Oral Presentation

Plenary Session						
August 22 (Mon)						
13:30-14:10	**Plenary Lecture 1**					Grand Ballroom
Chairperson(s)	***Yoon-Bong HAHN**, Professor, Jeonbuk National University*					
13:30-14:10	40	Plenary Lecture	Technical Challenges in the Development of Anion Exchange Membrane (AEM) Water Electrolysis System	Hoon Taek CHUNG	Executive Vice President, Hanwha Solutions	Korea
14:10-14:50	**Plenary Lecture 2**					Grand Ballroom
Chairperson(s)	***Yoon-Bong HAHN**, Professor, Jeonbuk National University*					
14:10-14:50	40	Plenary Lecture	Towards a Net Zero Carbon World through Innovation in Energy Materials	S. Ravi P. SILVA	Distinguished Professor, University of Surrey	United Kingdom
August 24 (Wed)						
08:30-09:10	**Plenary Lecture 3**					Grand Ballroom
Chairperson(s)	***Kijung Yong**, Professor, Pohang University of Science and Technology (POSTECH)*					
08:30-09:10	40	Plenary Lecture	Recent progress and challenges in halide perovskite solar cells	Sang Il SEOK	Professor, Ulsan National Institute of Science and Technology (UNIST)	Korea
09:10-09:50	**Plenary Lecture 4**					Grand Ballroom
Chairperson(s)	***Kijung Yong**, Professor, Pohang University of Science and Technology (POSTECH)*					
09:10-09:50	40	Plenary Lecture	New battery chemistry from conventional layered cathode materials for advanced lithium-ion batteries	Kisuk KANG	Professor, Seoul National University	Korea

[Symposium 1] "Materials for Hydrogen Fuel Production and CO2 conversion"						
August 22 (Mon)						
15:20-17:00	**[Symposium 1-1] "Materials for Hydrogen Fuel Production and CO2 conversion"**					Tulip+Cosmos
Chairperson(s)	***Ji-Hyun Jang**, Professor, Ulsan National Institute of Science and Technology (UNIST)*					
15:20-16:00	40	Keynote Speaker	Solar Hydrogen Production at Scale by Water Splitting	Jae Sung LEE	Ulsan National Institute of Science and Technology (UNIST)	Korea
16:00-16:30	30	Invited Speaker	Self-terminated electrodeposition of platinum group metal electrocatalysts	Sang Hyun AHN	Chung-Ang University	Korea
16:30-17:00	30	Invited Speaker	2D Materials and Metal-Organic Frameworks for Hydrogen Evolution Reaction	Soo Young KIM	Korea University	Korea
August 23 (Tue)						
08:50-11:50	**[Symposium 1-2] "Materials for Hydrogen Fuel Production and CO2 conversion"**					Tulip+Cosmos
Chairperson(s)	***Ji-Hyun Jang,** Professor, Ulsan National Institute of Science and Technology (UNIST)*					
08:50-09:30	40	Keynote Speaker	Solar Synthesis of Hydrogen Peroxide from Dioxygen	Wonyong CHOI	Korea Institute of Energy Technology (KENTECH)	Korea
09:30-10:00	30	Invited Speaker	Selective CO2 Reduction Reaction in zero-gap membrane electrode assembly	Yun Jeong HWANG	Seoul National University	Korea
10:00-10:30	30	Invited Speaker	Electrochemical hydrogen and ammonia production for carbon-free energy conversion and storage	Hyun S. PARK	Korea Institute of Science and Technology (KIST)	Korea
10:30-10:50	20	**Coffee Break**				
10:50-11:20	30	Invited Speaker	Comparison of hydrocarbon-based statistical and multi-block copolymers for polymer electrolyte membrane water electrolysis	Soonyong SO	Korea Research Institute of Chemical Technology (KRICT)	Korea
11:20-11:50	30	Invited Speaker	High-valent metal redox-mediated photoelectrochemical water splitting	Hyunwoong PARK	Kyungpook National University	Korea
11:50-13:30	100	**Lunch**				
13:30-15:30	**[Symposium 1-3] "Materials for Hydrogen Fuel Production and CO2 conversion"**					Tulip+Cosmos
Chairperson(s)	***Hyun S. PARK**, Principal Research Scientist, Korea Institute of Science and Technology (KIST)*					
13:30-14:00	30	Invited Speaker	Smart nano/bio materials for Hydrogen Fuel Production and CO2 Conversion	Suil IN	Daegu Gyeongbuk Institute of Science & Technology (DGIST)	Korea
14:00-14:30	30	Invited Speaker	Water electrolysis catalysts for membrane-electrode assembly	Hyunjoo LEE	Korea Advanced Institute of Science and Technology (KAIST)	Korea
14:30-15:00	30	Invited Speaker	Co-doping of Hematite for Unbiased Water Splitting Systems	Ji-Hyun JANG	Ulsan National Institute of Science and Technology (UNIST)	Korea
15:00-15:30	30	Invited Speaker	Symmetry Breaking of Atom Configurations in Complex Oxides for Efficient Oxygen Evolution Electrocatalysis	Sung-Yoon CHUNG	Korea Advanced Institute of Science and Technology (KAIST)	Korea
15:30-15:50	20	**Coffee Break**				
15:50-17:50	**[Symposium 1-4] "Materials for Hydrogen Fuel Production and CO2 conversion"**					Tulip+Cosmos
Chairperson(s)	***Hyun S. PARK**, Principal Research Scientist, Korea Institute of Science and Technology (KIST)*					
15:50-16:10	20	Oral Presentation	Key Strategies to Advance Solar to Chemical Conversion Performance	Ji-Wook JANG	Ulsan National Institute of Science and Technology (UNIST)	Korea
16:10-16:30	20	Oral Presentation	Low-cost p-type semiconductors for photoelectrochemical water splitting: from synthesis to advanced device characterizations	Wooseok YANG	Sungkyunkwan University	Korea
16:30-16:50	20	Oral Presentation	Design of Metal-Organic Polyhedra for Photocatalytic CO2 Conversion	Kyungmin CHOI	Sookmyung Women University	Korea
16:50-17:10	20	Oral Presentation	Strategies for Practical Photoelectrochemical Water Splitting Based on Low-cost Materials	Min-Kyu SON	Korea Institute of Ceramic Engineering & Technology (KICET)	Korea
17:10-17:30	20	Oral Presentation	Desalination and Water electrolysis using an AEM/CEM hybrid electrochemical system	Jae Wook LEE	Sungkyunkwan University	Korea
17:30-17:50	20	Oral Presentation	Facile Fabrication of High-Performance Gas Diffusion Electrode with FeP Nanoparticle Catalysts for Proton Exchange Membrane Water Electrolyzer	Yoonsu PARK	Chung-Ang University	Korea

[Symposium 2] "Advanced Materials for Electrochemical Energy Storage"

August 22 (Mon)						
15:20-17:50	**[Symposium 2-1] "Advanced Materials for Electrochemical Energy Storage"**					Grand Ballroom B
Chairperson(s)	***Yongchai KWON**, Professor, Seoul National University of Science and Technology*					
15:20-15:50	30	Invited Speaker	Fast-charging protocols of Li-ion batteries to fully utilize material capabilities	Juhyun SONG	Korea Institute of Energy Technology (KENTECH)	Korea
15:50-16:20	30	Oral Presentation	Aqueous Redox Flow Batteries using Lawsone and Iodide as Redox Couple	Gyunho PARK	Seoul National University of Science and Technology	Korea
16:20-16:50	30	Oral Presentation	Markovian formulation of lithium-ion battery degradation model	Min Kyu SIM	Seoul National University of Science and Technology	Korea
16:50-17:20	30	Oral Presentation	Synergistic effects of multi-doped anode material For battery application	Kue-Ho KIM	Seoul National University of Science and Technology	Korea
17:20-17:50	30	Oral Presentation	The performance and stability evaluations of aqueous redox flow batteries using iron-based metal-organic complexes	Mingyu SHIN	Seoul National University of Science and Technology	Korea
August 23 (Tue)						
09:30-11:50	**[Symposium 2-2] "Advanced Materials for Electrochemical Energy Storage"**					Grand Ballroom B
Chairperson(s)	***Jang Wook CHOI,** Professor, Seoul National University*					
09:30-10:00	30	Invited Speaker	Analysis and design of cathode-solid electrolyte interface for all-solid-state batteries	Sung-Kyun JUNG	Ulsan National Institute of Science and Technology (UNIST)	Korea
10:00-10:30	30	Invited Speaker	Efficient control of ion flux in nanostructures for Electrochemical Energy Storage	Hyung Mo JEONG	Sungkyunkwan University	Korea
10:30-10:50	20	**Coffee Break**				
10:50-11:20	30	Invited Speaker	First-principles study on the stabilization of oxidized lattice oxygen for high-energy Li-rich cathodes	Dong-Hwa SEO	Ulsan National Institute of Science and Technology (UNIST)	Korea
11:20-11:50	30	Invited Speaker	Design and analysis of advanced electrolytes for low temperature and fast charging lithium ion batteries	Dong-Joo YOO	Korea University	Korea
11:50-13:30	100	**Lunch**				
13:30-15:10	**[Symposium 2-3] "Advanced Materials for Electrochemical Energy Storage"**					Grand Ballroom B
Chairperson(s)	***Ji Hoon LEE,** Professor, Kyungpook National University*					
13:30-14:10	40	Invited Speaker	Exploration of New Manganese-based Cathodes for Secondary Batteries	Prabeer BARPANDA	Indian Institute of Science	India
14:10-14:40	30	Oral Presentation	Corrosion as the origin of limited lifetime of vanadium oxide-based aqueous zinc ion batteries	Yangmoon KIM	Seoul National University	Korea
14:40-15:10	30	Oral Presentation	Design and operation of a zinc-manganese flow battery with the 3-electrolyte chambers for a high discharging potential and energy density	Byeongkyu KIM	Sungkyunkwan University	Korea
15:10-15:50	40	**Coffee Break**				
15:50-17:30	**[Symposium 2-4] "Advanced Materials for Electrochemical Energy Storage"**					Grand Ballroom B
Chairperson(s)	***Sung-Kyun JUNG,** Professor, Ulsan National Institute of Science and Technology (UNIST)*					
15:50-16:30	40	Keynote Speaker	Rationales Towards Higher Energy Density (Online)	Atsuo YAMADA	The University of Tokyo	Japan
16:30-17:00	30	Oral Presentation	Study of amorphous Nickel cobaltite shell over crystalline - core Nickel Cobaltite nanoneedles for supercapacitive performance	Amarnath T. SIVAGURUNATHAN	Chonnam National University	Korea
17:00-17:30	30	Oral Presentation	First-Principles Study on the Effect of Zirconium or Molybdenum Doping to Stabilize a Ni-Rich LiNi0.89Co0.055Mn0.055O2 Cathode Material for Lithium-Ion Batteries	Arindam SANNYAL	Pusan National University	Korea

[Symposium 3]"Advanced Materials for Next Generation Photovoltaics"

August 23 (Tue)

09:00-12:00	**[Symposium 3-1]"Advanced Materials for Next Generation Photovoltaics"**					Peony
Chairperson(s)	***Sewoong BAEK,*** *Professor, Korea University*					
09:00-09:30	30	Invited Speaker	Conjugated polymers and polyelectrolytes for application in organic/inorganic electronic devices	Han Young WOO	Korea University	Korea
09:30-10:00	30	Invited Speaker	Emerging design of π-conjugated polymers for efficient organic solar cells	Itaru OSAKA	Hiroshima University	Japan
10:00-10:30	30	Invited Speaker	Solar Carbazole : a toolbox to reach high efficiency	Bruno SCHMALTZ	University of Tours	France
10:30-11:00	30	Invited Speaker	Immobilisation of conjugated polymer domains for highly stable non-fullerene-based organic solar cell	Kyungkon KIM	Ewha Womans University	Korea
11:00-11:30	30	Invited Speaker	Overcoming Doping Challenges in Organic Electronics: Materials & Device Perspectives	Keehoon KANG	Seoul National University	Korea
11:30-12:00	30	Invited Speaker	Understanding the role of anions in hole transport layers for organic and hybrid solar cells	Bright WALKER	Kyung Hee University	Korea
12:00-13:30	90	**Lunch**				
13:30-15:30	**[Symposium 3-2]"Advanced Materials for Next Generation Photovoltaics"**					Peony
Chairperson(s)	***Keehoon KANG,*** *Professor, Seoul National University*					
13:30-14:00	30	Invited Speaker	High-performance colorful semitransparent organic solar cells with Fabry-Pé rot etalon electrodes	Jin Young KIM	Ulsan National Institute of Science and Technology (UNIST)	India
14:00-14:30	30	Invited Speaker	Organic-inorganic hybrid polyelectrolytes as interfacial layers in organic and perovskite optoelectronics	Jung Hwa SEO	University of Seoul	Korea
14:30-15:00	30	Invited Speaker	Analysis of Bending Damage Mechanism of Flexible Electronic Device	Eun-chae JEON	University of Ulsan	Korea
15:00-15:15	15	Oral Presentation	A new age carbon electrode for flexible perovskite solar cells	Woraprom PASSATORNTASCHA KORN	Chiang Mai University	Thailnad
15:15-15:30	15	Oral Presentation	Green solvent-processable non-toxic colloidal quantum dot optoelectronics	Minjae SI	Korea University	Korea
15:30-15:50	20	**Coffee Break**				
15:50-18:20	**[Symposium 3-3]"Advanced Materials for Next Generation Photovoltaics"**					Peony
Chairperson(s)	***Himchan CHO,*** *Professor, Korea Advanced Institute of Science and Technology (KAIST)*					
15:50-16:20	30	Invited Speaker	Emerging Perovskites-based Tandem Solar Cells: towards efficient, stable, and commercially viable photovoltaics	Yi HOU	National University of Singapore	Singapore
16:20-16:50	30	Invited Speaker	Chemical Design to Stabilize Lead Halide Perovskite toward Efficient Optoelectronics	Yixin ZHAO	Shanghai Jiao Tong University	China
16:50-17:20	30	Invited Speaker	Molecular engineering of interface modifier for efficient and stable perovskite solar cells	Jangwon SEO	Korea Advanced Institute of Science and Technology (KAIST)	Korea
17:20-17:50	30	Invited Speaker	Interface Study of Perovskite Solar Cells for Various Solar Cell Applications	Donghoe KIM	Korea University	Korea
17:50-18:05	15	Oral Presentation	Sb2Se3 thin films and solar cells fabrication by selenization of Sb precursors	Vasudeva Reddy MINNAM REDDY	Yeungnam University	Korea
18:05-18:20	15	Oral Presentation	Highly efficient AgBiS2 colloidal nanocrystal/organic hybrid solar cells	Changjo KIM	Korea Advanced Institute of Science and Technology (KAIST)	Korea

August 24 (Wed)

10:20-12:05	**[Symposium 3-4]"Advanced Materials for Next Generation Photovoltaics"**					Peony
Chairperson(s)	***Donghoe KIM,*** *Professor, Korea University*					
09:50-10:20	30	**Coffee Break**				
10:20-10:50	30	Invited Speaker	Perovskite Quantum Dot Solar Cells: Where Perovskite Meets Nanotechnology	Wanli MA	Soochow University	China
10:50-11:20	30	Invited Speaker	Conductive and Thick Fully-Inorganic Perovskite Colloidal Quantum Dot Solids for Efficient Photovoltaics	Younghoon KIM	Kookmin University	Korea
11:20-11:35	15	Oral Presentation	Suppression of charge accumulation through the interface band engineering for efficient colloidal quantum dot solar cell	Sangyeon LEE	Korea Advanced Institute of Science and Technology (KAIST)	Korea
11:35-11:50	15	Oral Presentation	Efficient hybrid colloidal quantum dot/organic solar cells mediated by near-infrared sensitizing small molecules	Byeongsu KIM	Korea Advanced Institute of Science and Technology (KAIST)	Korea
11:50-12:05	15	Oral Presentation	PbS Colloidal Quantum Dot-based Photodetectors at 1,550nm	Yongnam AHN	Korea University	Korea
12:05-13:30	85	**Lunch**				
13:30-15:30	**[Symposium 3-5]"Advanced Materials for Next Generation Photovoltaics"**					Peony
Chairperson(s)	***Younghoon KIM,*** *Professor, Kookmin University*					
13:30-14:00	30	Invited Speaker	Extended SWIR and MWIR Sensitive Colloidal Quantum Dots	Kwang Seob JEONG	Korea University	Korea
14:00-14:30	30	Invited Speaker	Direct Optical Patterning of Quantum Dot Materials and Optoelectronic Devices	Himchan CHO	Korea Advanced Institute of Science and Technology (KAIST)	Korea
14:30-14:45	15	Oral Presentation	Band Edge Positions of Colloidal Quantum Dots with Mixed-Ligand Shells	Mahnmin CHOI	Sungkyunkwan University	Korea
14:45-15:00	15	Oral Presentation	Recent Research into Colloidal InAs Quantum Dot for Photovoltaics: Expansion of Spectral Coverage and Design of Multifunctional Carrier Transport Layer	Taewan KIM	Sungkyunkwan University	Korea
15:00-15:15	15	Oral Presentation	Zinc Doped p-Type Indium Arsenide Colloidal Quantum Dots	Hyoin KIM	Sungkyunkwan University	Korea
15:15-15:30	15	Oral Presentation	Defect Passivation of Quasi-2D Perovskite Layers Using Phosphine Oxide-Assisted Nanocrystal Pinning	Seungmin SHIN	Korea Advanced Institute of Science and Technology (KAIST)	Korea

[Symposium 4] "Advanced Materials for Fuel Cells and Electrolysis"

August 24 (Wed)

13:30-15:30	**[Symposium 4-1] "Advanced Materials for Fuel Cells and Electrolysis"**					Rose+Lilac
Chairperson(s)	***Chanho PAK,*** *Professor, Gwangju Institute of Science and Technology (GIST)*					
13:30-14:00	30	Invited Speaker	Selective electrocatalysis imparted by metal-insulator transition for durability enhancement of automotive fuel cells during repetitive start-up and shut-down (SU/SD) event	Yong-Tae KIM	Pohang University of Science and Technology (POSTECH)	Korea
14:00-14:30	30	Invited Speaker	Low temperature water electrolysis tehcnologly for green hydrogen production	Hyun-Seok CHO	Korea Institute of Energy Research (KIER)	Korea
14:30-14:50	20	Oral Presentation	Atomic Layer Deposition for Nano-scale Platinum Catalysts	Soonwook HONG	Chonnam National University	Korea
14:50-15:10	20	Oral Presentation	Operando stability of Fe-N-C electrocatalysts for proton exchange membrane fuel cells	Geunsu BAE	Pohang University of Science and Technology (POSTECH)	Korea
15:10-15:30	20	Oral Presentation	A universal screening strategy for the accelerated design of superior oxygen evolution/reduction electrocatalysts	Dong Yeon KIM	Ulsan National Institute of Science and Technology (UNIST)	Korea
15:30-15:50	20	**Coffee Break**				
15:50-16:30	**[Symposium 4-2] "Materials for Hydrogen Fuel Production and CO2 conversion"**					Rose+Lilac
Chairperson(s)	***Jinwoo LEE,*** *Professor, Korea Advanced Institute of Science and Technology (KAIST)*					
15:50-16:10	20	Oral Presentation	Recent Progress on Advanced Manufacturing for High Performed LSGM based Solid Oxide Cells	Sang Won LEE	Korea Institute of Ceramic Engineering and Technology (KICET)	Korea
16:10-16:30	20	Oral Presentation	A study on new doped ceria materials, Gd0.135 Yb0.015Bi0.02Ce0.83O1.915 (GYBC), as a reaction barrier for SOCs.	Hyeyoung KIM	Korea Institute of Ceramic Engineering and Technology (KICET)	Korea
16:50-17:50	**[Symposium 4-3] "Materials for Hydrogen Fuel Production and CO2 conversion"**					Rose+Lilac
Chairperson(s)	***Yongchai KWON,*** *Professor, Seoul National University of Science and Technology*					
16:50-17:20	30	Invited Speaker	Electrochemical and chemical Pt dissolutions in fuel cells	Chang Hyuck CHOI	Pohang University of Science and Technology (POSTECH)	Korea
17:20-17:50	30	Invited Speaker	Impact of PFSA ionomer molecular structure on PEMFC performance and durability: Catalyst slurry and rheological perspectives	Chiyoung JUNG	Korea Institute of Energy Research (KIER)	Korea

August 25 (THU)

09:00-10:30	**[Symposium 4-4] "Advanced Materials for Fuel Cells and Electrolysis"**					Rose+Lilac
Chairperson(s)	***Jinwoo LEE,*** *Professor, Korea Advanced Institute of Science and Technology (KAIST)*					
09:00-09:30	30	Invited Speaker	Development of advanced water oxidation catalyst for proton exchange membrane water electrolyzer	Chanho PAK	Gwangju Institute of Science and Technology (GIST)	Korea
09:30-10:00	30	Invited Speaker	Atomically Dispersed Metal Electrocatalysts Promoting Selective Renewable Energy Conversion Reactions	Sang Hoon JOO	Ulsan National Institute of Science and Technology (UNIST)	Korea
10:00-10:30	30	Invited Speaker	Development of NiMo based electrocatalysts for alkaline hydrogen evolution	Hansung KIM	Yonsei University	Korea
10:30-10:50	20	**Coffee Break**				
10:50-11:40	**[Symposium 4-5] "Advanced Materials for Fuel Cells and Electrolysis"**					Rose+Lilac
Chairperson(s)	***Sang Hoon JOO,*** *Professor, Ulsan National Institute of Science and Technology (UNIST)*					
10:50-11:20	30	Invited Speaker	Atomically Dispersed Electrocatalysts for Low Temperature Fuel Cells and Water Electrolysis	Jinwoo LEE	Korea Advanced Institute of Science and Technology (KAIST)	Korea
11:20-11:40	20	Oral Presentation	Highly Selective Atomically Dispersed Pt Catalysts and Their Kinetics for the Chlorine Evolution Reaction	Taejung LIM	Ulsan National Institute of Science and Technology (UNIST)	Korea
11:40-13:30	110	**Lunch**				
13:30-15:10	**[Symposium 4-6] "Advanced Materials for Fuel Cells and Electrolysis"**					Rose+Lilac
Chairperson(s)	***Chang Hyuck CHOI,*** *Professor, Pohang University of Science and Technology (POSTECH)*					
13:30-13:50	20	Oral Presentation	Structural and electronic analysis of amorphous water oxidation catalysts	Gihan KWON	Brookhaven National Laboratory	USA
13:50-14:10	20	Oral Presentation	Carbon-neutralized direct alcohol fuel cell using bi-functional (alcohol oxidation/CO2 reduction) electrodes	Yong Seok KIM	Sungkyunkwan University	Korea
14:10-14:30	20	Oral Presentation	W-doped TiO2 Supported Pt: A Highly Stable Electrocatalyst for Oxygen Reduction Reaction	Toan Minh PHAM	Kyunghee University	Korea
14:30-14:50	20	Oral Presentation	Formation of Fe-rich NiFe LDH by oxygen corrosion for exceptional operational stability in a water electrolysis system	Muhammad MEHDI	Korea Institute of Energy Research (KIER)	Korea
14:50-15:10	20	Oral Presentation	Understanding the effects and mechanisms of sacrificial Mn in transition phosphide electrodes on the stability of discontinuous water electrolysis operation	Ik-Sun KIM	Chungbuk National University	Korea
15:10-15:50	40	**Coffee Break**				
15:50-17:30	**[Symposium 4-7] "Advanced Materials for Fuel Cells and Electrolysis"**					Rose+Lilac
Chairperson(s)	***Yong-Tae KIM,*** *Professor, Pohang University of Science and Technology (POSTECH)*					
15:50-16:20	30	Invited Speaker	An effective, direct breakthrough to the material challenges of protonic ceramic fuel cells: multiscale structuring and thin-film deposition	Kiho BAE	Korea Institute of Energy Technology (KENTECH)	Korea
16:20-16:50	30	Invited Speaker	Fabrication and characterization of nano-porous template based low temperature solid oxide fuel cells and stacks	Gu Young CHO	Dankook University	Korea
16:50-17:10	20	Oral Presentation	Surface modification by Powder ALD for Conformal Sr-Exsolution Suppression on LSCF Solid Oxide Fuel Cell Electrode	Sung Eun CHO	Seoul National University of Science and Technology	Korea
17:10-17:30	20	Oral Presentation	The Effect of Oxygen Capacity of Inter-diffusion layer on the Durability of Zirconia based Electrolyte Supported Solid Oxide Cells	Dong Nguyen XUAN	Korea Institute of Ceramic Engineering and Technology (KICET)	Korea

[Symposium 5] "Frontiers of Functional Nanomaterials for Eco-friendly Devices Applications (Special symposium in honor of Prof. Yoon-Bong Hahn, Jeonbuk National University)"

August 22 (Mon)

15:20-18:10	**[Symposium 5-1] "Frontiers of Functional Nanomaterials for Eco-friendly Devices Applications (Special symposium in honor of Prof. Yoon-Bong Hahn, Jeonbuk National University)"**					Rose+Lilac
Chairperson(s)	***S. Ravi P. SILVA,*** *Professor, University of Surrey* ***Yeon Ho Im*** *, Professor, Jeonbuk National University*					
15:20-16:00	40	Keynote Speaker	Advances in Functional Nanomaterials for High Performance Solar Cells, Sensors and Optoelectronic Devices	Yoon-Bong HAHN	Jeonbuk National University	Korea
16:00-16:30	30	Keynote Speaker	Reducing Material Search Space and Enhancing Material Properties Using NSMM and E-field Dipole Engineering (E-DENS) at the Nanoscale	Steven C. TIDROW	Alfred University	USA
16:30-16:55	25	Invited Speaker	Process simulation platform toword next-generation nanodvice fabrication	Yeon Ho IM	Jeonbuk National University	Korea
16:55-17:20	25	Invited Speaker	Rational Synthesis of Advanced Functional Nanomaterials for Renewable Energ	Ahsanulhaq QURASHI	Khalifa University of Science and Technology	United Arab Emirates
17:20-17:45	25	Invited Speaker	Current Status and Future Works of High Power Deep UV LEDs	Rakjun CHOI	SL Vionics	Korea
17:45-18:10	25	Invited Speaker	InGaN Based Micro-Light-Emitting Diode Technologies	Tak JEONG	Korea Photonics Technology Institute (KOPTI)	Korea

August 23 (Tue)

09:30-11:55	**[Symposium 5-2] "Frontiers of Functional Nanomaterials for Eco-friendly Devices Applications"**					Rose+Lilac
Chairperson(s)	***Tae-Wook KIM,*** *Professor, Jeonbuk National University* ***Sukang BAE****, Dr, Korea Institute of Science and Technology (KIST)*					
09:00-09:30	30	Keynote Speaker	ATOMIC LAYER DEPOSITION (ALD): A MULTIFUNCTIONAL TOOL	Do-Heyoung KIM	Chonnam National University	Korea
09:30-09:55	25	Invited Speaker	Recent progress in Si-PEDOT:PSS hybrid solar cells	Dahl-Young KHANG	Yonsei University	Korea
09:55-10:20	25	Invited Speaker	Suppression of Sn2+/Sn4+ Oxidation in Tin-Based Perovskite Solar Cells with Graphene-Tin Quantum Dots Composites in Active Layer	Tahmineh MAHMOUDI	Jeonbuk National University	Korea
10:20-10:50	30	**Coffee Break**				
10:50-11:15	25	Invited Speaker	Nanostructure and Surface Engineering of Perovskite Materials for Multifunctional Optoelectronics Applications	Min KIM	Jeonbuk National University	Korea
11:15-11:40	25	Invited Speaker	Laser-assisted Photothermal Synthesis for Functional Two-dimensional materials and its Application	Seoung-Ki LEE	Pusan National University	Korea
11:40-11:55	15	Oral Presentation	Real-Time In Situ Analysis for Understanding Macroscopic Nanoparticles Dynamics Under a Non-Uniform DC Field	Wooseok JEONG	Chung-Ang University	Korea
11:55-13:30	95	**Lunch**				
13:30-15:30	**[Symposium 5-3] "Frontiers of Functional Nanomaterials for Eco-friendly Devices Applications"**					Rose+Lilac
Chairperson(s)	***Min KIM,*** *Professor, Jeonbuk National University* ***Seoung-Ki LEE,*** *Professor , Pusan National University*					
13:30-14:00	30	Keynote Speaker	Flexible supercapacitors with novel functionality for wearable electronics	Jeong Sook HA	Korea University	Korea
14:00-14:25	25	Invited Speaker	Organic Ferroelectric Transistors for Conformable data Storage Media in Wearable Electronic Applications	Tae-Wook KIM	Jeonbuk National University	Korea
14:25-14:50	25	Invited Speaker	One-step synthesis and property control of the nitrogenated graphene quantum dots	Sukang BAE	Korea Institute of Science and Technology (KIST)	Korea
14:50-15:15	25	Invited Speaker	Vanadium dioxide (VO2) Based Metal-Insulator Transition (MIT) Ink for Fully Printed Reconfigurable Devices	Mohammad VASEEM	King Abdullah University of Science & Technology (KAUST)	Saudi Arabia
15:15-15:30	15	Oral Presentation	A study on real-time Pesticide detection via effective surface functionalization in a solid-state FET biosensor	Mehtab MUHAMMAD	Jeonbuk National University	Korea
15:30-15:50	20	**Coffee Break**				
15:50-18:20	**[Symposium 5-4] "Frontiers of Functional Nanomaterials for Eco-friendly Devices Applications"**					Rose+Lilac
Chairperson(s)	***Chel-Jong CHOI,*** *Professor, Jeonbuk National University,* ***Jaehee CHO*** *, Professor, Jeonbuk National University*					
15:50-16:15	25	Invited Speaker	Opto-electrical Properties of Metal-semiconductor-metal Photodetector with Interdigitated Graphene Finger Electrodes Fabricated on Ge Epilayer Grown on Si Substrate	Chel-Jong CHOI	Jeonbuk National University	Korea
16:15-16:40	25	Invited Speaker	GaInN light-emitting diodes with micro-rods and micro-lenses fabricated by direct optical wiring technology	Jaehee CHO	Jeonbuk National University	Korea
16:40-17:00	20	Oral Presentation	PbI2 van der Waals Nanowires: Tunable Stacking Orientations and Optoelectronics	Naechul SHIN	Inha University	Korea
17:00-17:20	20	Oral Presentation	Temperature dependence of radiative recombination time in localized states in a single quantum ring	Heedae KIM	Jeonbuk National University	Korea
17:20-17:40	20	Oral Presentation	Metal organic framework (MOF)-driven full spectrum Ag2S@Co1-xS@Co9S8 catalyst system for degradation of berberine chloride as aqueous micropollutants	Sangeeta ADHIKARI	Chonnam National University	Korea
17:40-18:00	20	Oral Presentation	Highly Sensitive Capacitive Strain Sensor Using Polymeric Microfiber Matrix for Real-Time Motion Detection	Jagan Singh MEENA	Jeonbuk National University	Korea
18:00-18:20	20	Oral Presentation	The enzyme-based catalysts using transition metal complex for enzymatic biofuel cells	Jungyeon JI	Seoul National University of Science and Technology	Korea

[Symposium 6] "Electromechanical Coupling Materials for Nanogenerators and Self-powered Electronics"

August 23 (Tue)

09:30-11:45	**[Symposium 6-1] "Electromechanical Coupling Materials for Nanogenerators and Self-powered Electronics"**					Grand Ballroom A
Chairperson(s)	***Sang-Woo KIM,*** *Professor, Sungkyunkwan University,* ***Miso KIM,*** *Professor, Sungkyunkwan University*					
09:30-10:00	30	Keynote Speaker	Three Approaches to Enhance Piezoelectric Energy Harvesting	Chong-Yun KANG	Korea Institute of Science and Technology (KIST)	Korea
10:00-10:25	25	Invited Speaker	Optimization of output performance of Magneto-Mechano-Electric Generators	Jungho RYU	Yeungnam University	Korea
10:25-10:50	25	**Coffee Break**				
10:50-11:15	25	Invited Speaker	Modulated Piezoelectric Effects from Ceramic Nanoparticles to Biopolymer Nanofibers for Nanogenerators	Chang Kyu JEONG	Jeonbuk National University	Korea
11:15-11:30	15	Oral Presentation	Enhanced Output Performance of MoS2 Monolayer-based Piezoelectric Nanogenerator by Concentrated Strain	Pin ZHAO	Sungkyunkwan University	Korea
11:30-11:45	15	Oral Presentation	Fiber Morphology Control induced by Ambient Humidity driven Phase Separation for Self-powered Piezoelectric Sensor	Dabin KIM	Sungkyunkwan University	Korea
11:45-13:30	105	**Lunch**				
13:30-15:15	**[Symposium 6-2] "Electromechanical Coupling Materials for Nanogenerators and Self-powered Electronics"**					Grand Ballroom A
Chairperson(s)	***Chang Kyu JEONG,*** *Professor, Jeonbuk National University*					
13:30-13:55	25	Invited Speaker	Autonomous Resonance Tuning Mechanism for Environmental Adaptive Energy Harvesting	Hyun-Cheol SONG	Korea Institute of Science and Technology (KIST)	Korea
13:55-14:20	25	Invited Speaker	Phononic Crystals and Metamaterials for Sustainable Power Generation	Miso KIM	Sungkyunkwan University	Korea
14:20-14:45	25	Invited Speaker	Robotics application of nanogenerators and self-powered tactile sensors.	Hoe Joon KIM	Daegu Gyeongbuk Institute of Science & Technology (DGIST)	Korea
14:45-15:00	15	Oral Presentation	Ultrasound-mediated triboelectric nanogenerator as energy solution of on-demand transient electronics	Dong-Min LEE	Sungkyunkwan University	Korea
15:00-15:15	15	Oral Presentation	Dust cleaning system by wind-driven TENG for sustainable solar energy harvesting	Minsu HEO	Daegu Gyeongbuk Institute of Science & Technology (DGIST)	Korea
15:15-15:50	35	**Coffee Break**				
15:50-17:20	**[Symposium 6-3] "Electromechanical Coupling Materials for Nanogenerators and Self-powered Electronics"**					Grand Ballroom A
Chairperson(s)	***Hoe Joon KIM,*** *Professor, Daegu Gyeongbuk Institute of Science & Technology (DGIST)*					
15:50-16:15	25	Invited Speaker	Mechanical Conversion and Transmission Systems for Triboelectric Nanogenerators (TENGs)	Dukhyun CHOI	Sungkyunkwan University	Korea
16:15-16:40	25	Invited Speaker	Polymer based triboelectric nanogenerators and their applications	Ju-Hyuck LEE	Daegu Gyeongbuk Institute of Science & Technology (DGIST)	Korea
16:40-17:05	25	Invited Speaker	Thermoelectric energy harvesting in functional nanocomposites	Kyungwho CHOI	Hankuk Aviation University	Korea
17:05-17:20	15	Oral Presentation	Controlling the local dipole for highly positive triboelectric material	Donghyeon KANG	Sungkyunkwan University	Korea

August 24 (Wed)

10:20-11:40	**[Symposium 6-4] "Electromechanical Coupling Materials for Nanogenerators and Self-powered Electronics"**					Grand Ballroom A
Chairperson(s)	***Dongwhi CHOI,*** *Professor, Kyung Hee University*					
09:50-10:20	30	**Coffee Break**				
10:20-10:45	25	Invited Speaker	Bioinspired Biomaterial based Piezoelectricity	Ju Hun LEE	Hanyang University	Korea
10:45-11:10	25	Invited Speaker	Rotational Triboelectric Nanogenerator for Physiological Modulation of Leg Muscle	Sanghoon LEE	Daegu Gyeongbuk Institute of Science & Technology (DGIST)	Korea
11:10-11:25	15	Oral Presentation	Electric antibacterial usage under soft tissue by ultrasound-based triboelectric nanogenerator	Iman Mohammadi IMANI	Sungkyunkwan University	Korea
11:25-11:40	15	Oral Presentation	A fully degradable and injectable triboelectric nanogenerator driven by ultrasound	Xiao XIAO	Sungkyunkwan University	Korea
11:40-13:30	110	**Lunch**				
13:30-15:30	**[Symposium 6-5] "Electromechanical Coupling Materials for Nanogenerators and Self-powered Electronics"**					Grand Ballroom A
Chairperson(s)	***Hanjun RYU, Professor, Chung-Ang University***					
13:30-13:55	25	Invited Speaker	Synergy effect through convergence of classical mechanics and state-of-the-art triboelectric signal generation mechanism	Dongwhi CHOI	Kyung Hee University	Korea
13:55-14:20	25	Invited Speaker	Lifetime prediction of a vertically installed magneto-mechano-electric generator for sustainable powering of Internet of Things sensor	Jongmoon JANG	Korea Institute of Materials Science (KIMS)	Korea
14:20-14:45	25	Invited Speaker	Energy Harvesting Metamaterials for Self-Powered Sensors	Hojin LEE	Soongsil University	Korea
14:45-15:00	15	Oral Presentation	High Performance Triboelectric Nanogenerators Via High Permittivity Composite of CaCu3Ti4O12 Particle Inducing Internal Polarization Amplification	In-Yong SUH	Sungkyunkwan University	Korea
15:00-15:15	15	Oral Presentation	Direct current triboelectric nanogenerator based on interfacial treatment of dynamic p-n junction	You-sun LEE	Sungkyunkwan University	Korea
15:15-15:30	15	Oral Presentation	Investigation on the Origin of Tribo-negative Nature of Polytetrafluoroethylene: Ab-initio Approach	Sera JEON	Sungkyunkwan University	Korea
15:30-15:50	20	**Coffee Break**				
15:50-16:55	**[Symposium 6-6] "Electromechanical Coupling Materials for Nanogenerators and Self-powered Electronics"**					Grand Ballroom A
Chairperson(s)	***Ju-Hyuck LEE,*** *Professor, Daegu Gyeongbuk Institute of Science & Technology (DGIST)*					
15:50-16:15	25	Invited Speaker	Self-powered system based on triboelectric nanogenerator for wireless wearable sensor platforms	Sung Soo KWAK	Korea Institute of Science and Technology (KIST)	Korea
16:15-16:40	25	Invited Speaker	Self-powered/battery-less biomedical systems	Hanjun RYU	Chung-Ang University	Korea
16:40-16:55	15	Oral Presentation	Stretchable and biocompatible graphene electrode based triboelectric nanogenerator	Mingyu KIM	Daegu Gyeongbuk Institute of Science & Technology (DGIST)	Korea

[Symposium 7] "Materials for Super Ultra-low Energy and Emission Vehicles"

August 24 (Wed)

10:20-11:40	**[Symposium 7-1] "Materials for Super Ultra-low Energy and Emission Vehicles"**					Grand Ballroom B
Chairperson(s)	***Do Heui KIM,*** *Professor, Seoul National University*					
09:50-10:20	30	**Coffee Break**				
10:20-11:00	40	Keynote Speaker	Mechanistic Requirements for Methane and CO Oxidation on Transition Metal and Metal Oxide Clusters	Ya Huei (Cathy) CHIN	University of Toronto	Canada
11:00-11:20	20	Oral Presentation	Cobalt-ion exchanged BEA catalyst for ozone-induced oxidation of methane slip at temperatures lower than 200 Celcius degree	Dae-Won LEE	Kangwon National University	Korea
11:20-11:40	20	Oral Presentation	Cation-type-dependent Cu species in Cu-impregnated ZSM-5 zeolite and their hydrocarbon adsorption/oxidation abilities during cold-start period	Jinseong KIM	Korea University	Korea
11:40-13:30	110	**Lunch**				
13:30-15:20	**[Symposium 7-2] "Materials for Super Ultra-low Energy and Emission Vehicles"**					Grand Ballroom B
Chairperson(s)	***Sung June CHO,*** *Professor, Chonnam National University*					
13:30-14:10	40	Keynote Speaker	CO oxidation over single-atom catalysts	Ning YAN	University of Singapore	Singapore
14:10-14:30	20	Oral Presentation	Alleviating inhibitory effect of H2 on low-temperature water-gas shift reaction activity of Pt/CeO2 catalyst	Do Heui KIM	Seoul National University	Korea
14:30-14:50	20	Oral Presentation	Role of Interface for the Water-Gas Shift Reaction over Size-Controlled Supported Metal Catalysts: A Combined Theoretical and Experimental Study	Dongjae SHIN	Pohang University of Science and Technology (POSTECH)	Korea
14:50-15:20	30	Invited Speaker	Catalysis research for sustainable energy and chemicals	Jae Hyung KIM	Hanwha Solutions	Korea
15:20-15:50	30	**Coffee Break**				
15:50-16:50	**[Symposium 7-3] "Materials for Super Ultra-low Energy and Emission Vehicles"**					Grand Ballroom B
Chairperson(s)	***Jungkyu CHOI,*** *Professor, Korea University*					
15:50-16:10	20	Oral Presentation	Evaluation of catalytic performance and hydrothermal stability of Cu/CHA catalysts with controlled aluminum content and their structural understanding through theoretical studies	Sung June CHO	Chonnam National University	Korea
16:10-16:30	20	Oral Presentation	Development of NOx Adsorbents for Low Emission Vehicle	Ki Bong LEE	Korea University	Korea
16:30-16:50	20	Oral Presentation	First-Principles Study on the Effect of Zirconium or Molybdenum Doping to Stabilize a Ni-Rich LiNi0.89Co0.055Mn0.055O2 Cathode Material for Lithium-Ion Batteries	Eun Jun LEE	Korea University	Korea
16:50-17:10	20	Oral Presentation	Inference of Synthesis Methods for High-performance Zeolite-based Selective Catalytic Reduction Catalysts at Low Temperatures via Machine Learning	Shinyoung Bae	Seoul National University	Korea

[Symposium 8] "Materials for Green Ammonia Cycling"

August 24 (Wed)

10:20-11:50	**[Symposium 8-1] "Materials for Green Ammonia Cycling"**					Tulip+Cosmos
Chairperson(s)	***Yun Jeong HWANG,*** *Professor, Seoul National University* ***Taiho PARK****, Professor, Pohang University of Science and Technology (POSTECH)*					
09:50-10:20	30	**Coffee Break**				
10:20-10:50	30	Keynote Speaker	Materials and Processes for Green Ammonia Synthesis	Kijung YONG	Pohang University of Science and Technology (POSTECH)	Korea
10:50-11:20	30	Invited Speaker	Electrochemical nitrogen reduction using metal sulfide catalysts for sustainable ammonia production under ambient conditions	Hyun S. PARK	Korea Institute of Science and Technology (KIST)	Korea
11:20-11:50	30	Invited Speaker	Electrocatalytic Ammonia Synthesis from Nitric Oxide	Youngkook KWON	Ulsan National Institute of Science and Technology (UNIST)	Korea
11:50-13:30	100	**Lunch**				
13:30-15:30	**[Symposium 8-2] "Materials for Green Ammonia Cycling"**					Tulip+Cosmos
Chairperson(s)	***Hyo Won KIM,*** *Professor, Korea Institute of Energy Technology (KENTECH)* ***Hyeyoung SHIN****, Professor, Chungnam National University*					
13:30-14:00	30	Keynote Speaker	Ammonia as a Promising Long Distance Hydrogen Carrier	Chang Won YOON	Pohang University of Science and Technology (POSTECH)	Korea
14:00-14:30	30	Invited Speaker	Promoted activity for selective ammonia production from electrochemical nitrate reaction on bimetallic electrocatalyst	Yun Jeong HWANG	Seoul National University	Korea
14:30-15:00	30	Invited Speaker	Time-resolved Observation of photo/electrochemical Ammonia Oxidation	Wooyul KIM	Korea Institute of Energy Technology (KENTECH)	Korea
15:00-15:15	15	Oral Presentation	Ru catalysts supported on Y-doped BaCeO3 for H2 production via NH3 decomposition	Namgi JEON	Pohang University of Science and Technology (POSTECH)	Korea
15:15-15:30	15	Oral Presentation	Nanopixelated Cu2O Photocathodes for Durable Photoelectrochemical Water Splitting	Juho LEE	Korea Advanced Institute of Science and Technology (KAIST)	Korea
15:30-15:50	20	**Coffee Break**				
15:50-17:20	**[Symposium 8-3] "Materials for Green Ammonia Cycling"**					Tulip+Cosmos
Chairperson(s)	***Wooyul KIM,*** *Professor, Korea Institute of Energy Technology (KENTECH)* ***Won Bae KIM****, Professor, Pohang University of Science and Technology (POSTECH)*					
15:50-16:10	20	Oral Presentation	Critical role of ion exchange membranes for electrochemical green hydrogen productions	Hyo Won KIM	Korea Institute of Energy Technology (KENTECH)	Korea
16:10-16:30	20	Oral Presentation	Efficient Photocatalytic Degradation of Volatile Organic Compounds	Taiho PARK	Pohang University of Science and Technology (POSTECH)	Korea
16:30-16:50	20	Oral Presentation	Metal Oxyhydroxides as Highly Active Electrocatalysts for Oxygen Evolution Reaction	Hyeyoung SHIN	Chungnam National University	Korea
16:50-17:05	15	Oral Presentation	Emerging Electrocatalysts for Green-Ammonia Electrolysis via Electrochemical Nitrogen Reduction Reaction	Venkata Thulasi Varma CHEBROLU	Pohang University of Science and Technology (POSTECH)	Korea
17:05-17:20	15	Oral Presentation	Spatial separation of cocatalysts on Z-scheme heterostructure for efficient green fuel production	Hyun Sik MOON	Pohang University of Science and Technology (POSTECH)	Korea

[Symposium 9] "Semiconductor Nanocrystal Quantum Dots"

August 24 (Wed)

10:20-12:00	**[Symposium 9-1] "Semiconductor Nanocrystal Quantum Dots"**					Violet
Chairperson(s)	***Sang-Wook KIM,*** *Professor, Ajou University* ***Nuri OH,*** *Professor, Hanyang University*					
09:50-10:20	30	**Coffee Break**				
10:20-10:30	10	Oral Presentation	Development of Large-Scale Synthesis of Post-InP Quantum Dots	Doh C. LEE	Korea Advanced Institute of Science and Technology (KAIST)	Korea
10:30-10:45	15	Invited Speaker	Ultrafast Auger interaction in magnetically-doped quantum dots and its application	Whi Dong KIM	Korea Institute of Industrial Technology (KITECH)	Korea
10:45-11:00	15	Invited Speaker	The role of trihalides in anion exchange reactions of cesium lead halide perovskite nanocrystal quantum dots	Ju Young WOO	Korea Institute of Industrial Technology (KITECH)	Korea
11:00-11:15	15	Invited Speaker	Ultrathin quantum dot light emitting diodes for next generation displays	Moon Kee CHOI	Ulsan National Institute of Science and Technology (UNIST)	Korea
11:15-11:30	15	Invited Speaker	Synthesis of Blue-emissive InGaP Alloyed Quantum Dots	Min-Jae CHOI	Dongguk University	Korea
11:30-11:45	15	Invited Speaker	Nondestructive direct photolithography for patterning quantum dot films by atomic layer deposition of ZnO	Seong-Yong CHO	Myongji University	Korea
11:45-12:00	15	Invited Speaker	Surface State-induced Energy Landscape Enabling Barrierless Hole Injection in Quantum Dot Electroluminescent Devices	Jaehoon LIM	Sungkyunkwan University	Korea
12:00-13:20	80	**Lunch**				
13:20-15:30	**[Symposium 9-2] "Semiconductor Nanocrystal Quantum Dots"**					Violet
Chairperson(s)	***Moon Kee CHOI,*** *Professor, Ulsan National Institute of Science and Technology (UNIST)* ***Ju Young WOO,*** *Senior Researcher, Korea Institute of Industrial Technology (KITECH)*					
13:20-13:35	15	Invited Speaker	Chemically and Electronically Active Additives for Surface Treatment of III-V Semiconductor Nanocrystals	Nuri OH	Hanyang University	Korea
13:35-13:50	15	Invited Speaker	Improvement in Quantum Yield and Stability of Blue-Emitting Core/Shell Quantum Dots via Shell Surface Passivation with MX2-Type Ligands	Taesu KIM	Korea Research Institute of Chemical Technology (KRICT)	Korea
13:50-14:10	20	Invited Speaker	Simple One-Pot Synthesis of Monodisperse and Stable In(Zn)P Quantum Dots	Kangtaek LEE	Yonsei University	Korea
14:10-14:30	20	Invited Speaker	Synthesis of highly emissive quantum dots for light-emitting diodes by controlling the reactivity of precursors	Jongnam PARK	Ulsan National Institute of Science and Technology (UNIST)	Korea
14:30-14:50	20	Invited Speaker	Multiscale engineering of quantum dots for high-efficiency and high-density light-emitting devices	Yeon Sik JUNG	Korea Advanced Institute of Science and Technology (KAIST)	Korea
14:50-15:10	20	Invited Speaker	Highly thin perovskite quantum dot/metal oxide composite film through aerosol-deposition method for color down converting	Sang-Wook KIM	Ajou University	Korea
15:10-15:30	20	Invited Speaker	Ligand Control of Quantum Dots for the Improvement of Efficiency and Stability of Color Conversion Films and Quantum Dot Light Emitting Diodes	Heeyeop CHAE	Sungkyunkwan University	Korea
15:30-15:50	20	**Coffee Break**				
15:50-17:20	**[Symposium 9-3] "Semiconductor Nanocrystal Quantum Dots"**					Violet
Chairperson(s)	***Jaehoon LIM,*** *Professor, Sungkyunkwan University* ***Whi Dong KIM,*** *Researcher, Korea Institute of Industrial Technology (KITECH)*					
15:50-16:15	25	Keynote Speaker	Luminescent nanocrystals to measure complex dynamics of micro-organisms and bio-fluids	Jongwook KIM	Institut Polytechnique de Paris	Korea
16:15-16:40	25	Keynote Speaker	CsxWO3-3- plasmonic oxide nanocrystals for NIR optics	Thierry GACOIN	Institut Polytechnique de Paris	Korea
16:40-17:00	20	Invited Speaker	InP Magic Sized Clusters Chemistry	Sungjee KIM	Pohang University of Science and Technology (POSTECH)	Korea
17:00-17:20	20	Keynote Speaker	Interface Polarization in Heterovalent Core/Shell Nanocrystals	Wan Ki BAE	Sungkyunkwan University	Korea

[Symposium 11] "Advanced Biomaterials and Applications"

August 25 (THU)

08:50-12:05	**[Symposium 11-1] "Advanced Biomaterials and Applications"**					Grand Ballroom B
Chairperson(s)	***Tae-il Kim,*** *Professor, Sungkyunkwan University* ***Nohyun LEE,*** *Professor, Kookmin University* ***Soonmin SEO,*** *Professor, Gachon University*					
08:50-09:20	30	Keynote Speaker	Unconventional Bioelectronics for Heart and Brain Disease	Dae-Hyeong KIM	Seoul National University	Korea
09:20-09:45	25	Invited Speaker	Solid-state Driven Transparent Hydrogel Microfiber Formation for 3D Cell Cultures and Live Optical Imaging	Myung-Han YOON	Gwangju Institute of Science and Technology (GIST)	Korea
09:45-10:10	25	Invited Speaker	Advanced Biomaterials for Peripheral Nerve Regeneration	Youngmee JUNG	Korea Institute of Science and Technology (KIST)	Korea
10:10-10:35	25	Invited Speaker	Augmented Immune Synapse Interaction via Biomaterial-mediated ex vivo Cell Surface Engineering	Kyobum KIM	Dongguk University	Korea
10:35-10:50	15	**Coffee Break**				
10:50-11:15	25	Invited Speaker	Triplet-fusion based upconversion nanocapsule for Anti-stokes fluorescence bioimaging and biosensing	Jaehyuk KIM	Pusan National University	Korea
11:15-11:40	25	Invited Speaker	Deep Tumor Penetration of Therapeutic Nanoparticles by Click Reaction-Assisted Immune Cell Targeting	Soohong LEE	Korea Research Institute of Chemical Technology (KRICT)	Korea
11:40-12:05	25	Invited Speaker	Preparation and Analysis of Inorganic Nanoparticle-protein complexes	Hyon Bin NA	Myongji University	Korea
12:05-13:30	85	**Lunch**				
13:30-17:20	**[Symposium 11-2] "Advanced Biomaterials and Applications"**					Grand Ballroom B
Chairperson(s)	***Youngmee JUNG,*** *Researcher, Korea Institute of Science and Technology (KIST)* ***Hyon Bin NA,*** *Professor, Myongji University* ***Kyobum KIM,*** *Professor, Dongguk University*					
13:30-13:55	25	Invited Speaker	Smart design of biomaterials for biomedical applications	Junmin LEE	Pohang University of Science and Technology (POSTECH)	Korea
13:55-14:20	25	Invited Speaker	Mechanically-Responsive Adhesive Microcapsules for On-Demand Controlled Delivery of Therapeutic Drugs in Dynamically Loaded Environments	Yun Kee JO	Kyungpook National University	Korea
14:20-14:45	25	Invited Speaker	Sustainable and Alternative Food Packaging Based On Bio-renewable Nanofibers	Dongyeop OH	Korea Research Institute of Chemical Technology (KRICT)	Korea
14:45-15:10	25	Invited Speaker	Development of turn-on fluorescent sensor based on β-cyclodextrin-stabilized melamine-derived carbon dots for the selective detection of dopamine	Jongsung KIM	Gachon University	Korea
15:30-15:50	20	**Coffee Break**				
15:50-16:20	30	Keynote Speaker	CRISPR/Cas-assisted genetics in intestinal organoids	Bonkyoung KOO	IBS Korea	Korea
16:20-16:35	15	Oral Presentation	Unconventional Band Pass Filters in Bioelectronics for Saving Energy	Tae-il KIM	Sungkyunkwan University	Korea
16:35-16:50	15	Oral Presentation	Metal microneedle array electrodes fabricated at low temperature for ECG detection based on Bi-In-Sn alloys	Soonmin SEO	Gachon University	Korea
16:50-17:05	15	Oral Presentation	Hydrogel-membrane microfluidic platform for rapid detection	Dae Kun HWANG	Toronto Metropolitan University	Canada
17:05-17:20	15	Oral Presentation	Cerium and Cerium oxide Aerogels as Efficient Catalyst and Sensor Materials - Materials of the Future	Ramya RAMKUMAR	Yeungnam University	Korea