IUMRS-ICA 2021
October 3-8, 2021 / ICC Jeju, Jeju Island, Korea
The 22nd International Union of Materials Research Societies – International Conference in Asia
ON/OFF-LINE HYBRID EVENT

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THE 22nd INTERNATIONAL UNION OF MATERIALS RESEARCH SOCIETIES – INTERNATIONAL CONFERENCE IN ASIA

IUMRS-ICA 2021

October 3-8, 2021
International Convention Center Jeju, Jeju Island, Korea

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Sponsorship Prospectus

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Jeju CVB Jeju Convention & Visitors Bureau

Title	The 22nd International Union of Materials Research Societies - International Conference in Asia 2021 (IUMRS-ICA 2021)
Date	October 3 (Sun.) to 8 (Fri.), 2021
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IUMRS-ICA 2021 Secretariat
273, Baeul 1-ro, Yuseong-gu, Daejeon, Korea [34036]
E-mail: secretariat@iumrs-ica2021.org / Tel: +82-42-472-7460 / Fax: +82-42-472-7459

IUMRS-ICA 2021 KEYNOTE/INVITED SPEAKERS

● Ⅰ. Energy Materials and Devices

Tentative Title	Name	Affiliation
Rational Design of Stabilized Ni-rich Cathode for Li Batteries	Keynote Kyeongjae Cho	Univ. of Texas, Dallas, USA
Structural degree of freedom for secondary batteries	Keynote Lin Gu	IOP CAS, China
Triboelectric Nanogenerators for Powering Body-implantable Electronics	Keynote Sang Woo Kim	Sungkyunkwan Univ., Korea
Direct Cathode Recycling of End-of-Life Li-Ion Batteries	Keynote Kyusung Park	Nat'l Renewable Energy Lab, USA
Transition Metal And Oxygen Redox Reactions In Battery Electrodes Revealed By Soft X-Ray Spectroscopy	Keynote Wanli Yang	Lawrence Berkeley Nat'l Lab, USA
Advanced Sodium ion Batteries	Keynote Yan Yu	Univ. of Sci. and Tech. of China, China
Sodium-ion Batteries Based on Sodium-rich Rhombohedral $Na_{2-x}FeFe(CN)_6$ cathode	Shulei Chou	Univ. of Wollongong, Australia
An in-situ Observation of LIB Cathodes or a Strategy to make Si-Based Anodes Commercially Viable	Jihyun Hong	KIST, Korea
Biomass Reforming for Cogeneration of Commodity Chemical and Green Hydrogen	Li Hong	Nanyang Technological Univ., Singapore
Freeze Tape Casting Process for Three-Dimensionally Aligned Microstructure of Sulfur Electrodes	Yoon Hwa	Arizona State Univ., USA
Oxygen-Deficient Layered Oxides as Advanced Cathode for Sodium-Ion Battery	Xiaobo Ji	Central South Univ., China
Complex Phase Transformations in Sodium Storage Materials with a Layered Structure	Jae Chul Kim	Stevens Inst. of Tech., USA
A Low-cost and High-performance cathode For Rechargeable Batteries Using First-principles Calculation and Advanced Structural Analyses	Jongsoon Kim	Sungkyunkwan Univ.
Development of electrolytes towards high-performance supercapacitors	Woong Kim	Korea Univ., Korea
An Electrochemical Systems for Highly Efficient Low-Grade Heat Harvesting	Seokwoo Lee	Nanyang Technological Univ., Singapore
High-Performance Energy Generators Based on Flexible and Stretchable Composite Films	Su Yeon Lee	KRICT, Korea
Digital Twin-Driven 3D Structural and Electrochemical Modeling for All-Solid-State Batteries	Yong-Min Lee	DGIST, Korea
Ultra-High Density Cobalt Embedded Graphitic Carbon as High Performance Oxygen Electrocatalyst in Rechargeable Seawater Battery	Oi Lun (Helena) Li	Pusan Nat'l Univ., Korea
Rational Design of Porous Carbon Based Composites for Energy Storage and Conversion	Hao Liu	Univ. of Tech. Sydney, Australia
Controlled Synthesis of Two-dimensional Materials with Tailored Properties	Tom Zhengtang LUO	Hong Kong Univ. of Sci. and Tech., Hong Kong
A Cooperative Biphasic MoOx-MoPx Promoter Enables a Fast-Charging Lithium-Ion Battery	Min-Sik Park	Kyung Hee Univ.
Dynamic J-V histeresis in perovskite solar cells: measurement protocols and physical interpretations	Ioana Pintilie	Nat'l Inst. of Materials Physics, Romania

Super-Expanded Graphite Anodes Employing Metallic Pillars for High Capacity Na-ion Batteries	Won Hee Ryu	Sookmyung Women's Univ., Korea
Interface Stabilization of Nickel-rich Cathode as a Key for Promoted Safety and Energy Density of Li-ion Batteries	Seung-Wan Song	Chungnam Nat'l Univ., Korea

II. Materials and Devices for Displays and Optoelectronics

Tentative Title	Name	Affiliation
Comprehensive Defect Passivation Strategies for Efficient Perovskite Light-Emitting Diodes	Keynote Tae-Woo Lee	Seoul Nat'l Univ., Korea
Development of High Performance Metal Halide Perovskite Transistors	Keynote Yong-Young Noh	POSTECH, Korea
Oxide TFT for Ultra-High Resolution Display	Keynote Sang-Hee Park	KAIST, Korea
TBA	Su Seok Choi	POSTECH, Korea
Semiconductor Nanocrystal Optoelectronics: Pushing The Limits, Breaking Records	Hilmi Volkan Demir	Bilkent Univ., Turkey
Efficient Perovskite and Organic Light-Emitting Diodes: Carrier Kinetics and Device Design	Dawei Di	Zhejiang Univ., China
High-efficiency perovskite LEDs and their applications	Feng Gao	Linköping Univ., Sweden
Hetero-phased Perovskite Light-emitter for Stable Light-emitting Diodes	Tae-Hee Han	Hanyang Univ., Korea
Ion Gel Electrolyte for Optoelectronic Applications	Kihyon Hong	Chungnam Nat'l Univ., Korea
Multidimensional Perovskite Nanocrystal for Light Conversion and LED Applications	Won Bin Im	Hanyang Univ., Korea
Tales of Filamentous One-dimensional 'Nano-carbon' and 'Bio' Materials as Perovskite Crystal Templates	Il Jeon	Pusan Nat'l Univ., Korea
Metal-Based Printable Stretchable Composite Conductors	Sunho Jeong	Kyung Hee Univ., Korea
Zero-energy cooling technologies for optoelectronics and infrastructures	Sun Kyung Kim	Kyung Hee Univ., Korea
Reversible, full color luminescence by post-treatment of perovskite nanocrystals	Gi-Hwan Kim	Gyeongsang Univ., Korea
Unconventional QLEDs using inorganic NPs and small molecules	Jiwan Kim	Kyonggi Univ., Korea
TBA	Ji-Seon Kim	Imperial College London, UK
How to overcome stability issues in Oxide TFTs?	Junghwan Kim	Tokyo Inst. of Tech., Japan
Active Pixel Image Sensor Array with Large-Area 2D Materials	Sunkook Kim	Sungkyunkwan Univ., Korea
Ligand Engineered Bandgap Stability in Perovskite Nanocrystals Light-Emitting Diodes	Bo Ram Lee	Pukyoung Nat'l Univ., Korea
Chemically Stable Perovskite QDs and Their LED Applications	Chang-Lyoul Lee	Advanced Photonics Research Inst., Korea
Defect and interface effects in optoelectronic properties of 2D van der Waals semiconductors	Hyun Seok Lee	Chungbuk Nat'l Univ., Korea
Plasma-Polymerized Fluorocarbon Thin Film with Low Refractive Index for Display and Optoelectronics	Sang-Jin Lee	KRICT, Korea
Design of Plasmonic Structure for Asymmetric Optical Transmission with Factorization Machine	Eungkyu Lee	Kyung Hee Univ., Korea
Recent Progresses on Atomic Layer Deposited n/p-type Oxide Semiconductor Thin-Film Transistors	Jin-Seong Park	Hanyang Univ., Korea
Synthesis of Quantum Dots for High-Performance Optoelectronic Application	Jongnam Park	UNIST, Korea

Metal Oxide Semiconductors-based Photodetector Devices	You Seung Rim	Sejong Unive., Korea
Micro-LEDs based on InGaN Quantum dots	Lai Wang	Tsinghua Univ., China
Conjugated polyelectrolytes as a charge transport interlayer for perovskite LEDs and solar cells	Hanyoung Woo	Korea Univ., Korea
Passivation of Defects to Improve Long-Term Stability of Perovskite Solar Cells	Tae-Youl Yang	Chungnam Nat'l Univ., Korea

● Ⅲ. Materials and Devices for Sensors

Tentative Title	Name	Affiliation
Biosensors towards On-Site Testing and Self-Testing	Keynote Nae-Eung Lee	Sungkyunkwan Univ., Korea
Nanocarbons – a green playfield for sensor development	Keynote Qin Li	Griffith Univ., Australia
Porous Conductive Textiles for Wearable Electronics	Keynote Zijian Zheng	The Hong Kong Polytechnic Univ., Hong Kong
Conformal oxide sensors for healthcare applications	Madhu Bhaskaran	RMIT Univ., Australia
Bio-guided Artificial Neural Tactile Sensor Electronic System	Sungwoo Chun	Korea Univ., Korea
High performance gas nanosensor arrays for breath diagnosis	Nguyen Duc Hoa	Hanoi Univ. of Science and Tech,Vietnam
Printed Wearable Sensor Array	Sungjune Jung	POSTECH, Korea
Skin-Inspired Artificial Ion Electronic Skin	Unyong Jeong	POSTECH, Korea
Soft Ion Channel and Semiconductor for Artificial Neuromorphic Sensors	Do Hwan Kim	Hanyang Univ., Korea
Design of Interactive Metahologram using Liquid Crystallinity	Young-Ki Kim	POSTECH, Korea
Implantable and suturable 1D electronic sensors for real-time monitoring of biomechanical signals	Jaehong Lee	DGIST. Korea
Intrinsically stretchable and self-healable semiconductor polymers for skin-like sensory devices	Jin Young Oh	Kyung Hee Univ., Korea
Photo-patternable, Large-area Solid-state Liquid Metal Film coated via Solution Shearing for Soft Electronics	Steve Park	KAIST, Korea
Toward a new concept for development of MEMS-type gas sensor	Kengo Shimanoe	Kyushu Univ., Japan
Soft Epicardial Bioelectronic Patch Enabled by Fully Elastomeric Composite Materials	Kyoseung Sim	UNIST, Korea
Stretchable Self-Healing Materials and Devices for Chronic Peripheral Neural Interfaces	Donghee Son	Sungkyunkwan Univ., Korea
Stretchable Ionic Sensors	Jeong-Yun Sun	Seoul Nat'l Univ., Korea
Multi-Modal Flexible Sensor System with Feedback Function	Kuniharu Takei	Osaka Prefecture Univ., Japan

● Ⅳ. Materials, Processing, and Devices for Flexible Electronics

Tentative Title	Name	Affiliation
Skin-Interfaced Wearable Biosensors	Keynote Wei Gao	Califonia Inst. of Tech., USA
Materials the Activator of Our Prosperity	Keynote Rodrigo Martins	UNINOVA Research Inst., Portugal
Soft network materials and their applications in bio-integrated devices	Keynote Yihui Zhang	Tsinghua Univ., China
TBA	Benjamin Agyei-Tuffour	Univ. of Ghana, Ghana

From Functional Nanomesh to Multifunctional Neuroelectronics	Hui Fang	Northeastern Univ., USA
Ultra-flexible organic integrated systems for self-powered sensors	Kenjiro Fukuda	RIKEN, Japan
Soft, Resorbable Bioelectronics	Suk Won Hwang	Korea Univ., Korea
Instant, multi-scale dry transfer printing by atomic diffusion control at heterogeneous interfaces	Kyung-In Jang	DGIST, Korea
Soft Wireless Optofluidic Neural Interfaces: Opportunities and Challenges for Chronic and Target-Specific Neuromodulation	Jae-Woong Jeong	KAIST, Korea
Flexible Piezoelectric Materials and Devices for Wearable Tele-haptic Interfaces	Hanbit Jin	ETRI, Korea
Highly Durable Conductive Composite for Direct Writing of a Stretch-able Electrode	Sungmook Jung	KRICT, Korea
Biodegradable and stretchable electronics using metallic glass nanofilm	Seung-Kyun Kang	Seoul Nat'l Univ., Korea
Miniaturized, Flexible Electronic Systems for Medical Devices	Kyeongha Kwon	KAIST, Korea
Three-dimensional electronics based on planar membrane-type devices and selective plasticization of frameworks	Heung Cho Ko	GIST, Korea
Optical wireless power transfer for implantable medical electronics	Jongho Lee	GIST, Korea
Flexible & Stretchable Bio-medical Devices using UV-patternable Materials	Wonryung Lee	KIST, Korea
Skin-attachable nanomesh sensor without sensory interference	Sunghoon Lee	The Univ. of Tokyo, Japan
High-Resolution 3D Printing of Liquid Metals for Bioelectronics	Jang-Ung Park	Yonsei Univ., Korea
Skin-Compatible Stretchable OPVs for Self-Powered Bio-medical Applications	Sungjun Park	Ajou Univ., Korea
Implantable Optoelectronic Devices for Advanced Neural Interfaces	Xing Sheng	Tsinghua University, China
Highly Stretchable, Self-healable, Recyclable, and Reconfigurable Wearable Electronics	Jianliang Xiao	Univ. of Colorado, USA
TBA	Hong Yeo	Georgia Inst. of Tech., USA
Sheet type Image Sensor with Near Infrared Sensitive Organic Photodiode	Tomoyuki Yokota	The Univ. of Tokyo
Soft Rubbery Electronics	Cunjiang Yu	Univ. of Houston, USA

● V. Two-dimensional van der Waals Materials: Graphene and Beyond Graphene

Tentative Title	Name	Affiliation
Carbon Nanocages: A New Platform for Advanced Energy Conversion and Storage	Keynote Zheng Hu	Nanjing Univ., China
Recent Advances in Two-Dimensional Materials Science Using Atomic-Resolution TEM/STEM	Keynote Zonghoon Lee	UNIST, Korea
Ab Initio Study of Two-Dimentional Transiton Metal Carbides/Borides	Keynote Zhimei Sun	Beihang Univ., China
Tunable Wettability of Graphene through Non-Destructive Hydrogenation and Wettability-Based Patterning for Bio-Applications	Jongill Hong	Yonsei Univ., Korea
Gas-Phase Growth of 2D Layered Metal Chalcogenides and Oxides	Kibum Kang	KAIST, Korea
Tuning the Electrical Properties of Two-Dimensional Transition Metal Selenides and Its Applications: First-Principles Studies	Won June Kim	Changwon Nat'l Univ., Korea

Energy Band Engineering in 2D Semiconductor Heterojunctions	Chul-Ho Lee	Korea Univ., Korea
Methodology for surface functionalization and phase transition of 2D materials	Gwan Hyung Lee	Seoul Nat'l Univ., Korea
Raman Spectroscopic Investigations of 2D Crystals	Jae-Ung Lee	Ajou Univ., Korea
Electrical and Optical Control of 2D Quantum Light Sources	Jieun Lee	Seoul Nat'l Univ., Korea
Facile Synthesis of Patterned 2D Heterostructure and Its Sensor Applications	Seoung-Ki Lee	Pusan Nat'l Univ., Korea
Asymmetric Schottky Contacts in van der Waals Metal-Semiconductor-Metal Structures Based on Two-dimensional Janus Materials	Shuang Li	Nanjing Univ. of Sci. and Tech., China
Rational Design of Schottky and Ohmic Contact between Two Dimensional Materials	Wei Liu	Nanjing Univ. of Sci. and Tech., China
Substrate Engineering of elemental 2D materials	Tianchao Niu	Shanghai Jiaotong Univ., China
Measurement and Analysis of Hydrodynamic Phonon Transport in Suspended Graphene	Jae Hun Seol	GIST, Korea
Extrinsically Doped Two-Dimensional Semiconductors	Joonki Suh	UNIST, Korea
High Transparency, Flexibility, Stretchability of Transfer-Free Graphene Electrodes Grown at 100 oC for Display Applications	Soon-Gil Yoon	Chungnam Nat'l Univ., Korea

● Ⅵ. Advanced Structural Materials

Tentative Title	Name	Affiliation
Ultrahigh Strength Mg-Y-Ni Alloys Containing Long Period Stacking Ordered (LPSO) Phase and γ′ Phase	Keynote M. Y. Zheng	Harbin Inst. of Tech., China
Dislocation Plasticity for Deformation-induced Martensitic Transformation in Austenitic Steel	Keynote Tae-Ho Lee	KIMS, Korea
Establishment of Alloy Design and Heat Treatment Procedure for Improving Elastic Moduli of Aluminum	Shoichi Hirosawa	Yokohama Nat'l Univ., Japan
Development of bioinspired bulk metallic glass-alumina hybrid materials	Je In Lee	Pusan Nat'l Univ., Korea

● Ⅶ. Computational Materials

Tentative Title	Name	Affiliation
TBA	Keynote Graeme Henkelman	Univ. of Texas at Austin, USA
Phase Transition and Metal Exsolution in Perovskites to Enhance the Catalytic Activity	Jeong Woo Han	POSTECH, Korea
Catalyst Design for Nitrogen and Oxygen Reduction Reactions by Deep Learning	Sang Soo Han	KIST, korea
Investigation and Design of Oxide Semiconductors from First Principles	Youngho Kang	Incheon Nat'l Univ., Korea
Impact of Crystalline Structure on Photodynamics in Halide Perovskites	Hyungjun Kim	KAIST, Korea
AI-Driven Materials Design	Donghwa Lee	POSTECH, Korea
Machine Learning Simulation using LASP: Current Status, New CDevelopment and Connection with Catalysis Experiment	Zhipan Liu	Fudan Univ., China
The Origin of Fast Ionic Transport in Lithium Spinel Anode Material: First-Principles Study	Dong-Hwa Seo	UNIST, Korea
Rational Design of Nickel Oxyhydroxide Based Catalysts for Enhanced Oxygen Evolution Reaction Activity	Hyeyoung Shin	Chungnam Nat'l Univ., Korea

Microscopic Electrochemistry of Ion Transport at Heterogeneous Solid-Solid Interface in Li-ion Battery	Yoshitaka Tateyama	Nat'l Inst. for Materials Sci., Japan
III-V Semiconductor-based nano-structures grown by KIST MBE for the application to quantum technology	Jinlan Wang	South East Univ., China
Band Structure Engineerign and Molecular Design of Two-Dimensional Nonmetal Photocatalyst toward Water Splitting	Xiaojun Wu	Univ. of Sci. and Tech. of China, China
Design of Functional Perovskites by Machine Learning	Wan-Jian Yin	Soochow Univ., Chian
Reviving Inert Oxides for Electrochemical Water Splitting by Subsurface Engineering	Liang Zhang	Tsinghua Univ., China

● Ⅷ. Advanced Fabrication, Characterization and Devices

Tentative Title	Name	Affiliation
Non-Sinusoidal Waveform Generation of High-Power Ultrasonics using Resonant Frequency Control System	Keynote Takeshi Morita	The Univ. of Tokyo, Japan
Advanced Atomic Layer Deposition	Keynote Tae Joo Park	Hanyang Univ., Korea
Is the Resonance Drive Really Efficient? - High Power Piezoelectric Characterization	Keynote Kenji Uchino	The Pennsylvania State Univ., Japan
Parylene MEMS	Keynote Wei Wang	Peking Univ., China
Synchrotron X-Ray Absorption Spectroscopy (SXAS): An Advanced Characterization Tool for Functional Materials	Keynote Rattikorn Yimnirun	Vidyasirimedhi Inst. of Sci. and Tech., Thailand
In situ XPS and SXAS study on the gas adsorption on Fe-N-C catalyst for oxygen reduction	Bumkyun Jeong	KBSI, Korea
Magnetically Actuated Three-dimeKnsional Microrobots by Two-photon Polymerization for Biomedical Applications	Hong Soo Choi	DGIST, Korea
Synchrotron X-ray Spectroscopy Study of Interface States in Two-Dimensional Electron Systems	Deok-Yong Cho	Jeonbuk Nat'l Univ., Korea
Developing calorimeters for thermal transport and biological measurements with picowatt resolution	Sunghoon Hur	KIST, Korea
Electromechanical Microsensors based on C-MEMS Process	Jongmoon Jang	KIMS, Korea
In-situ FTIR Studies of Sequential Infiltration Synthesis	Nari Jeon	Chungnam Nat'l Univ., Korea
Fabrication of Dense Ceramic PLZT-BZN Composite below Sintering Temperature for Energy Storage Capacitor	Daeyong Jeong	Inha Univ., Korea
Optical spectroscopy for probing nanoscale and ultrafast optical process in nanomaterials	Jonghwan Kim	POSTECH, Korea
Charged particle induced etching and functionalization of two-dimensional materials	Charlene Lobo	Univ. of Tech. Sydney, Australia
Selective Pattern Fabrication by AS-ALD for Semiconductor Devices	Il-Kwon Oh	Ajou Univ., Korea
Defect Chemistry in Fluorite-Structured Ferroelectric Thin Films for Nanoelectronics Devices	Min Hyuk Park	Pusan Nat'l Univ., Korea
Artificially Relaxor Behavior in Lead-Free Ferroelectric Thick Films by High Kinetic Energy Deposition (AD)	Jungho Ryu	Yeungnam Univ., Korea
Visualization of Polar Nanostructure in Ferroelectrics via Electron Microscopy	Yukio Sato	Kyushu Univ., Japan
Development of Thin/Thick Piezoelectric Film based pMUT Array	Hong Goo Yeo	Sun Moon Univ., Korea
Atomic and Electronic Reconstruction at Van der Waals Interface in Twisted 2-D Materials	Hyobin Yoo	Sogang Univ., Korea
Current Stage of 3-D Ultrasound Imaging and Piezoelectric Micromachined Ultrasound Transducer (pMUT) in Biomedical Applications	Jaesok Yu	DGIST, Korea

IX. Semiconductor Materials and Devices

Tentative Title	Name	Affiliation
Quasi-Static Negative Capacitance in Dielectric/Ferroelectic Layers	Keynote Cheol Seong Hwang	Seoul Nat'l Univ., Korea
Selector Devices for 3D X-point Memory	Keynote Hyunsang Hwang	POSTECH, Korea
Novel Ternary Logic Devices and Architectures Enabling Extreme Low Power Computing	Keynote Byoung Hun Lee	POSTECH, Korea
Crystalline Atomic Layer Deposition of AlN layer for GaN Power Device	Ho-Young Cha	Hongik Univ., Korea
Thickness-Controlled Black Phosphorus Tunnel Field-Effect Transistor for Low Power Switches	Sungjae Cho	KAIST, Korea
Monolithic 3D Integration for Future Semiconductor Development	Rino Choi	Inha Univ., Korea
High-Frequency Ga2O3 Field-Effect Transistor Technology for Wireless Communications	Masataka Higashiwaki	Nat'l Inst. of Information & Communications Tech., Japan
Structural and Electronic Properties of Orientation Mediated Crystal Defects in Ga2O3 Homoepitaxy	Soon-Ku Hong	Chungnam Nat'l Univ., Korea
3D stackable 2-terminal and 3 terminal Hafnia ferroelectric device	Sanghun Jeon	KAIST, Korea
Monolithic 3D with III-V compound for Mixed-signal IC	Sanghyeon Kim	KAIST, Korea
Colossal flexoresistance in dielectrics	Daesu Lee	POSTECH, Korea
Comprehensive Review on the Development of High Mobility of Amorphous Oxide Semiconductor Thin Film Transistors	Sang Yeol Lee	Gachon Univ., Korea
Photoelectrodes for Efficient Photoelectrochemical Water Splitting: from Oxides to Organometallic Halide Perovskite	Sanghan Lee	GIST, Korea
Atomic layer deposition of SrTiO3 thin films and their applications to DRAM capacitors	Woongkyu Lee	Myongji Univ., Korea
Analog content-addressable memory with integrated nanoscale memristors	Can Li	The Univ. of Hong Kong, Hong Kong
Development of two-dimensional and three-dimensional passive memristor arrays	Peng Lin	Zhejiang Univ., China
Enhancing Dielectric Constant of ZnO by Acceptor-Donor Co-Doping	Francis Chi-Chung Ling	Hong Kong Univ. of Sci. and Tech., Hong Kong
Gallia(Ga2O3): Fascinating Electronic Properties	Ekaterine Chikoidze	Université de Versailles Saint-Quentin-en-Yvelines, France
Prospects of Ultrawide Bandgap Materials and Devices	S Medjdoub	IEMN, France
TBA	Beatriz Noheda	Univ. of Groningen, Netherlands
Carbon-based wide band gap-semiconductors for neutron detection	Laurent Ottaviani	Aix-Marseille Univ., France
FDSOI: the optimum solution to co-integrate the different market requirements	Luca Pirro	GlobalFoundries, USA
TBA	Sayeef Salahuddin	Univ. of California, Berkeley, USA
Influence of Dopants and Oxygen Vacancies on the Stabilization of the Ferroelectric Phase in Doped Hafnium Oxide Films	Uwe Schroeder	NaMLab gGmbH, Germany
III-V Semiconductor-Based Nano-Structures Grown by KIST MBE for the Application to Quantum Technology	Jin Dong Song	KIST, Korea
Oxide memristors for emerging applications	Jung Ho Yoon	KIST, Korea

X. Biomaterials and Soft Materials

Tentative Title	Name	Affiliation
Micro/nanotechnology for cancer immunotherapy	Keynote Junsang Doh	Seoul Nat'l Univ., Korea
Multifunctional Photonic Nanomaterials for Smart Healthcare Applications	Keynote Sei Kwang Hahn	POSTECH, Korea
Soft implantable drug delivery device for treatment of brain diseases	Keynote Dae-Hyeong Kim	Seoul Nat'l Univ., Korea
Injectable Biomaterials Matrices for Therapeutic Applications	Keynote Ki Dong Park	Ajou Univ., Korea
The Potential of Functional Graphene Nanomaterials for Medical Devices	Dong-Wook Han	Pusan Nat'l Univ., Korea
Versatile Approaches of Soft Electronics with Materials in Biomedical Applications	Suckwon Hong	Pusan Nat'l Univ., Korea
Initiated Chemical Vapor Deposition of Functional Polymer films and their Biomaterials and Soft Materials Applications	Sung Gap Im	KAIST, Korea
Flexible, miniaturized and long-term reliable neural interfacing devices for neural engineering	Joonsoo Jeong	Pusan Nat'l Univ., Korea
Molecular Design Strategy of Dynamic Materials for Next Generation Soft Electronics	Jiheong Kang	KAIST, Korea
Microfluidic Synthesis of Artificial Cell-Like Polymersomes for Functional Reactors	Hyomin Lee	POSTECH, Korea
Nanomaterials toward the non-destructive monitoring of stem cell differentiation	Jin-Ho Lee	Pusan Nat'l Univ., Korea
Tissue Microenvironment Engineering for Regenerative Medicine	Jung Seung Lee	Sungkyunkwan Univ., Korea
Development of Synthetic Cellular Components Based on Nucleic Acid Biomaterials	Seung Soo Oh	POSTECH, Korea
Bioinspired Soft 3D Architectures for Bioelectronics	Changhyun Pang	Sungkyunkwan Univ., Korea
Intracellular polymerization and self-assembly for supramolecular approach to control cellular fate	Ja-Hyoung Ryu	UNIST, Korea
Facile biofouling-free lubricant-skin coatings for biomedical implants and biosensors	Jungmok Seo	Yonsei Univ., Korea
Designing high-aspect-ratio nanostructures for interfacing and influencing biological system	Hyejeong Seong	KIST, Korea
Nature-Inspired Adhesive and Conductive Biomaterials for Advanced 3D Printing	Mikyung Shin	Sungkyunkwan Univ., Korea
Photocrosslinkable Biopolymers for Tissue adhesion and Drug Delivery	Seung Yun Yang	Pusan Nat'l Univ., Korea
Flexible neural implants for next generation brain-machine interfaces	Ki Jun Yu	Yonsei Univ., Korea

XI. Neuro-inspired and Quantum Computing Materials and Devices

Tentative Title	Name	Affiliation
Development of Quantum Computing with Superconducting Circuits	Gahyun Choi	KRISS, Korea
Quantum Algorithms on a Programmable Atomic Tweezer Array	Minho Kwon	Columbia Univ., USA
Quantum Emission from Silicon: Evidence and Explorations	Andrej Kuznetsov	Univ. of Oslo, Norway
Quantum Information with Trapped Ions and Optical Cavities	Moonjoo Lee	POSTECH, Korea

Probabilistic Computing based on Random MTJs for Invertible Logics	Ouk Jae Lee	KIST, Korea
Isotope Engineering and Nanoscale Imaging for Scaling Silicon Quantum Technology	Satoru Miyamoto	Nagoya Univ., Japan
Single-shot Single-Gate RF Spin Readout in P-donor Quantum Dots	Prasanna Pakkiam	Univ. of Queensland, Australia
Large-scale Neuromorphic Systems for Bio-inspired Artificial Intelligence	Jongkil Park	KIST, Korea
Role of Hyperfine Effects in Single-Hole GaAs/AlGaAs Spin Qubit Devices Probed in EDSR Experiments	Sergei Studenikin	Nat'l Research Council, Canada
Fast-converging in-situ training of hardware-implemented TiOx memristor arrays	Gunuk Wang	Korea Univ., Korea

● XII. Materials-Related Interdisciplinary Issues

Tentative Title	Name	Affiliation
Challenges and Opportunities in Remote Epitaxy for Releasable Epilayers on Graphene	Keynote Jeehwan Kim	Massachusetts Inst. of Tech., USA
Advanced techniques for the treatment of volatile organic compounds in ambient air through the development of functional materials based on non-photocatalysis and reactive adsorption	Keynote Ki-Hyun Kim	Hanyang Univ., Korea
High Efficiency and Ultra-stable Artificial Photosynthesis Devices for Solar Hydrogen Fuel Production	Keynote Zetian Mi	Univ. of Michigan, USA
III-V Semiconductor Nanostructures for Optoelectronics and Energy Applications	Keynote Hoe Tan	Australian Nat'l Univ., USA
Promising Plasmon Core-Shell Photocatalysts for Light-Driven Hydrogen Production	Dung Van Dao	Korea Univ., Korea
Versatile Magnetoresistive sensors for monitoring physico-mechanical vital signals	Cheol Gi Kim	DGIST, Korea
The Wide-Bandgap Perovskite for Tandem Solar Cells	Dong Hoe Kim	Sejong Univ., Korea
Manufacturing and Applications of 3D-printed Metal and Ceramic Microreactors	Dong-Pyo Kim	POSTECH, Korea
Discovery of Novel Cathode Materials for High-Performance Li-/Na-Ion Batteries	Jong Soon Kim	Sungkyunkwan Univ., Korea
High Resolution in-situ TEM Study of Low Dimensional Materials	Moon Kim	The Univ. of Texas at Dallas, USA
Principles and Development of Remote Epitaxy for Advanced Materials	Sungkyu Kim	Sejong Univ., Korea
Biofuel Production Using the Porous Materials	Eilhann Kwon	Sejong Univ., Korea
Integration of III-V Nanowire on Si and Their Device Applications	Katsuhiro Tomioka	Hokkaido Univ., Japan
Photonic Nano-/Micro-Structures for Optoelectronics Applications	Handon Um	Kangwon Nat'l Univ., Korea

● XIII. Synchrotron Based Analysis about Materials for Various Application

Tentative Title	Name	Affiliation
Ambient Pressure NEXAFS System for In-situ/Operanto Analysis of Catalyst Materials	Keun Hwa Chae	KIST, Korea
In situ XPS and SXAS study on the gas adsorption on Fe-N-C catalyst for oxygen reduction	Beomkyun Jeong	KBSI, Korea

Spin Dyanmics of Ferromagnetic Co Thin Films	Dong-Hyun Kim	Chungbuk Nat'l Univ., Korea
X-ray GIWAXS study on the growth of metal-halide perovskite film for photovoltaic devices	Hyo Jung Kim	Pusan Nat'l Univ., Korea
Exploring the band structure of quantum materials with microARPES and nanoARPES	Keun Su Kim	Univ. of Yonsei, Korea
Transmission Small-Angle X-ray Scattering Study on the Water-borne Nanoparticles for Ecological Applications	Yu Jin Kim	Argonne Nat'l Lab., USA
Morphological Investigation of Multi-component Organic Photovoltaics for Versatile Applications	Doo-Hyun Ko	Kyung Hee Univ., Korea
Spectroscopic Analysis of the Defect-induced Variation of Oxygen Vacancies on the Photocatalytic Activity of Metal Oxide Nanoparticles	Hangil Lee	Sookmyung Women's Univ., Korea
Multiscale analysis to understand heterogeneous nature of lithium-ion batteries and electrocatalysis	Jongwoo Lim	Seoul Nat'l Univ., Korea
Study of $SrTiO_3$ (001) surface using ambient pressure XPS	Bongjin Simon Mun	GIST, Korea
Revealing Side Reacting Compound from Isopropanol for stabilizing Alpha-Formamidinium Lead Triiodide Thin Film by Sequantial Process and its Application to One-Step Process	Byung-wook Park	UNIST, Korea
Advantageous features in materials probing techniques expected with the proposing light source at Ochang in Korea	Hyun-Joon Shin	Chungbuk Nat'l Univ., Korea
Synchrotron Based Researches on Reaction Behaviors of Organic Molecules on Ge(100) Surface	Young-Sang Youn	Yeungnam Univ., Korea
Organic Semiconductor for Photoelectrochemical Application	Jun-Ho Yum	EPFL (École polytechnique fédérale de Lausanne), Switzerland
Synchrotron-based x-ray photoelectron spectroscopy analysis on the electronic structures of 2 dimensional materials	Dong Jin Yun	Samsung Advanced Inst. of Tech., Korea

• Special Session: Symposium for Next-generation Intelligent Optoelectronic Convergence Materials and Devices

Tentative Title	Name	Affiliation
Next-Generation Tin Monosulfide Thin-Film Solar Cells	Jaeyeong Heo	Chonnam Nat'l Univ., Korea
Photoelectrochemical Energy Materials and Device	Soon Hyung Kang	Chonnam Nat'l Univ., Korea
Organic-Based Active Terahertz Modulators	Joong Wook Lee	Chonnam Nat'l Univ., Korea
Recent Trends in Artificial Photosynthesis and Related Catalytic Nanomaterials	Uk Sim	Chonnam Nat'l Univ., Korea

Sponsorship Application Deadline

August 31, 2021

Sponsorship Type

● Type A (Financial Backing)

※ Since IUMRS-ICA 2021 will be held in On/Off-line Hybrid Event, the levels of type A will be advertised at on-and off-line conference.

USD 1 = KRW 1,000

LEVEL	BENEFITS	VALUE
Diamond	- Free registration for 5 people - Advertisement of the company in the program book (1 page, Color) ※ Advertisement of the company on Outside Back Cover : Only 1 company on a first-come, first-served basis. - Logo on Program Book, Official Website, E-Newsletter, Screen at Session Room - Logo featured on the banner at the venue	$ 10,000
Platinum	- Free registration for 3 people - Advertisement of the company in the program book (1 page, Color) - Logo on Program Book, Official Website, E-Newsletter, Screen at Session Room - Logo featured on the banner at the venue	$ 7,000
Gold	- Free registration for 1 person - Advertisement of the company in the program book (1 page, Color) - Logo on Program Book, Official Website, E-Newsletter, Screen at Session Room - Logo featured on the banner at the venue	$ 5,000
Bronze	- Advertisement of the company in the program book (1/2 page, Color) - Logo on Program Book, Official Website, E-Newsletter, Screen at Session Room - Logo featured on the banner at the venue	$ 2,000

● Type B (In-kind Support)

※ Items and benefits could be rearranged depends on the pandemic situations of COVID-19.
※ If the value of Type B is more than $5,000, it will be provided a free registration benefit that is equivalent to the Type A preferential condition.
※ IUMRS-ICA 2021 organizing committee reserves the right to rearrange the time for Short Speeches via Zoom.

USD 1 = KRW 1,000

LEVEL	BENEFITS	VALUE
Banquet	- Promotion speech during the banquet - Logo on Program Book, Official Website, E-Newsletter, Screen at Session Room - Logo featured on the banner at the venue - Logo featured on the banner of the banquet	Please contact a secretariat.
Welcome Reception	- Logo on Program Book, Official Website, E-Newsletter, Screen at Session Room - Logo featured on the banner at the venue - Logo featured on the banner of the welcome reception	
Souvenir	- Logo on Program Book, Official Website, E-Newsletter, Screen at Session Room - Logo featured on the banner at the venue - Logo featured on the banner of souvenir	
Coffee Break	- Logo on Program Book, Official Website, E-Newsletter, Screen at Session Room - Logo featured on the banner at the venue - Put the company promotion leaflet during Coffee Break (on request)	
Lanyard	- Logo on Program Book, Official Website, E-Newsletter, Screen at Session Room - Logo featured on the banner at the venue - Logo featured on every single lanyard of nametag.	
Mask	- Logo on Program Book, Official Website, E-Newsletter, Screen at Session Room - Logo featured on the banner at the venue - Logo featured on every single mask for all of our participants on-site	
Participants Paper Band	- Logo on Program Book, Official Website, E-Newsletter, Screen at Session Room - Logo featured on every single paper band provided to entering the conference after checking the temperature at the registration desk. - Logo featured on the banner at the venue	
Short Speeches via Zoom during the break time	- Logo on Program Book, Official Website, E-Newsletter, Screen at Session Room - Short speeches via zoom for company introduction during the break time - Logo featured on the banner at the venue	

[Mask]

[Participants Paper Band]

- It will be provided to entering the conference after checking the temperature at the registration desk (different colors for each day).

Sponsorship Application Form

Please fill out the below application form, and send it back to the secretariat.

IUMRS-ICA 2021 Secretariat
[Tel: 042-472-7460 / Fax: 042-472-7459 / E-mail: secretariat@iumrs-ica2021.org]

1. Information of the Company

■ **Company Name**			
■ **President**		■ **Person in charge**	
■ **Department**			
■ **Address**			
■ **Zip Code**		■ **Country**	
■ **Tel**		■ **Fax**	
■ **E-mail**			

2. Sponsorship

Type	Level	Amount

3. Account Information

Account Holder: The Materials Research Society of Korea
Account Number: 102-910059-81804
Bank Name: KEB Hana Bank
Swift Code: KOEXKRSE
Bank Address: Head office, KEB Hana Bank, 66, Eulji-ro, Jung-gu, Seoul, South Korea
Branch: Hana Bank Samsung Station Financial Center Branch

Name of Applicant: _____ **Date:**_____

Signature:_____