PRESM 2025_ORAL Program : Plenary, Keynote Speech & Focus session

Topic / Organizer	No.	Focus No.	Start	End	Time	Type	Presenter	Affiliation	Country	Title
Monday, 7 July										
Registration Desk 10:00-17:30										
Coffee Break			1000	1030	30					
Opening			1030	1050	20					
【M1】Focus A	1	M1-FA1	1050	1115	25	Keynote	Chih-Yung Huang	National Tsing Hua University	Taiwan	Precision Measurements with Micrometer Resolution in Microscale Thermal-fluid Science
Micro/Nano Manufacturing Technology	2	M1-FA2	1115	1130	15	Regular	Sanghoon Ahn	Korea Institute of Machinery & Materials	Korea	Investigation of Parameter Effects in Water-guided Laser Processing
Organized by Dr. Jeongdai Jo (Korea Institute of Machinery & Materials, Korea)	3	M1-FA3	1130	1145	15	Regular	Shuhei Kodama	Tokyo City University	Japan	Laser-assisted Scanning Electrochemical Machining of Titanium Alloys for Micromachining
Session Chairs: Dr. Sanghoon Ahn (Korea Institute of Machinery & Materials, Korea) & Prof. Shuhei Kodama (Tokyo City University)	4	M1-FA4	1145	1200	15	Regular	Hyun Jun Ryu	KAIST	Korea	Scalable Manufacturing of CNT Embedded Hierarchical Surface for Piezo-electric Tactile Sensing
Lunch_Day1			1200	1300	60					
【M2】Focus B	1	M2-FB1	1300	1325	25	Keynote	Seonghwan Kim	University of Calgary	Canada	Advanced Functional Nanocomposites and their Applications in Physical/Chemical Sensing
Green and Smart Materials and Processes	2	M2-FB2	1325	1350	25	Keynote	Junsuk Rho	POSTECH	Korea	Sustainable Manufacturing of Optical Metasurfaces for Imaging, Sensing and Display
Organized by Prof. Sung-Hoon Ahn (Seoul National University, Korea)	3	M2-FB3	1350	1405	15	Regular	Ji Ho Jeon	University of Connecticut	USA	Synergistic Effects of Ultrasonic Cavitation and Electropolishing in Post-processing of Additively Manufactured 316L Stainless Steel via Selective Laser Melting
Session Chairs: Profs. Ji Ho Jeon (University of Connecticut, Korea) & Ji-Hyeon Song (Dankook University, Korea)	4	M2-FB4	1405	1420	15	Regular	Jon Dewitt Dalisay	University of the Philippines Diliman	Philippines	Hybrid Accelerometer-optical Measurements for Modal Analysis of 3D-printed Cantilevered Beams with Artificial Damage
	5	M2-FB5	1420	1435	15	Regular	Doo-Man Chun	University of Ulsan	Korea	Fabrication of Superhydrophobic and Superhydrophilic Surfaces on Aluminum and Titanium using Laser Texturing and Green Post-processes
	6	M2-FB6	1435	1450	15	Regular	Young-Jin Kim	KAIST	Korea	Mass Production of Laser-induced Graphene Green Electronics for Energy Storage Applications
	7	M2-FB7	1450	1505	15	Regular	Ji-Hyeon Song	Dankook University	Korea	Development of Fused Powder Extrusion 3D Printing Process
Coffee Break			1505	1520	15					
【M3】Focus C	1	M3-FC1	1520	1545	25	Keynote	Hyung Gyu Park	POSTECH	Korea	Charged 2D Confinement of a Lamellar Ion Exchange Membrane for Blue Energy Harvesting
Energy Devices	2	M3-FC2	1545	1610	25	Keynote	Pei-Chen Su	Nanyang Technological University	Singapore	Enhancing Electrochemical Performance of Perovskite Electrodes via Surface Modification for Solid Oxide Cells
Organized by Prof. Suk Won Cha (Seoul National University, Korea)	3	M3-FC3	1610	1625	15	Regular	Rojana Pornprasertsuk	Chulalongkorn University	Thailand	Upcycling Primary Battery Materials: Converting Spent Cells into Rechargeable Zinc-Ion Energy Storage Systems
Session Chairs: Profs. Suk Won Cha (Seoul National University, Korea) & 000	4	M3-FC4	1625	1640	15	Regular	Hyong June Kim	POSTECH	Korea	Surface Modification of Electrodes by Plasma Enhanced Atomic Layer Deposition for Solid Oxide Cells
Break			1640	1650	10					
POSTER I		**POSTER I**	1650	1750	60		[Regular] Machine Tools & Systems Materials & Design Micro/Nano Technology [Special] Innovative Design and Integrated Manufacturing			

PRESM 2025_ORAL Program : Plenary, Keynote Speech & Focus session

Topic / Organizer	No.	Focus No.	Start	End	Time	Type	Presenter	Affiliation	Country	Title
Tuesday, 8 July										
Registration Desk 08:30-17:30										
【T1】 Focus D	1	T1-FD1	900	925	25	Keynote	Chee Kai Chua	Singapore University of Technology & Design	Singapore	Print Me an Organ. Why Are We Not There Yet?
Advanced Bio-health Technologies	2	T1-FD2	925	950	25	Keynote	Shinji Deguchi	The University of Osaka	Japan	AI-Based Cellular Force Mapping for Precision Medicine
Organized by Prof. Hyun Wook Kang (UNIST, Korea)	3	T1-FD3	950	1005	15	Regular	Hee-Gyeong Yi	Chonnam National University	Korea	Multi-scale Vascular Tissue Fabrication with Reinforced Bioinks Using Advanced Bioprinting Technologies
Session Chairs: Profs. Hyun Wook Kang (UNIST, Korea) & Jennifer H. Shin (KAIST, Korea)	4	T1-FD4	1005	1020	15	Regular	Yeong-Jin Choi	Korea Institute of Materials Science	Korea	Customizable Bioinks with Peptide Tagging for Tissue-specific Microenvironments
	5	T1-FD5	1020	1035	15	Regular	Brian Lee	Sungkyunkwan University	Korea	Capillary-Driven ISF Sampling via a 3D-Printed Lattice Microneedle Array Patch
	6	T1-FD6	1035	1050	15	Regular	Hee-Kyeong Kim	Wonkwang University	Korea	Antibacterial Surfaces using Nanohole Structures: Bacteriostatic Effect on Staphylococcus aureus
Coffee Break			1050	1100	10					
Plenary I			1100	1140	40	Plenary	Denis Noble	Oxford University	UK	Born of Water, Built on Silicon. Are we so different in Intelligence
Lunch_Day2			1200	1300	60					
【T2】 Focus E	1	T2-FE1	1300	1325	25	Keynote	Kazutoshi Katahira	RIKEN	Japan	Ultra-precision Milling of Hard and Brittle Materials with PCD/NPD Microtools
Advanced Manufacturing Processes (1)	2	T2-FE2	1325	1350	25	Keynote	Sangkee Min	University of Wisconsin-Madison	USA	AI-driven Prediction of Critical Depth of Cut in Single Crystal Sapphire Ultra-precision Machining
Organized by Dr. Tae-Gon Kim (Korea Institute of Industrial Technology, Korea)	3	T2-FE3	1350	1405	15	Regular	Erhan Budak	Sabanci University	Turkey	Design and Manufacturing of a High-speed Motorized Spindle: Engineering Considerations and Insights
Session Chairs: Dr. Tae-Gon Kim (Korea Institute of Industrial Technology, Korea) & Prof. Ming-Tsang Lee (National Tsing Hua University, Taiwan)	4	T2-FE4	1405	1420	15	Regular	Ming-Tsang Lee	National Tsing Hua University	Taiwan	Laser Induced Carbonized Nanoporous Conductive Micro-via for Polymer-based Flexible Electronics
Coffee Break			1420	1435	15					
【T3】 Focus F	1	T3-FF1	1435	1450	25	Keynote	Kazuhito Ohashi	Okayama University	Japan	Temperature Measurements for High-quality and High-precision Grinding
Advanced Manufacturing Processes (2)	2	T3-FF2	1450	1505	15	Regular	Patrick Kwon	San Diego State University	USA	Flank Wear Prediction when Turning Low Alloy Pearlitic Steel using Machine Learning and FEM
Organized by Prof. Sangkee Min (University of Wisconsin-Madison, USA)	3	T3-FF3	1505	1520	15	Regular	Min-Kyeom Kim	Sungkyunkwan University	Korea	Highly Ductile Martensitic Stainless Steel Enabled by Metastable Austenite via Laser Powder Bed Fusion
Session Chairs: Profs. Sangkee Min (University of Wisconsin-Madison, USA) & Louis Angelo Danao (University of the Philippines, Philippines)	4	T3-FF4	1520	1535	15	Regular	Rudeemas Jankree	Thai-Nichi Institute of Technology	Thailand	Increase in Formability of Redrawn Cylindrical Cup by Using Zoning Lubricant Technique
	5	T3-FF5	1535	1550	15	Regular	Louis Angelo Danao	University of the Philippines	Philippines	Finite Element Model Validation of Abaca Fiber-reinforced Polymer Composite Beam Under Flexural Load
Break			1550	1600	10					
POSTER II		**POSTER II**	1600	1700	60		[Regular] Manufacturing Processes (1) Bio & Health New and Renewable Energy Sustainable Technology [Special] e-Chem Meditronic Systems			

PRESM 2025_ORAL Program : Plenary, Keynote Speech & Focus session

Topic / Organizer	No.	Focus No.	Start	End	Time	Type	Presenter	Affiliation	Country	Title
Wednesday, 9 July										
Registration Desk 09:30-17:30										
【W1】 Focus G	1	W1-FG1	1000	1025	25	Keynote	Doldet Tantraviwat	Chiang Mai University	Thailand	Power Diode Development: Overcoming the VF-Err Trade-off through Novel Process Integration
Intelligent Fab. Technology	2	W1-FG2	1025	1050	25	Keynote	Wassanai Wattanutchariya	Chiang Mai University	Thailand	Intelligent Food Fabrication: From Personalized Nutrition Research to Scalable Innovation with 3D Printing
Organized by Prof. Sang Won Lee (Sungkyunkwan University, Korea)	3	W1-FG3	1050	1105	15	Regular	Han Seo Ko	Sungkyunkwan University	Korea	Flow Field Investigation in a Parallel Plate CVD Reactor with a Showerhead and Baffle
Session Chairs: Profs. Moon Soo Bak & Hyung Mo Jeong (Sungkyunkwan University, Korea)	4	W1-FG4	1105	1120	15	Regular	Moon Soo Bak	Sungkyunkwan University	Korea	A Cost-effective Laser Absorption Technique for Diagnosing and Monitoring High-density Laser-induced Plasmas
	5	W2-FG5	1120	1135	15	Regular	Seong Je Park	Nanyang Technological University	Singapore	Design for Lattice Structure-Based Interfaces of Metal-polymer Hybrid Structure
	6	W2-FG6	1135	1150	15	Regular	Hyung Mo Jeong	Sungkyunkwan University	Korea	Structural Distortion and Oxidation State Control of Metal Oxides for Semiconductor Gas Sensors
Lunch_Day3			1200	1300	60					
Plenary II			1300	1340	40	Plenary	Jay lee	University of Maryland College Park	USA	Trends and Recent Advances of Industrial AI and Data-centric Metrology for Smart Resilient Manufacturing
Break			1340	1350	10					
【W2】 Focus H	1	W2-FH1	1350	1415	25	Keynote	Seung Ki Moon	Nanyang Technological University	Singapore	Software-defined X: Novel System Architecture for Flexible Manufacturing in Industry 4.0
Smart & Sustainable Manufacturing	2	W2-FH2	1415	1430	15	Regular	Job Immanuel Encarnacion	University of the Philippines Diliman	Philippines	Life Cycle Assessment of Horizontal Axis Tidal Turbines Applicable to Less Energetic Currents in the Philippines
Organized by Prof. Sang Won Lee (Sungkyunkwan University, Korea)	3	W2-FH3	1430	1445	15	Regular	Sang Won Lee	Sungkyunkwan University	Korea	Development of Vision AI-based Wafer Quality Inspection System
Session Chairs: Profs. Sang Won Lee (Sungkyunkwan University, Korea) & Job Immanuel Encarnacion (University of the Philippines Diliman, Philippines)	4	W2-FH4	1445	1500	15	Regular	Jinkee Lee	Sungkyunkwan University	Korea	Jetting, Coating, and Drying: Integrated Development for Advanced Material Printing
Coffee Break			1500	1510	10					
【W3】 Focus I	1	W3-FI1	1510	1535	25	Keynote	Erhan Budak	Sabanci University	Turkey	Machining Process Monitoring and Fault Detection using Physics Informed Machine Learning towards Unsupervised Manufacturing
Autonomous Manufacturing in Machining	2	W3-FI2	1535	1600	25	Keynote	Martin B.-G. Jun	Purdue University	USA	Autonomous Machining Chip Recognition and Removal System
Organized by Drs. Dong Yoon Lee (Korea Institute of Industrial Technology, Korea) & Chang-Ju Kim (Korea Institute of Machinery & Materials, Korea)	3	W3-FI3	1600	1615	15	Regular	Dong Yoon Lee	Korea Institute of Industrial Technology	Korea	Autonomous Manufacturing: Complete Intelligentization Beyond Complete Automation
Session Chairs : Drs. Dong Yoon Lee (Korea Institute of Industrial Technology, Korea) & Chang-Ju Kim (Korea Institute of Machinery & Materials, Korea)	4	W3-FI4	1615	1630	15	Regular	Chang-Ju Kim	Korea Institute of Machinery & Materials	Korea	Autonomous Machining Cell Using Machine Tool Digital Twins and Collaborative Robots
	5	W3-FI5	1630	1645	15	Regular	Huitaek Yun	KAIST	Korea	Utilizing Multi-view Images and Digital Twin for Autonomous Robotic Machine Tending in Machine Tools
	6	W3-FI6	1645	1700	15	Regular	Jongseong Choi	The State University of New York, Korea, Stony Brook University	Korea	Physics-Informed Neural Network (PINN) and Hyper-Realistic Digital Twin (3DGS) for Predictive Engineering System Assessment
POSTER III		**POSTER III**	1700	1800	60		[Regular] Manufacturing Processes (2) Automation, Measurement & Control [Special] Railway Engineering Multidisciplinary Research & Mechatronics for Aero/Defense Applications Human-centered Convergence Mechanical Solution			

PRESM 2025_ORAL Program : Plenary, Keynote Speech & Focus session

Topic / Organizer	No.	Focus No.	Start	End	Time	Type	Presenter	Affiliation	Country	Title
Thursday, 10 July										
Registration Desk 08:30-16:30										
【H1】 Focus J	1	H1-FJ1	900	925	25	Keynote	Steven R. Schmid	University of North Carolina at Charlotte	USA	Ubiquitous and Latent AI: The Future of Machinery
Robotics and Manufacturing	2	H1-FJ2	925	950	25	Keynote	Daniel Zontar	Fraunhofer IPT	Germany	Intelligent Production Machines
Organized by Prof. Sung-Hoon Ahn (Seoul National University, Korea)	3	H1-FJ3	950	1005	15	Regular	Martin B.-G. Jun	Purdue University	USA	Autonomous Robot Motion Planning with Adaptive Safe Set (ARMPASS)
Session Chairs: 000 & 000	4	H1-FJ4	1005	1020	15	Regular	Jonghwan Baek	Korea Institute of Robotics & Technology Convergence	Korea	Study on Improved Manipulator Control Method for Remote Inspection of Ropeway Facilities
	5	H1-FJ5	1020	1035	15	Regular	Sung-Hyuk Song	Dongguk University	Korea	Variable Stiffness Morphing Wheel for Overcoming Various Obstacles
	6	H1-FJ6	1035	1050	15	Regular	Kyungjin Oh	Taelim Industrial Corp	Korea	Digital Transformation of SME with Robotics and Digital Twin Technologies: Efficiency and Agility
Coffee Break			1050	1100	10					
Plenary III			1100	1140	40	Plenary	Thapanee Sarakonsri	Chiang Mai University	Thailand	Toward Sustainable Energy Storage: Biomass to Efficient Anodes for Next-gen Batteries
Lunch_Day4			1200	1300	60					
【H2】 Focus K	1	H2-FK1	1300	1325	25	Keynote	Daewook Kim	The University of Arizona	USA	Quasi-ray Tracing-based Precision Optical Alignment using Bessel Beam
Automation, Measurement & Control	2	H2-FK2	1325	1340	15	Regular	Youngmin Kim	Chungnam National University	Korea	Design of Data Management System based on Architecture Framework for CBM+
Organized by Prof. Hyeong-Joon Ahn (Soongsil University, Korea)	3	H2-FK3	1340	1355	15	Regular	Dongwook Lee	Kongju National University	Korea	Trigonometric-based Motion Profile Optimization Strategy to Minimize Residual Vibration under Limited Time Conditions and System Uncertainties
Session Chairs: Profs. Hyeong-Joon Ahn (Soongsil University, Korea) & Jung Woo Sohn (Kumoh National Institute of Technology, Korea)	4	H2-FK4	1355	1410	15	Regular	Kyunghoon Jung	Hyundai Motors Co.	Korea	Study on CAE Techniques for Deriving Single Component Durability Test Specification of Automotive Suspension Componen
Coffee Break			1410	1420	10					
【H3】 Focus L	1	H3-FL1	1420	1445	25	Keynote	Patrick Kwon	San Diego State University	USA	Journey into Additive Manufacturing
AI in Design and Manufacturing	2	H3-FL2	1445	1500	15	Regular	Chih-Hsing Chu	National Tsing Hua University	Taiwan	Artificial Intelligence-assisted Anomaly Detection of Fluid Connector Joints in Industrial Environments
Organized by Prof. Sung-Hoon Ahn (Seoul National University, Korea)	3	H3-FL3	1500	1515	15	Regular	Jihyun Lee	University of Calgary	Canada	A Transfer Learning Approach for Chatter Detection in Multi-posture Robot Machining
Session Chairs: 000 & 000	4	H3-FL4	1530	1530	15	Regular	JiWoong Han	Korea Institute of Robotics & Technology Convergence	Korea	Development of a Touch-based Robotic System for Coke Oven Door Sealing
	5	H3-FL5	1530	1545	15	Regular	Hyungjung Kim	Konkuk University	Korea	Enabling Data-driven Manufacturing in SMEs: An Appropriate Smart Manufacturing Approach
	6	H3-FL6	1545	1600	15	Regular	Dong Min Kim	Tech University of Korea	Korea	A Constructed Fundamental Dataset for Graph Neural Network Training in Clamping Feature Recognition in Machining Processes
Break			1600	1730	90					
Official Banquet			1730	1930	120		PRESM2025 Award & Farewell			