Film with Outstanding Mechanical Strength and Folding Reliability Using Mismatched Charge-Transfer Complex Intensification	South Korea

August 21 (WED)		[ Symposium 5. ] Session 02					Charlotte
14:40-18:10		210					
Chairperson(s)		<i>Dahl-Young Khang (Yonsei Univ.), Hyung Do Kim (Kyoto Univ.)</i>					
14:40-15:10	30	Keynote	SO5-5	<b>Yoon-Bong Hahn</b>	Jeonbuk National University	Functional Nanomaterials for High Performance Photovoltaics, Sensors and Printed Electronics	South Korea
15:10-15:40	30	Keynote	SO5-6	<b>Dae-Hyeong Kim</b>	Seoul National University	Flexible, Foldable, and Stretchable QLEDs	South Korea
15:40-16:10	30	Invited	SO5-7	<b>Hanul Min</b>	Korea University	Development Strategies for Highly Efficient and Stable Perovskite Solar Cells	South Korea
16:10-16:40	30	Invited	SO5-8	<b>Hyung Do Kim</b>	Kyoto University	Hole Transport Properties in Conjugated Polymer/Insulating Polymer Blend Films	Japan
16:40-17:10	30	Invited	SO5-9	<b>IL JEON</b>	Tohoku University, Sungkyunkwan University	Aerosol-synthesized Surfactant-free Single-Walled Carbon Nanotube-based NO2 Sensors: Unprecedentedly High Sensitivity and Fast Recovery	Japan
17:10-17:40	30	Invited	SO5-10	<b>Kihyun Kim</b>	Jeonbuk National University	Enhanced photoresponse of ZnO/silicon nanowire array heterojunction photodetector	South Korea
17:40-18:10	30	Invited	SO5-11	<b>Keun Heo</b>	Jeonbuk National University	Highly sensitive broadband MSM Photodetector on Wafer-scale CVD grown MoS2	South Korea

August 22 (THU)	[ Symposium 5. ] Session 03						Charlotte	
09:00-12:00	180							
Chairperson(s)	<i>Tae Wook Kim (Jeonbuk Nat'l Univ.), Oi Lun Helena Li (Pusan Nat'l Univ.)</i>							
09:00-09:30	30	Invited	SO5-12	<b>Sungjun Park</b>	Ajou University	Ultraflexible organic optoelectronic devices for E-skin	South Korea	
09:30-10:00	30	Invited	SO5-13	<b>Jangyup Son</b>	Korea Institute of Science and Technology(KIST)	Surface/Interface Engineering of 2D Materials via Chemical Functionalization	South Korea	
10:00-10:30	30	Invited	SO5-14	<b>Ji Eon Kwon</b>	Korea Institute of Science and Technology(KIST)	Organic Nanocomposite Materials for Sustainable Energy Storage Applications	South Korea	
10:30-11:00	30	Invited	SO5-15	<b>Byung Joon Moon</b>	Korea Institute of Science and Technology(KIST)	Chemical modulation of graphene quantum dots for their light-responsive applications	South Korea	
11:00-11:30	30	Invited	SO5-16	<b>Oi Lun Helena Li</b>	Pusan National University	Plasma-engineered Chlorine-repulsive Electrocatalysts for Seawater-based devices	South Korea	
11:30-12:00	30	Invited	SO5-17	<b>Gunuk Wang</b>	Korea University	A three-terminal vertical organic ferroelectric barristor for fast and energy-efficient neuromorphic computing	South Korea	

August 22 (THU)	[ Symposium 5. ] Session 04						Charlotte	
13:30-14:50	80							
Chairperson(s)	<i>Jangyup Son (KIST)</i>							
13:30-13:50	20	Oral	SO5-18	<b>Min Jin Kim</b>	Chonnam National University	Inorganic perovskite nanocrystal for superior non-aqueous photoelectrochemical nitrogen reduction reaction (PEC-NRR)	South Korea	
13:50-14:10	20	Oral	SO5-19	<b>Naechul Shin</b>	Inha University	Interface engineering of mixed-dimensional van der Waals heterostructures	South Korea	
14:10-14:30	20	Oral	SO5-20	<b>Eunsu Cho</b>	Pohang University of Science and Technology(POSTECH)	Torsional Actuating of Chiral-Selective Spindle Microparticles	South Korea	
14:30-14:50	20	Oral	SO5-21	<b>Jyoti Prakash Das</b>	Jeju National University	Moisture-enabled ionovoltaic power source for next-generation Self-powered IoTs	South Korea	

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

August 19 (MON)		[ Symposium 6. ] Session 01					Pearl
15:20-16:30	70						
Chairperson(s)		<i>Hong-joon Yoon (Gachon Univ.)</i>					
15:20-15:50	30	Invited	SO6-1	<b>Youngho Jin</b>	Chung-Ang University	Self-powered multi-functional systems for individual chemical protections	South Korea
15:50-16:10	20	Oral	SO6-2	<b>Noor Ul Haq Liyakath Ali</b>	Jeju National University	Decoupling the harmony of integrated structural-SC-TENG energy devices for real-world use in flexible and wearable electronics	South Korea
16:10-16:30	20	Oral	SO6-3	<b>Vishal Natraj</b>	Jeju National University	Exploring the Energy Harnessing and Ferroelectric Properties of Lithium Niobate/PDMS Composite Films for Knee Squat Analysis and Self-Powered Humidity Sensor	South Korea

August 20 (TUE)		[ Symposium 6. ] Session 02					Pearl
09:00-12:00	180						
Chairperson(s)		<i>Hanjun Ryu (Chung-Ang Univ.)</i>					
09:00-09:30	30	Keynote	SO6-4	<b>Philippe Basset</b>	Univ Gustave Eiffel	Conditioning systems for triboelectric nanogenerators	France
09:30-10:00	30	Invited	SO6-5	<b>Jaehyeong Bae</b>	Kyung Hee University	Innovations in solar energy: exploiting liquid-state photoacids for a new solar energy harvesting	South Korea
10:00-10:30	30	Invited	SO6-6	<b>Dong-Myeong Shin</b>	The University of Hong Kong	Power Manipulation of Droplet-based Triboelectric Nanogenerators	Hong Kong
10:30-11:00	30	Invited	SO6-7	<b>Zhengyang Huo</b>	Renmin University of China	Contact Electrification-induced Smart Personal Hygiene System	China
11:00-11:30	30	Invited	SO6-8	<b>Kyeong Nam Kim</b>	Daegu Gyeongbuk Institute of Science and Technology(DGIST)	Wearable Energy-Electronic Devices and Their Integration System Toward On-body Wearable Microgrids	South Korea
11:30-12:00	30	Invited	SO6-9	<b>Shi Hyeong Kim</b>	Korea Institute of Industrial Technology(KITECH)	Understanding piezoionic effect for chemo-mechanical energy harvesting	South Korea

August 20 (TUE)		[ Symposium 6. ] Session 03					Pearl
13:30-15:00	90						
Chairperson(s)		<i>Hong-joon Yoon (Gachon Univ.)</i>					
13:30-14:00	30	Keynote	SO6-10	<b>Unyong Jeong</b>	Pohang University of Science and Technology(POSTECH)	Design to Secure the Same Triboelectric Sensing Signals	South Korea
14:00-14:30	30	Invited	SO6-11	<b>Geon-Tae Hwang</b>	Pukyong National University	High-performance Magneto-Mechano-Electric Conversion Devices for Electronic Applications	South Korea
14:30-15:00	30	Invited	SO6-12	<b>Jihoon Chung</b>	Kumoh National Institute of Technology	Enhancing Mechanical and Electrical Performance of Triboelectric Nanogenerator Through Lubrication and Mechanical Design	South Korea

August 20 (TUE)		[ Symposium 6. ] Session 04					Pearl
16:00-18:00	120						
Chairperson(s)		<i>Hanjun Ryu (Chung-Ang Univ.)</i>					
16:00-16:30	30	Invited	SO6-13	<b>Sung Beom Cho</b>	Ajou University	Understanding Triboelectricity based on Stuck Charge Model	South Korea
16:30-17:00	30	Invited	SO6-14	<b>Seongpil An</b>	Sungkyunkwan University	Piezoelectric Composites Based on Electrospun Nanofibers for Ultrathin and Highly Flexible Piezoelectric Nanogenerators	South Korea
17:00-17:30	30	Invited	SO6-15	<b>Daewon Kim</b>	Kyung Hee University	Triboelectricity-Based Intelligent Sensing for Autonomous Power Systems	South Korea
17:30-18:00	30	Invited	SO6-16	<b>Hong-joon Yoon</b>	Gachon University	Ultrasound Energy Harvesting Devices for Long-Term Use	South Korea

August 21 (WED)		[ Symposium 6. ] Session 05					Pearl
09:00-10:10	70						
Chairperson(s)		<i>Hanjun Ryu (Chung-Ang Univ.)</i>					
09:00-09:30	30	Invited	SO6-17	<b>Yeonsik Choi</b>	Yonsei University	A Bioresorbable Pacemaker with Transient Closed-loop Systems	South Korea
09:30-09:50	20	Oral	SO6-18	<b>GEONJU CHOI</b>	Seoul National University of Science and Technology	Robust triboelectric output performances in harsh ambient based on nylon 66-based composite nanofibers	South Korea
09:50-10:10	20	Oral	SO6-19	<b>Jin Taek Lee</b>	Jeonbuk National University	Micro-sized pattern with nanoscale height printed on PDMS using a cost-effective glass substrate enhances the performance of Triboelectric Nanogenerator (TENG) as a Morse code generator	South Korea

## Symposium 7. Materials for Green Ammonia Cycling

August 20 (TUE)		[ Symposium 7. ] Session 01					Charlotte
09:00-12:00	180						
Chairperson(s)		<i>Yun Jeong Hwang (SNU), Kijung Yong (POSTECH)</i>					
09:00-09:40	40	Keynote	SO7-1	<b>Ib Chorkendorff</b>	Technical University of Denmark	Progress in thermal and electrochemical ammonia synthesis	Denmark
09:40-10:10	30	Invited	SO7-2	<b>Yun Jeong Hwang</b>	Seoul National University	Additives in the Electrolyte for the Li-mediated Nitrogen Reduction Reaction	South Korea
10:10-10:40	30	Invited	SO7-3	<b>Hee Jo Song</b>	Sejong University	Selective lithium-mediated electrochemical nitrogen reduction for green ammonia production	South Korea
10:40-11:00	20	Break		<b>Break</b>			
11:00-11:30	30	Invited	SO7-4	<b>Kijung Yong</b>	Pohang University of Science and Technology(POSTECH)	SEI Engineering for Enhancing Li-mediated N <sub>2</sub> Reduction	South Korea
11:30-12:00	30	Invited	SO7-5	<b>Jae Hyung Kim</b>	Korea Institute of Energy Research(KIER)	Li-mediated electrochemical N <sub>2</sub> activation toward NH <sub>3</sub> utilizing H <sub>2</sub> O as a proton source	South Korea

August 20 (TUE)		[ Symposium 7. ] Session 02					Charlotte
13:30-15:30	120						
Chairperson(s)		<i>Wooyul Kim (KENTECH), Hyeyoung Shin (Chungnam Nat'l Univ.)</i>					
13:30-14:00	30	Invited	SO7-6	<b>Youngkook Kwon</b>	Ulsan National Institute of Science and Technology(UNIST)	Electrochemical Interface Design for C-N Coupling Reaction	South Korea
14:00-14:30	30	Invited	SO7-7	<b>Yongju Yun</b>	Pohang University of Science and Technology(POSTECH)	Hydrogen Production via Ammonia Decomposition over Supported Catalysts	South Korea
14:30-15:00	30	Invited	SO7-8	<b>Yung-Jung Hsu</b>	National Yang Ming Chiao Tung University	Core@Shell and Yolk@Shell Nanocrystals for Hydrogen Production	Taiwan
15:00-15:30	30	Invited	SO7-9	<b>Tatsuya Kameyama</b>	Nagoya University	Generation of Sensitized Anodic Photocurrent by Chiral Gold Nanocolloids	Japan

August 20 (TUE)		[ Symposium 7. ] Session 03					Charlotte
16:00-17:30	90						
Chairperson(s)		<i>Yung-Jung Hsu (Nat'l Yang Ming Chiao Tung Univ.), Yongju Yun (POSTECH)</i>					
16:00-16:30	30	Invited	SO7-10	<b>Yan-Gu Lin</b>	National Synchrotron Radiation Research Center	Visualizing Catalytic Dynamics Process via Synchrotron Radiation Multi-Techniques	Taiwan
16:30-17:00	30	Invited	SO7-11	<b>Masaki Saruyama</b>	Kyoto University	Controlled Synthesis of Semiconductor-Cocatalyst Hybrid Nanostructure for Photocatalytic Water Splitting	Japan
17:00-17:30	30	Invited	SO7-12	<b>Chia-Yu Lin</b>	National Cheng Kung University	Sustainable hydrogen generation and organics hydrogenation over the nanostructured nicked-based modified electrode at neutral pH	Taiwan

## Symposium 8. Semiconductor Nanocrystal Quantum Dots

August 20 (TUE)		[ Symposium 8. ] Session 01- Optoelectronics with Semiconductor Nanocrystals Quantum Dots					Ruby
13:30-15:30	120						
Chairperson(s)		<i>Doh C. Lee (KAIST)</i>					
13:30-14:00	30	Keynote	SO8-1	<b>Yizheng Jin</b>	Zhejiang University	Managing the charge dynamics in Quantum-dot light-emitting diodes	China
14:00-14:25	25	Invited	SO8-2	<b>Namyong Ahn</b>	Yonsei University	Progress in Colloidal Quantum Dot Lasing	South Korea
14:25-14:50	25	Invited	SO8-3	<b>Satria Zulkarnaen Bisri</b>	Tokyo University of Agriculture and Technology	Tweaking Charge Carrier Transport in Colloidal Quantum Dot Superlattices	Japan
14:50-15:15	25	Invited	SO8-4	<b>Byeong Guk Jeong</b>	Pusan National University	Colloidal Heterovalent Nanocrystals with Interfacial Dipoles	South Korea
15:15-15:30	15	Oral	SO8-5	<b>Yong Woo Kwon</b>	Sungkyunkwan University	Surface State Modulation of ZnO Nanoparticles for Augmented Carrier Injection Efficiency in Quantum Dot Light-Emitting Diodes	South Korea

August 20 (TUE)		[ Symposium 8. ] Session 02- Patterning and Self-assembly of Semiconductor Nanocrystal Quantum Dots					Ruby
16:00-18:05	125						
Chairperson(s)		<i>Byeong Guk Jeong (Pusan Nat'l Univ.)</i>					
16:00-16:25	25	Invited	SO8-6	<b>Moon Sung Kang</b>	Sogang University	Direct and Indirect Photopatterning of Quantum Dots	South Korea
16:25-16:50	25	Invited	SO8-7	<b>Yeon Sik Jung</b>	Korea Advanced Institute of Science and Technology(KAIST)	Custom-Patterning of quantum dots via selective wetting and dewetting	South Korea
16:50-17:15	25	Invited	SO8-8	<b>Dahin Kim</b>	University of Seoul	Magnetic Alignment and Anisotropic Photoluminescence of Semiconductor Nanoplatelets in Liquid Crystals	South Korea
17:15-17:40	25	Invited	SO8-9	<b>Himchan Cho</b>	Korea Advanced Institute of Science and Technology(KAIST)	Nondestructive, High-Resolution Direct Optical Lithography of Colloidal Quantum Dots and Perovskite Nanocrystals	South Korea
17:40-18:05	25	Invited	SO8-10	<b>Hongseok Yun</b>	Hanyang University	Self-Assembly of Polymer-Coated Inorganic Nanocrystals	South Korea

August 21 (WED)		[ Symposium 8. ] Session 03 - Cd-free Semiconductor Nanocrystal Quantum Dots					Ruby
09:00-11:00	120						
Chairperson(s)		<i>Dahin Kim (Univ. of Seoul)</i>					
09:00-09:30	30	Keynote	SO8-11	<b>Sohee Jeong</b>	Sungkyunkwan University	Surface-originated weak quantum confinement in tetrahedral indium arsenide quantum dots	South Korea
09:30-09:55	25	Invited	SO8-12	<b>Hunter McDaniel</b>	UbiQD, Inc.	Harnessing the Power of Solar Energy with Quantum Dots	United States
09:55-10:20	25	Invited	SO8-13	<b>Taejong Paik</b>	Chung-Ang University	Colloidal Synthesis of Heavy pnictogen chalcogenides Nanocrystals	South Korea
10:20-10:45	25	Invited	SO8-14	<b>Min-Jae Choi</b>	Dongguk University	Aminophosphine-derived synthesis of green InP quantum dots	South Korea
10:45-11:00	15	Oral	SO8-15	<b>Chang Jiang</b>	Nagoya University	Synthesis of Less-toxic Multinary Ag-Mn-Sn-S Quantum Dots with Composition-dependent Energy Gap	Japan

August 21 (WED)	[ Symposium 8. ] Session 04 & 05 - Synthesis and Photophysics of Semiconductor Nanocrystal Quantum Dots						Ruby	
14:40-18:05	205							
Chairperson(s)	<i>Moon Sung Kang (Sogang Univ.)</i>							
14:40-15:10	30	Keynote	SO8-16	<b>Rong Chen</b>	Huazhong University of Science and Technology	Perovskite nanocrystal quantum dots for luminescent applications	China	
15:10-15:35	25	Invited	SO8-17	<b>Youngki Kim</b>	Pohang University of Science and Technology(POSTECH)	Controlled Synthesis of Optoelectronic Nanocrystals using Liquid Crystalline Templates	South Korea	
15:35-16:00	25	Invited	SO8-18	<b>Jaehoon Lim</b>	Sungkyunkwan University	Unlocking invisible defects in strained colloidal quantum dots	South Korea	
16:00-16:25	25	Invited	SO8-19	<b>Jongnam Park</b>	Ulsan National Institute of Science and Technology(UNIST)	Synthesis of surface-engineered quantum dots for optoelectronic and biological applications	South Korea	
16:25-16:50	25	Break		<b>Break</b>				
Chairperson(s)	<i>Byeong Guk Jeong (Pusan Nat'l Univ.)</i>							
16:50-17:15	25	Invited	SO8-20	<b>Diogo Almeida</b>	Universidade Estadual de Campinas	What is hidden underneath the inhomogeneously broadened emission spectra of colloidal nanocrystals ensemble?	Brazil	
17:15-17:40	25	Invited	SO8-21	<b>Ji-Sang Park</b>	Sungkyunkwan University	Computational understanding of nanocrystals: defects and surfaces	South Korea	
17:40-18:05	25	Invited	SO8-22	<b>Min Kim</b>	Jeonbuk National University	Surface Engineering of Perovskite Quantum Dots for Multifunctional Optoelectronic Applications	South Korea	



## Symposium 9. Advanced Biomaterials and Bioelectronics

August 19 (MON)		[ Symposium 9. ] Session 01					Ruby
15:20-17:20	120						
Chairperson(s)		<i>Tae-il Kim (SKKU)</i>					
15:20-15:50	30	Keynote	SO9-1	<b>Lan Yin</b>	Tsinghua University	Biodegradable materials for electronic medicine and biosensors	China
15:50-16:20	30	Invited	SO9-2	<b>Suck Won Hong</b>	Pusan National University	Designing Biointerfaces Using Biomimetic Materials for New Applications	South Korea
16:20-16:40	20	Oral	SO9-3	<b>Swati Panda</b>	Daegu Gyeongbuk Institute of Science and Technology(DGIST)	Biodegradable triboelectric nanogenerator based pathogenic bacteria detection using carbohydrate-protein interactions	South Korea
16:40-17:00	20	Oral	SO9-4	<b>Huong Dang</b>	Chosun University	Effect of functional amine surface of 3D Poly (lactic-co-glycolic-acid) scaffold on oral soft tissue regeneration	South Korea
17:00-17:20	20	Oral	SO9-5	<b>Su-Kyung KIM</b>	Korea University	Development of Neuromorphic Devices for Low-Power/Complex Stimulus Detection Based on Cross-linked Electrolyte	South Korea

August 20 (TUE)		[ Symposium 9. ] Session 02					Ruby
09:00-11:30	150						
Chairperson(s)		<i>Jaeyun Kim (SKKU)</i>					
09:00-09:30	30	Keynote	SO9-6	<b>Daishun Ling</b>	Shanghai Jiao Tong University	Dynamic Nano-Assemblies for Biological Sensing, Imaging and Therapy	China
09:30-10:00	30	Invited	SO9-7	<b>Jinmyoung Joo</b>	Ulsan National Institute of Science and Technology(UNIST)	Unraveling intracellular fate and autophagic clearance of biodegradable silica nanoparticles using multimodal imaging	South Korea
10:00-10:20	20	Oral	SO9-8	<b>Ruda Lee</b>	Kumamoto University	Gene delivery for overcoming multi-drug resistance breast cancer	Japan
10:20-10:50	30	Invited	SO9-9	<b>Sang Min Won</b>	Sungkyunkwan University	Ultrathin encapsulation for implantable flexible electronics	South Korea
10:50-11:10	20	Oral	SO9-10	<b>Sungwook Chung</b>	Pusan National University	Preparation of two-dimensional Fe <sub>3</sub> O <sub>4</sub> nanodisks and nanosheets transformed from $\alpha$ -Fe <sub>2</sub> O <sub>3</sub> analogues and their applications in magnetic field-assisted microalgal harvesting and biorefinery processes	South Korea
11:10-11:30	20	Oral	SO9-11	<b>Chang-Min Lee</b>	Chosun University	Combinatorial effects of surface amine plasma-treating and topographical change on the behavior of oral tissue cells	South Korea