

PRESM 2024 Program

Focus Session

[A] High Precision Metrology and Field Robot Application

Introduction This session covers two topics related to precision robot technology in industrial applications. The first topic discusses robot technologies for precision metrology, including sensor technologies for position measurement in harsh environments, mechanical systems for ultra-precise and high-speed positioning, and applications of infrared laser beam transport technology used in semiconductor equipment. The second topic presents cases of field robot technology applicable in industrial settings and applications of 3D printing. These technologies represent important examples showcasing the state-of-the-art applications of industrial robot technology.

Organizer Prof. Jay I. Jeong (Kookmin University, Korea)

Date, Time Monday, 8 July, 2024 / 09:00-10:15 (KST, UTC +09:00)

Details **Session Chairs:** Profs. Yangjin Kim (Pusan National University, Korea)
Changwon Kim (Pukyong National University, Korea)

Paper No.	Time	Title / Presenter & Authors
M1-FA1	09:00-09:15 (15)	Design of a Novel ROS-based Autonomous Mobile Robot for Mushroom Cultivation *Rong-Yuan Jou (National Formosa University, Taiwan), Jin-Chuan Chi (National Formosa University), Hsin-Der Shih (Taiwan Agricultural Research Institute, Ministry of Agriculture, Executive Yuan)
M1-FA2	09:15-09:30 (15)	Mass Production via Projection-based 3D Printer *Brian Lee (Sungkyunkwan University, Korea), Minsung Kim (Sungkyunkwan University)
M1-FA3	09:30-09:45 (15)	Development of Testing Methods for Evaluating Drone Sensor Performance in Low Visibility Conditions Using a Smoke Chamber *Bong Keun Kim (National Institute of Advanced Industrial Science & Technology, Japan), Yasushi Sumi (National Institute of Advanced Industrial Science & Technology), Takuya Ogure (National Institute of Advanced Industrial Science & Technology), Kiyoshi Fujiwara (National Institute of Advanced Industrial Science & Technology)
M1-FA4	09:45-10:00 (15)	Error Compensation of the Moving Mirror Assembly in the Spectroscopic Sensor with Ultra-small Fast Steering Mirror *Ho Sang Kim (Institute for Advanced Engineering, Korea), Jin Woo Kim (Institute for Advanced Engineering), Hyo Wook Bae (Moori Technologies Co., Ltd.), Do Hyun Park (Moori Technologies Co., Ltd.)
M1-FA5	10:00-10:15 (15)	Active Manipulation of Deep Ultraviolet Laser Beam for High Precision Semiconductor Metrology *Young-Jin Kim (KAIST, Korea), Seungjai Won (KAIST), Taewon Kim (KAIST), Seungman Choi (KAIST), Byunggi Kim (KAIST), Jungyoon Kim (KAIST), Seung-Woo Kim (KAIST)

PRESM 2024 Program

[B] Advanced Instrumentation and Virtualization for Smart Manufacturing

Introduction In the era of digital transformation, various virtualization technologies, including digital twins, metaverse, augmented/virtual/extended reality (AR/VR/XR), and manufacturing avatars, are fused to effectively implement smart manufacturing platforms. In addition, novel digital instrumentation technology must be developed to enable the collection and processing of big data in smart manufacturing practices. This focus session covers advanced instrumentation and virtualization technologies to accelerate the advent of the smart manufacturing paradigm.

Organizer Sang Won Lee (Sungkyunkwan University, Korea)

Date, Time Monday, 8 July, 2024 / 10:40-12:00 (KST, UTC +09:00)

Details **Session Chairs:** Profs. Sang Won Lee (Sungkyunkwan University, Korea)
Chih-Hsing Chu (National Tsing Hua University, Taiwan)

Paper No.	Time	Title / Presenter & Authors
M2-FB1 Keynote	10:40-11:05 (25')	Augmented Reality Assisted Human-robot Collaboration in Smart Manufacturing *Chih-Hsing Chu (National Tsing Hua University, Taiwan)
M2-FB2 Keynote	11:05-11:30 (25')	Via Metrology, Inspection and Digital Review System for Advanced Electronics Packaging *Cha Bum Lee (Texas A&M University, USA), Kuan Lu (Texas A&M University), Pengfei Lin (Texas A&M University), Heebum Chun (Texas A&M University), Jiyong Park (Korea Institute of Industrial Technology), Byunggi Kim (The University of Tokyo), Masahiro Nomura (The University of Tokyo)
M2-FB3	11:30-11:45 (15')	Industrial Twinverse with Digital Twin and Metaverse for Smart Manufacturing Platform *Sang Won Lee (Sungkyunkwan University, Korea)
M2-FB4	11:45-12:00 (15')	Research on the Metaverse Platform for Smart Robotic Manufacturing Processes *DongChan Kim (UNIST, Korea), HyungWook Park (UNIST), Chang Hyeon Mun (UNIST), JongWoo Han (UNIST)

PRESM 2024 Program

[C] Intelligent Materials and Design

Introduction Intelligent materials and design can react to the environmental variation and switchable system. These materials and design have been the main factors for the future industries. The researches on these fields have been including the multifunctional materials and flexible design for the emerging industries.

Organizer Prof. Hyung Wook Park (UNIST, Korea)

Date, Time Monday, 8 July, 2024 / 13:00-14:35 (KST, UTC +09:00)

Details **Session Chairs:** Profs. Young-Jin Kim (KAIST, Korea)
 Simon Park (University of Calgary, Canada)

Paper No.	Time	Title / Presenter & Authors
M3-FC1 Keynote	13:00-13:25 (25')	Nanocomposite Innovations: Shaping the Future of Sensing and Battery Manufacturing *Simon Park (University of Calgary, Canada)
M3-FC2 Keynote	13:25-13:50 (25')	Studies toward DX in Machining by a Computer Aided Process Planning System *Keiichi Nakamoto (Tokyo University of Agriculture & Technology, Japan)
M3-FC3	13:50-14:05 (15')	Tensile Testing as Alternative Evaluation Method for Enhanced Adhesion of Diamond-like Carbon Coatings with Different Titanium Buffer Layers *Young-Jun Jang (Korea Institute of Materials Science, Korea), Jae-Il Kim (Korea Institute of Materials Science), Jongkuk Kim (Korea Institute of Materials Science)
M3-FC4	14:05-14:20 (15')	Relationship between Sintering Conditions and Effective Thermal Conductivities of Al-TiB ₂ Particle Dispersed Composite *Kenjiro Sugio (Hiroshima University, Japan), Haruki Matsuura (Hiroshima University), Gen Sasaki (Hiroshima University)
M3-FC5	14:20-14:35 (15')	Self-assembled VS ₂ /MXene Nanocomposite Electrodes: A Promising Approach for Next-generation Supercapatteries *Rahul Sadashiv Ingole (Seoul National University of Science & Technology, Korea), Jong G. Ok (Seoul National University of Science & Technology), Kwangjun Kim (Seoul National University of Science & Technology), Minwook Kim (Seoul National University of Science & Technology), Yong Tae Kim (Seoul National University of Science & Technology), Snehal Laxman Kadam (Seoul National University)

PRESM 2024 Program

[D] Precision Measurement for Precision Engineering

Introduction The importance of precision measurement in the field of precision engineering is gradually increasing. In this focus session will cover several topics widely used in advanced precision engineering, such as length measurement, vibration measurement, temperature measurement, and micro/nano-scale dimensional metrology.

Organizer Dr. Jonghan Jin (Korea Research Institute of Standards & Science, Korea)

Date, Time Monday, 8 July, 2024 / 14:50-16:30 (KST, UTC +09:00)

Details **Session Chairs:** Dr. Jonghan Jin (Korea Research Institute of Standards & Science, Korea)
Prof. Cha Bum Lee (Texas A&M University, USA)

Paper No.	Time	Title / Presenter & Authors
M4-FD1 Keynote	14:50-15:15 (25')	Traceable and Accurate Measurements at the Nanoscale *Bakir Babic (National Measurement Institute Australia, Australia)
M4-FD2	15:15-15:30 (15')	Evaluation of Angular Errors in a Piezo Flexure Scanner for Metrological Atomic Force Microscopy *Ryosuke Kizu (National Institute of Advanced Industrial Science & Technology, Japan), Ichiko Misumi (National Institute of Advanced Industrial Science & Technology)
M4-FD3	15:30-15:45 (15')	Absolute Distance Measurement based on Multi-wavelength Interferometry Directly Using Many Comb Modes of an Electro-optic Comb *Jungjae Park (Korea Research Institute of Standards & Science, Korea), Jonghan Jin (Korea Research Institute of Standards & Science), Yoon-Soo Jang (Korea Research Institute of Standards & Science)
M4-FD4	15:45-16:00 (15')	The Comparative Study of Optical Property Changes in Molded Lenses due to Material Property Variations *June Park (Korea Photonics Technology Institute, Korea)
M4-FD5	16:00-16:15 (15')	Measurement of the Reduction of Airborne Wear Particles Generated at the Wheel-rail Contact: Effect of Tap Water Application *HyunWook Lee (Korea Railroad Research Institute, Korea), YuJin Lee (University of Science and Technology)
M4-FD6	16:15-16:30 (15')	Improving Measurement Precision of Frequency Comb Based Spectral Interferometry by Line-by-line Spectral Shaping *Yoon-Soo Jang (Korea Research Institute of Standards & Science, Korea)

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[E] Advanced Manufacturing and Monitoring System

Introduction This session presents advancements in manufacturing and monitoring systems, showcasing pioneering research and cutting-edge technology in the field. It features a variety of topics that extend the limits of conventional manufacturing techniques through the integration of state-of-the-art technologies in additive manufacturing, material processing, digital twin applications, and AI-based data-driven simulations.

Organizer Prof. Sung-Hoon Ahn (Seoul National University, Korea)

Date, Time Tuesday, 9 July, 2024 / 09:00-10:50 (KST, UTC +09:00)

Details **Session Chairs:** Drs. Hyunmok Son (Seoul National University, Korea)
Daniel Zontar (Fraunhofer IPT, Germany)

Paper No.	Time	Title / Presenter & Authors
T1-FE1 Keynote	09:00-09:25 (25)	Product Design and Development with Metal Binder Jetting Additive Manufacturing *Chung-Soo Kim (Korea Institute of Industrial Technology, Korea)
T1-FE2 Keynote	09:25-09:50 (25)	Fabrication and Field Emission Characteristic of Carbon-based Nano Composite Materials *Hung-Yin Tsai (National Tsing Hua University, Taiwan)
T1-FE3	09:50-10:05 (15)	Physics-informed Digital Twin for Virtual Assembly Variation Prediction *Roham Sadeghi Tabar (Chalmers University of Technology, Sweden), Kristina Wärmefjord (Chalmers University of Technology), Rikard Söderberg (Chalmers University of Technology)
T1-FE4	10:05-10:20 (15)	Simulating Complex Systems From Sample Data for Data Augmentation in AI and Training *Daniel Zontar (Fraunhofer IPT, Germany), Christian Brecher (Fraunhofer IPT)
T1-FE5	10:20-10:35 (15)	Additive Manufacturing with One-time Robotic Ultrasonic Forging/ Shaping *Curtis Kuan (Industrial Technology Research Institute, Taiwan), Sheng-Chieh Hsu (Industrial Technology Research Institute), Su-Jhen Lin (Industrial Technology Research Institute), Chin-Chi Hsiao (Industrial Technology Research Institute), Chien-Yu Wu (Industrial Technology Research Institute), Shu Huang (Industrial Technology Research Institute)
T1-FE6	10:35-10:50 (15)	Comprehensive Evaluation of Reinforcement Learning for HVAC Control Using An Open-source Building Simulation Platform *Xinlin Wang (Commonwealth Scientific and Industrial Research Organisation, Australia), Hao Wang (Monash University)

PRESM 2024 Program

[F] Lab on a Chip and Precision Engineering for Bio Health

Introduction Lab on a Chip and precision engineering technologies are at the forefront of bio health innovations, creating transformative solutions for medical and scientific challenges. To foster scientific exchange and collaboration among multidisciplinary researchers, we have invited two keynote speakers and three distinguished experts to share their insights. This session will cover cutting-edge research and future perspectives in this dynamic field.

Organizer Prof. Yun Jung Heo (Kyung Hee University, Korea)

Date, Time Tuesday, 9 July, 2024 / 13:00-14:35 (KST, UTC +09:00)

Details **Session Chairs:** Prof. Yun Jung Heo (Kyung Hee University, Korea)
Dr. Ge Gao (Beijing Institute of Technology, China)

Paper No.	Time	Title / Presenter & Authors
T2-FF1 Keynote	13:00-13:25 (25)	A Fully Integrated Lab-on-a-chip for Space Exploration: Astrobiology and Crew Health Monitoring *Jungkyu (Jay) Kim (University of Utah, USA), Zachary Estlack (University of Utah), Andrew Pack (University of Utah), Matin Golozar (University of Utah), Anna Butterworth (University of California, Berkeley), Richard Mathies (University of California, Berkeley),
T2-FF2 Keynote	13:25-13:50 (25)	Direct Ink Writing 3D Printing for Fabricating Microfluidic Devices *Michinao Hashimoto (Singapore University of Technology & Design, Singapore)
T2-FF3	13:50-14:05 (15)	Microchannel Wall Consisting of Tiny Pillars for Higher Throughput of Image-activated Large-cell Sorting *Akihiro Isozaki (Ritsumeikan University, Japan), Yuma Nakazawa (Ritsumeikan University)
T2-FF4	14:05-14:20 (15)	Engineering Microphysiological System for Advancing Disease Modeling and Drug Testing *Jessie Sungyun Jeon (KAIST, Korea)
T2-FF5	14:20-14:35 (15)	Studying Bone Regeneration with Scaffold and Bone Defect Morphology: Contact Area and Pore Direction *Min-Soo Ghim (Wonkwang University, Korea), Young-Sam Cho (Wonkwang University), You Min Kim (Wonkwang University), Su-Ji Han (Wonkwang University), Meiling Quan (Beihua University), Young Yul Kim (Catholic University of Korea)

PRESM 2024 Program

[G] Biofabrication and Additive Manufacturing for Future Health

Introduction Biofabrication and Additive Manufacturing are transformative technologies that enable the creation of multiscale 3D architectures using diverse living cells and biomaterials. These advancements possess the potential to generate functional tissues and organs with significant translational prospects in clinical settings. This session features esteemed presenters who will foster scientific discourse, enhance professional networks, and cultivate collaborative relationships among multidisciplinary researchers. We will delve into pioneering research and forward-looking perspectives on the impact of biofabrication in advancing healthcare.

Organizer Prof. Dong Sung Kim (POSTECH, Korea)

Date, Time Tuesday, 9 July, 2024 / 14:50-16:25 (KST, UTC +09:00)

Details **Session Chairs:** Profs. Dong Sung Kim (POSTECH, Korea)
 Michinao Hashimoto (Osaka University, Japan)

Paper No.	Time	Title / Presenter & Authors
T3-FG1 Keynote	14:50-15:15 (25)	Bio-to-byte: Stealthy Neural Recorder for Primates *Kyung-In Jang (Daegu Gyeongbuk Institute of Science & Technology, Korea)
T3-FG2 Keynote	15:15-15:40 (25)	Cell Surface Engineering for Biofabrication and Regenerative Medicine *Michiya Matsusaki (Osaka University, Japan)
T3-FG3	15:40-15:55 (15)	Coaxial Bioprinting of Vascular Grafts and Disease Models *Ge Gao (Beijing Institute of Technology, China)
T3-FG4	15:55-16:10 (15)	High-precision 3D Cell Spheroid Printing Technology to Produce Engineered Tissue with Enhanced Functionality *Hyun-Wook Kang (UNIST, Korea)
T3-FG5	16:10-16:25 (15)	Bioprinting Technology for Advanced Tissue Therapeutics *Jinah Jang (POSTECH, Korea)

PRESM 2024 Program

[H] Sustainable Future Energy for Carbon Neutralization

Introduction A lot of research on sustainable energy technology and related manufacturing techniques is being conducted around the world to realize carbon neutrality. In this session, we will review and discuss hydrogen production, solid state batteries, and the latest technologies and manufacturing technology trends related to carbon neutralization.

Organizer Prof. Young Beom Kim (Hanyang University, Korea)

Date, Time Wednesday, 10 July, 2024 / 09:30-10:50 (KST, UTC +09:00)

Details **Session Chairs:** Profs. Young Beom Kim (Hanyang University, Korea)
Jun-Ki Choi (University of Dayton, USA)

Paper No.	Time	Title / Presenter & Authors
W1-FH1 Keynote	09:30-09:55 (25')	Enhanced Durability of Oxygen Electrodes via Atomic-scale Surface Overcoat *Min Hwan Lee (University of California, USA)
W1-FH2 Keynote	09:55-10:20 (25')	Multiscale Pathways for Achieving Carbon Neutrality through Industrial Decarbonization *Jun-Ki Choi (University of Dayton, USA)
W1-FH3	10:20-10:35 (15')	Liquid Lithium Metal Processing of Ultrathin Metal Anodes for Solid State Batteries *Yun Seog Lee (Seoul National University, Korea)
W1-FH4	10:35-10:50 (15')	Hydrogen Energy/Electrochemical/Thermochemical Clean Hydrogen Production Technology *Sangwook Park (Seoul National University, Korea)

PRESM 2024 Program

[I] Micro/Nano Manufacturing Technology

Introduction Micro/Nano manufacturing technology is being performed in a variety of domains, ranging from the creation of micro/nano structure to the methodologies for device fabrication with functionality. Various applications of micro/nano novel process and manufacturing technologies will be covered in this session. These technologies have great potential for use in numerous industries and will give useful insights for extended investigation.

Organizer Dr. Jeongdai Jo (Korea Institute of Machinery Materials, Korea)

Date, Time Wednesday, 10 July, 2024 / 13:00-14:30 (KST, UTC +09:00)

Details **Session Chairs:** Prof. Bong-Ke Lee (Chonnam National University, Korea)
Dr. Joon-wan Kim (Tokyo Institute of Technology, Japan)

Paper No.	Time	Title / Presenter & Authors
W2-FI1 Keynote	13:00-13:25 (25')	Transformative Approaches in Nanofiber Fabrication: The Impact of Precision Near-field Electrospinning in Micro/Nano Manufacturing *Jiyoung Chang (University of Utah, USA), Tae-Gon Kim (Korea Institute of Industrial Technology)
W2-FI2 Keynote	13:25-13:50 (25')	Transfer-printing and Related Printing Technologies for Micro/Nano-structure and MEMS Fabrications *Arata Kaneko (Tokyo Metropolitan University, Japan)
W2-FI3 Keynote	13:50-14:15 (25')	Green and Intelligent Laser Manufacturing: Novel Processes and Multiphysics Simulation *Ming-Tsang Lee (National Tsing Hua University, Taiwan)
W2-FI4	14:15-14:30 (15')	Recast of Nanoporous Carbonized Micro-holes during Laser Drilling of Polyimide Film *Swami Siddharth (Industrial Technology Research Institute, Taiwan), Yi-Wei Lin (Industrial Technology Research Institute), Ming-Tsang Lee (National Tsing Hua University)

PRESM 2024 Program

[J] Advanced Materials and Processes for Additive Manufacturing

Introduction Additive manufacturing (AM) technologies have shown significant advancements across numerous industrial sectors. In this focus session, we will share insights into the latest innovative advancements in the additive manufacturing in view of materials science and process engineering.

Organizer Prof. Sang-hu Park (Pusan National University, Korea)

Date, Time Wednesday, 10 July, 2024 / 14:45-16:40 (KST, UTC +09:00)

Details **Session Chairs:** Profs. Sang-hu Park (Pusan National University, Korea)
Suk-Hee Park (Pusan National University, Korea)

Paper No.	Time	Title / Presenter & Authors
W3-FJ1 Keynote	14:45-15:10 (25')	Quality Prediction in Laser-directed Energy Deposition through Multi-sensor Fusion and Machine Learning *Seung Ki Moon (Nanyang Technological University, Singapore)
W3-FJ2 Keynote	15:10-15:35 (25')	Machine Learning-based AM Process Optimization *Parviz Kahhal (The University of Waikato, New Zealand)
W3-FJ3 Keynote	15:35-15:55 (25')	Digital Gastronomy - The Next Frontier of Additive Manufacturing *Chee Kai Chua (Singapore University of Technology & Design, Singapore)
W3-FJ4	15:55-16:10 (15')	Recent Research on Various Micro/Nano 3D Printing Processes in KITECH *Cheol Woo Ha (Korea Institute of Industrial Technology, Korea)
W3-FJ5	16:10-16:25 (15')	3D Printing of Fe Shape Memory Alloy and Its Potential Applications *Wook-Jin Lee (Pusan National University, Korea)
W3-FJ6	16:25-16:40 (15')	Defect Detection and Correction in Additive Manufacturing via Machine Learning Techniques *Suk-Hee Park (Pusan National University, Korea)

PRESM 2024 Program

[K] Smart Technology for Machine Tools and Manufacturing System

Introduction Machine tools and manufacturing systems are very important fields that form the basis of the manufacturing industry, which is currently undergoing innovation such as the 4th industrial revolution. This focus session discusses recent technological advances in machine tools and manufacturing systems.

Organizer Drs. Dong Yoon Lee (Korea Institute of Industrial Technology, Korea)
Peter Kang Jae Lee (DN Solutions, Korea)

Date, Time Thursday, 11 July, 2024 / 09:00-10:50 (KST, UTC +09:00)

Details **Session Chairs:** Drs. Dong Yoon Lee (Korea Institute of Industrial Technology, Korea)
Peter Kang Jae Lee (DN Solutions, Korea)

Paper No.	Time	Title / Presenter & Authors
H1-FK1 Keynote	09:00-09:25 (25)	Possibility of Large-scale Array of Temperature Sensors Interconnected in Series for Smart Manufacturing *Toru Kizaki (The University of Tokyo, Japan), Satsuma Ando (The University of Tokyo), Yuta Teshima (The University of Tokyo), Shun Tanaka (The University of Tokyo), Naohiko Sugita (The University of Tokyo)
H1-FK2 Keynote	09:25-09:50 (25)	Smart Cutting/Monitoring Technologies for Realization of Carbon-neutral Manufacturing *Takehiro Hayasaka (Nagoya University, Japan), Kyungki Lee (Nagoya University), Eiji Shamoto (Nagoya University)
H1-FK3	09:50-10:05 (15)	Comparative Analysis of Tooling Methods for Delamination Formations in the Edge Trimming Process of High-modulus CFRP *Dave Kim (Washington State University, USA), Tae-Gon Kim (Korea Institute of Industrial Technology), Sabbir Uddin (Washington State University), Seong Hyeon Kim (Korea Institute of Industrial Technology)
H1-FK4	10:05-10:20 (15)	Ultrashort Lasers for Smart Microfabrication & Instrumentation *Seung-Woo Kim (KAIST, Korea), Young-Jin Kim (KAIST)
H1-FK5	10:20-10:35 (15)	Reconfiguring Production Layout based on Product Module Lifecycle Using a Simulation-optimization Approach for Resource Efficiency *Jongsuk Lee (Nanyang Technological University, Singapore), Seung Ki Moon (Nanyang Technological University)
H1-FK6	10:35-10:50 (15)	Real-time Virtual Sensor with Physics Driven Digital Twin: Theory and Application *Jin-Gyun Kim (Kyung Hee University, Korea), Seungin Oh (Kyung Hee University), Hyunwoo Baek (Kyung Hee University), Ji-won Lee (Kyung Hee University), Dahye Son (Kyung Hee University)

PRESM 2024 Program

[L] Manufacturing Research in U.S.A.

Introduction Members of Manufacturing Alliance of Korean Engineers and Researchers (MAKER) who are conducting cutting edge research in advanced and smart manufacturing will present their research results.

Organizer Prof. Patrick Kwon (Michigan State University, USA)

Date, Time Thursday, 11 July, 2024 / 13:00-15:20 (KST, UTC +09:00)

Details **Session Chairs:** Dr. Chang-Ju Kim (Korea Institute of Machinery & Materials, Korea)
Prof. Jae-Won Choi (The University of Akron, USA)

Paper No.	Time	Title / Presenter & Authors
H2-FL1 Keynote	13:00-13:25 (25)	Processing Nitinol for Biomedical Stent Applications Using Selective Laser Melting *Patrick Kwon (Michigan State University, USA), Haseung Chung (Michigan State University), Tareq Md Sarower (Michigan State University), Alexandra DeFilippis (Michigan State University)
H2-FL2 Keynote	13:25-13:50 (25)	Innovative Manufacturing Solutions for Machine Tools Builders and Industries *Peter Kang Jae Lee (DN Solutions, Korea)
H2-FL3	13:50-14:05 (15)	Studying Tool Geometry Effect in Ultra-precision Machining of Single Crystal 8 mol% Ytria-stabilized Zirconia *Sangkee Min (University of Wisconsin-Madison, USA), Dae Nyoung Kim (University of Wisconsin-Madison), Suk Bum Kwon (University of Wisconsin-Madison)
H2-FL4	14:05-14:20 (15)	Process Monitoring and Control in Metal Additive Manufacturing *Jihoon Jeong (Texas A&M University, USA)
H2-FL5	14:20-14:35 (15)	Additive Manufacturing of Rubber Using Direct-ink-write (DIW) *Jae-Won Choi (The University of Akron, USA), Sarath Kamath (The University of Akron), Daewoong Park (The University of Akron), Mehdi Sahami (The University of Akron)
H2-FL6	14:35-14:50 (15)	Laser-assisted Ultrafine Selective Metallization of Glass Surface Using Supersonic Spray Deposition *Seunghwan Jo (Korea Military Academy, Korea), Martin B. -G. Jun (Purdue University), Semih Akin (Rensselaer Polytechnic Institute), Minsoo Park (Seoul National University of Science & Technology)
H2-FL7	14:50-15:05 (15)	Factors Affecting Forces in Deep-hole Bone Drilling *Jueun Lee (Cal Poly Humboldt, USA), Justin Boetius (Abbott Laboratories)
H2-FL8	15:05-15:20 (15)	Generalized and Generative AI for Manufacturing *Martin B. -G. Jun (Purdue University, USA), Jiho Lee (Purdue University), Eunseob Kim (Purdue University), Yuseop Sim (Purdue University), Changheon Han (Purdue University), Hojun Lee (Purdue University)