

## Poster Presentation I

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**Monday, 8 July, 16:30-17:30**

(Grand Ballroom 4)

### 3. Automation, Measurement & Control

- PP3-001** A003 **A High Linear Two Stage LNA Using Post Linearization Technique for Radar Application**  
Unal Aras (Pukyong National University)  
Jee Youl Ryu (Pukyong National University)  
Tahesin Delwar (Pukyong National University)  
Gi Hong Park (Pukyong National University)  
Sun Woo Lee (Pukyong National University)
- PP3-002** A007 **Synchronous Measurement of Position-independent Geometric Errors of Dual Rotary Axes on Five-axis Machine Tools**  
Chien-Sheng Liu (National Cheng Kung University)  
Yu-Ta Chen (National Formosa University)  
Yu-Jun Yan (National Cheng Kung University)  
Chih-Chun Cheng (National Chung Cheng University)
- PP3-003** A022 **Control Method for Maintaining Dynamic Performance of a 6DOF Hybrid-reluctance-type Magnetic Levitator during Payload Mass Changes**  
Chang Hwan Kim (Yonsei University)  
Jun Young Yoon (Yonsei University)  
Hyeong Min Yoon (Yonsei University)  
Jae Woo Jung (Yonsei University)
- PP3-004** A033 **Sensorless Admittance Control for Continuum Robots: Parameter Identification Methodology**  
Myung-oh Kim (Korea Institute of Industrial Technology)  
Dong-Wook Lee (Korea Institute of Industrial Technology)  
Jaeuk Cho (Korea Institute of Industrial Technology)  
Dongwoon Choi (Korea Institute of Industrial Technology)  
Duk-Yeon Lee (Korea Institute of Industrial Technology)
- PP3-005** A034 **Machine Learning Based Parameter Identification Method for a Dual-arm Social Robot**  
Jaeuk Cho (Korea Institute of Industrial Technology)  
Dong-Wook Lee (Korea Institute of Industrial Technology)  
Myung-oh Kim (Korea Institute of Industrial Technology)  
Dongwoon Choi (Korea Institute of Industrial Technology)  
Duk-Yeon Lee (Korea Institute of Industrial Technology)

- PP3-006** A035 **Adaptive Feedforward Control for Precise Long-stroke Motion of 1-DOF Voice Coil Motor System with Friction-based Guides**  
Hyeong Min Yoon (Yonsei University)  
Jun Young Yoon (Yonsei University)
- PP3-007** A039 **A Study on the Driving Safety and Edge Case Analysis of Autonomous Vehicles on Digital Twin-based Campus and Real-time Vehicle Simulator**  
Kyung-Jin Lee (Yeungnam University)  
Seong-Jin Kwon (Yeungnam University)  
Dong-Whan Lee (Korea Automotive Technology Institute)  
Tae-Lim Kim (Korea Automotive Technology Institute)
- PP3-008** A040 **Energy-efficient AI: A Proposal for a New Systolic Array NPU Architecture Optimized for Data Processing**  
SunWoo Lee (Pukyong National University)  
Jeeyoul Ryu (Pukyong National University)  
GiHong Park (Pukyong National University)  
Unal Aras (Pukyong National University)  
Tahesin Samira Delwar (Pukyong National University)
- PP3-009** A045 **Measurement of Weld Beads Using Monocular Vision and Neural Network**  
Yung Jie Yang (National Cheng Kung University)  
Chun Hui Chung (National Cheng Kung University)  
Huang Lun Hao (National Cheng Kung University)
- PP3-010** A046 **Comparison of Different Convolutional Neural Network Models in Automatic Milling Process Planning**  
Chi-Wei Yang (National Cheng Kung University)  
Chunhui Chung (National Cheng Kung University)
- PP3-011** A047 **Pass-wise Tool Wear Prediction in Turning Operations based on Hilbert Transform and Long Short-term Memory Models**  
Bing-Xian Cai (National Cheng Kung University)  
Chun Hui Chung (National Cheng Kung University)
- PP3-012** A048 **Identifying Weld Seams from Point Cloud Data Using Random Forest Algorithm for Robotic Grinding**  
Kai-Bo Chang (National Cheng Kung University)  
Chun Hui Chung (National Cheng Kung University)  
Barry Huang (Da Shiang Automation)

## Poster Presentation I

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- PP3-013** A058 **Hall Sensor Based Position Estimation of Permanent Magnet Linear Synchronous Motor in Varying Acceleration Region Using Type-4 Phase-locked Loop**  
Kyujin Kang (Yonsei University)  
Jun Young Yoon (Yonsei University)  
Sangmin Lee (Yonsei University)  
Hyo Geon Lee (Yonsei University)  
Sang Won Jung (Yonsei University)  
Jae Hyun Kim (Yonsei University)  
Byung Wook Jeon (Yonsei University)  
Jae Heon Jung (Yonsei University)  
Chang Hwan Kim (Yonsei University)
- PP3-014** A060 **Adaptive Line Recognition for Diverse P&IDs: Approaches based on Data Augmentation and Transfer Learning**  
Yoochan Moon (Korea University)  
Duhwan Mun (Korea University)  
SeungTae Han (Korea University)  
Ji-Beob Kim (Korea University)
- PP3-015** A063 **Reduction Method of Moving and Vertical-direction Force Ripple in Permanent Magnet Linear Synchronous Motors**  
Sangmin Lee (Yonsei University)  
Jun Young Yoon (Yonsei University)  
Yoon Sik Kwon (Massachusetts Institute of Technology)  
Jae Heon Jung (Yonsei University)  
Kyujin Kang (Yonsei University)  
Jae Hyun Kim (Yonsei University)  
Sang Won Jung (Yonsei University)
- PP3-016** A084 **Soil Interaction Force Estimation via Identified Excavator Dynamics with Particle Filter**  
Seonwoo Kim (Korea University)  
Daehie Hong (Korea University)  
Jihun Kim (Korea University)  
Chanwoo Kim (Korea University)
- PP3-017** A094 **Development of Omnidirectional Mobile Robot with Two Driving and Steering Modules Used in Logistics Environment**  
Yong Choi (Korea Institute of Robotics & Technology Convergence)  
Eui-Jung Jung (Korea Institute of Robotics & Technology Convergence)  
SungHo Park (Korea Institute of Robotics & Technology Convergence)  
SoEun Son (Korea Institute of Robotics & Technology Convergence)  
ChulHee Bae (Korea Institute of Robotics & Technology Convergence)  
GunRae Cho (Korea Institute of Robotics & Technology Convergence)

- PP3-018** A125 **Numerical Study of Electromagnetic Field-based Leakage Diagnosis Method**  
Changhyeon Kim (Sungkyunkwan University)  
Eun-Ho Lee (Sungkyunkwan University)  
Young-Dae Shim (Sungkyunkwan University)  
Jihun Kim (Sungkyunkwan University)  
Ja-uk Gu (Sungkyunkwan University)
- PP3-019** A141 **Development of Moving WPT Circuit for Seat Slider**  
Suhan Kim (Gyeongbuk Technopark)  
Junyoung Chae (Gyeongbuk Technopark)  
EunJu Shin (Gyeongbuk Technopark)  
Hyunsub Yook (DAS)
- PP3-020** A148 **Application of Deep Learning in Parts Grasping**  
Alan C. Lin (National Taiwan University of Science and Technology)  
Kuan-Cheng Lin (National Taiwan University of Science and Technology)
- PP3-021** A170 **Congestion-based Path Planning for Autonomous Mobile Robot**  
TaeHyun Lim (Sejong University)  
SeongHan Kim (Sejong University)  
YongGu Kang (Sejong University)  
Sekang Oh (Sejong University)
- PP3-022** A171 **Data-driven Approach for Harmonic Drive Reducer Fault Diagnosis Using Acceleration Inertial Sensor and Machine Learning**  
Md Saiful Islam (Tech University of Korea)  
Hyo-Young Kim (Tech University of Korea)  
Jaehong Shim (Tech University of Korea)  
Kihyun Kim (Tech University of Korea)
- PP3-023** A188 **Intelligent Fire Detection via a Class Adaptive Ensemble Neural Network**  
Eunchan Do (Hanyang University)  
Ki-Yong Oh (Hanyang University)  
Suhyun Park (Hanyang University)
- PP3-024** A189 **Pilot Study of Camera-based End-effector Position Estimation in Endoscopic Robot for Control Purposes**  
Junho Hong (Korea University)  
Daehie Hong (Korea University)
- PP3-025** A191 **Simulation Study on Singularity Avoidance of a Roll-pitch Gimbal considering Inter-axis Coupling Effect**  
Jong In Han (Agency for Defense Development)  
Sun Ho Kim (Agency for Defense Development)

## Poster Presentation I

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- PP3-026** A204 **Minimization of Axial Flux Permanent Magnet Motors Cogging Torque Using Harmonic Balancing Skew Method**  
Jong Min Sung (Yonsei University)  
Jun Young Yoon (Yonsei University)  
Jae Hyun Kim (Yonsei University)  
Sangmin Lee (Yonsei University)  
Bo Min Kang (Yonsei University)  
Jung Min Park (Yonsei University)  
Kang Hee Lee (Yonsei University)  
Byung Wook Jeon (Yonsei University)  
Jae Heon Jung (Yonsei University)  
Jung Ki Lee (Yonsei University)  
Jun Hui Park (Yonsei University)  
Chang Hwan Kim (Yonsei University)  
Dong Hyeon Park (Yonsei University)
- PP3-027** A208 **Analysis of Expansion Force according to Geometric and Braiding Characteristics of Flow Disruptor for Treating Cerebral Aneurysm**  
Chanhee Won (Korea Institute of Industrial Technology)  
Hye-Jin Lee (Korea Institute of Industrial Technology)
- PP3-028** A212 **Active Learning based on Weighted Uncertainty Difference Sampling for an Automated Warping Detection Model in Additive Manufacturing**  
Jungyeon Moon (Incheon National University)  
Kijung Park (Incheon National University)
- PP3-029** A214 **An Automated Recommendation Framework of Design Parameters for Additive Manufacturing**  
Kyudong Kim (Incheon National University)  
Kijung Park (Incheon National University)
- PP3-030** A234 **Improving Cornering Feel of Autonomous Vehicle by Speed Control**  
MinSu Kim (Pusan National University)  
ChangSun Ahn (Pusan National University)
- PP3-031** A237 **AI Based System Modeling and MPC Design for EV Battery Thermal Management System**  
SeongJae Mun (Pusan National University)  
ChangSun Ahn (Pusan National University)  
SeongJae Mun (Pusan National University)  
KiHeon Nam (Pusan National University)

- PP3-032** A240 **Phase Feedback Control Method for High Frequency Synchronous Control of Multi-axis Pneumatic Cylinders**  
Beomsik Sim (Chungnam National University)  
Wonkyun Lee (Chungnam National University)  
Woo-Jin Lee (Korea Institute of Industrial Technology)
- PP3-033** A254 **Seamless Steering Handover from Autonomous to Human Driving**  
JungHee Kim (Pusan National University)  
ChangSun Ahn (Pusan National University)
- PP3-034** A255 **A Study on Maritime Drowning Victim Detection Using Attention Module based on CNN**  
Yang Zhao (Pukyong National University)  
Kyung-Chang Lee (Pukyong National University)  
Jung-Ho Kang (Pukyong National University)
- PP3-035** A256 **Novel Fringe Projection Method for 3D Surface Measurement Utilizing a Cylindrical Mechanical Projector**  
Mincheol Choi (Yonsei University)  
Jae-Sang Hyun (Yonsei University)
- PP3-036** A260 **Enhanced Camera Pose Estimation in a 2-projector Structured Light System**  
Sehoon Tak (Yonsei University)  
Jae-Sang Hyun (Yonsei University)  
Keunhee Cho (Yonsei University)
- PP3-037** A267 **High-resolution Tactile Sensor Using Structured Light**  
Ingu Yeo (Yonsei University)  
Jae-Sang Hyun (Yonsei University)
- PP3-038** A269 **Design of Underwater Image Contrast Enhancement Algorithm for Detection of Fish Farm Net Damage**  
Jung-Ho Kang (Pukyong National University)  
Kyung-Chang Lee (Pukyong National University)  
Uk-Jin Baek (Pukyong National University)
- PP3-039** A286 **The Significance of LiDAR Sensor Noise Modeling in Autonomous Driving in Adverse Weather Conditions for the Advancement of Road Safety**  
Junseok Heo (Chonnam National University)  
Seunghwoi Han (Chonnam National University)  
Hyeokjin Ju (Chonnam National University)  
Hyojung Kim (Chonnam National University)  
Heun Yun (Chonnam National University)

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- PP3-040** A304 **Precision Assembly System for Enhancing Optical Resolution of Endomicroscopic Imaging System**  
Yeonhee Chang (Daegu Gyeongbuk Institute of Science and Technology)  
Cheol Song (Daegu Gyeongbuk Institute of Science and Technology)  
Jintaek Im (Daegu Gyeongbuk Institute of Science and Technology)  
Myungho Lee (Daegu Gyeongbuk Institute of Science and Technology)  
Kyuhang Lee (General Optics Co., Ltd.)
- PP3-041** A309 **A Worker Following Robot Capable of Transportation and Weeding**  
Minsu Kang (Korea Institute of Robotics & Technology Convergence)  
Yongjun Choi (Korea Institute of Robotics & Technology Convergence)  
Heonsoo Choi (Korea Institute of Robotics & Technology Convergence)  
Hunggil Hong (Korea Institute of Robotics & Technology Convergence)  
Kibeom Park (CH Motors Co., Ltd.)
- PP3-042** A314 **Thin Film Thickness Measurement Using an Artificial Neural Network Algorithm with Consideration for Measurement Environment**  
Joonyoung Lee (University of Science and Technology)  
Jonghan Jin (University of Science and Technology)
- PP3-043** A318 **Design of Functional Architecture for Test Scenarios of Automated Valet Parking Systems**  
HyunJoon Kim (Kongju National University)  
MoonSik Kim (Kongju National University)
- PP3-044** A319 **Design of Path Tracker with Disturbance Observer for Autonomous Vehicle**  
HeungSik Park (Kongju National University)  
MoonSik Kim (Kongju National University)  
YoungChoon Kim (Kongju National University)  
JeongSeok Lee (Kongju National University)
- PP3-045** A321 **A Study on the Take-over Characteristics according to Non-driving Related Tasks in Autonomous Vehicle**  
DongJu Kim (Kongju National University)  
MoonSik Kim (Kongju National University)  
YoungChoon Kim (Kongju National University)  
DongHyun Im (Kongju National University)  
SunHong Park (Korea Automotive Technology Institute)

- PP3-046** A323 **Machine Learning-based Prediction of Weld Width in Aluminum Laser Scanning Welding Process with Coaxial Vision and Spectrum Monitoring**  
Woo-In Choo (Korea Institute of Industrial Technology)  
Dong Hyuck Kam (Korea Institute of Industrial Technology)  
Sungbin Im (Korea Institute of Industrial Technology)  
Minsun Oh (Korea Institute of Industrial Technology)  
Wonjung Ju (Korea Institute of Industrial Technology)  
Dongchoul Kim (Sogang University)
- PP3-047** A324 **Prediction of Penetration Depth Using Spectrometer and Photodiode at High-speed Laser Welding**  
Hyeonhee Kim (Korea Institute of Industrial Technology)  
Minjung Kang (Korea Institute of Industrial Technology)  
Joonghyeon Shin (Korea Institute of Industrial Technology)  
Yong Hoon Jang (Yonsei University)
- PP3-048** A333 **Analysis and Optimization of Droplet Shape according to Driving Signal in DOD System Using Non-newtonian Fluid**  
Kahee Lee (Tech University of Korea)  
Kwang Kim (Tech University of Korea)
- PP3-049** A351 **Enhanced Pressure Control Using a Disturbance Observer for Pneumatic Active Vibration Isolator**  
Jae-Min Shin (Soongsil University)  
Hyeong-Joon Ahn (Soongsil University)
- PP3-050** A253 **Reinforcement Learning-based Robot Arm Control for Pick and Place of Occluded Target Objects**  
Jinseok Kim (Soongsil University)  
Donghun Lee (Soongsil University)  
Taeho Kim (Soongsil University)  
Haneul Jeon (Soongsil University)  
Hojin Yoon (Soongsil University)  
Haegyem Choi (Soongsil University)
- PP3-051** A282 **Hierarchical Reinforcement Learning Based Target Object Manipulation in Unstructured Environments**  
Taeho Kim (Soongsil University)  
Donghun Lee (Soongsil University)  
Haneul Jeon (Soongsil University)  
Haegyem Choi (Soongsil University)  
Jinseok Kim (Soongsil University)  
Hojin Yoon (Soongsil University)



## Poster Presentation I

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### 4. Materials & Design

- PP4-001** A010 **Long-term Low Friction of Ti-overcoated and Doped Diamond-like Carbons**  
Jae-Il Kim (Korea Institute of Materials Science)  
Noritsugu Umehara (Nagoya University)
- PP4-002** A029 **Thermal Property of CNT Block Reinforced Cu Matrix Composite Materials**  
Bohan Li (Hiroshima University)  
Yongbum Choi (Hiroshima University)  
Kazuhiro Matsugi (Hiroshima University)  
Kenjiro Sugio (Hiroshima University)
- PP4-003** A036 **Design of Reinforced Bidirectional Artificial Muscles: Enhancing Force for Soft Bellows Actuators**  
Altair Sales Coutinho Junior (Sungkyunkwan University)  
Hugo Rodrigue (Sungkyunkwan University)  
Sarang Kim (Sungkyunkwan University)
- PP4-004** A052 **Biomimetic Modeling of Knee Bone Structure and Motion: Utilizing 3D Printing and Artificial Muscles**  
Minchae Kang (Dongguk University)  
Min-Woo Han (Dongguk University)  
Suyeon Seo (Dongguk University)
- PP4-005** A055 **Mimicking Knee Joint Movement through the Application of 3D Printing Technology and Shape Memory Alloy (SMA) Patches**  
Suyeon Seo (Dongguk University)  
Min-Woo Han (Dongguk University)  
Minchae Kang (Dongguk University)
- PP4-006** A065 **Investigation of the Tribological and Electrical Characteristics of CNT-metal Nanoparticle Composite Coating for Durable Electric Contact Element**  
Sang-Hoon Lee (Kyungpook National University)  
Hyun-Joon Kim (Kyungpook National University)
- PP4-007** A072 **Lubrication Characteristics of Vegetable Oil and Nanoparticles for Application of Eco-friendly Lubricants**  
Geon Kim (Kyungpook National University)  
Hyun-Joon Kim (Kyungpook National University)

- PP4-008** A076 **Highly Transparent, Colorless Optical Film with Outstanding Mechanical Strength and Folding Reliability Using Mismatched Charge-transfer Complex Intensification**  
Sung Woo Hong (Korea Institute of Industrial Technology)
- PP4-009** A095 **Novel 3D Analytical Modeling Method for Transverse Flux Linear Motors**  
Bo Min Kang (Yonsei University)  
Jun Young Yoon (Yonsei University)  
Jae Hyun Kim (Yonsei University)  
Kyujin Kang (Yonsei University)  
Byung Wook Jeon (Yonsei University)  
Kang Hee Lee (Yonsei University)  
Ji Won Han (Yonsei University)
- PP4-010** A097 **Additive Manufacturing for Skew Magnetization Fixture of Annular Magnet**  
Tsong-Wei Chang (National Cheng Kung University)  
Mi-Ching Tsai (National Cheng Kung University)  
Po-Wei Huang (National Cheng Kung University)  
Hsiao-Hung Yu (National Cheng Kung University)  
Ching-Chien Huang (National Kaohsiung University of Science and Technology)  
Chih-Chieh Mo (National Kaohsiung University of Science and Technology)
- PP4-011** A098 **Investigation of Axial-radial Bevel Magnetic Gear based on Magnetic 3D Printing**  
Po-Wei Huang (National Cheng Kung University)  
Tsong-Wei Chang (National Cheng Kung University)  
Hsiao-Hsien Huang (National Cheng Kung University)  
Pin-Hao Liao (National Cheng Kung University)  
I-Hua Jiang (National Cheng Kung University)  
Mi-Ching Tsai (National Cheng Kung University)
- PP4-012** A099 **Optimization of Flex Spline Design Variables considering Nominal-the-best Characteristic of Harmonic Drive**  
Hankun Yeon (Korea Electronics Technology Institute)  
Joo Han Kim (Korea Electronics Technology Institute)  
Myungsung Lee (Korea Electronics Technology Institute)
- PP4-013** A101 **Load Estimation of the Motor Grader Simulator Using F-T Sensor**  
Jihun Kim (Korea University)  
Daehie Hong (Korea University)  
Chanwoo Kim (Korea University)  
Seonwoo Kim (Korea University)

## Poster Presentation I

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- PP4-014 A102 Metameric Self-growing Overtube for Colonoscopy**  
Yongjung Lee (Korea University)  
Daehie Hong (Korea University)  
Chanwoo Kim (Korea University)  
Seonghyeon Won (Korea University)  
Woocheol Shin (Korea University)  
Jinwoo Park (Korea University)  
MyungIn Jin (Korea University)
- PP4-015 A103 A Design of Piezoelectrically Driven Moving Mirror Assembly (MMA) Using Circular Bending PZT Plates**  
Jin Woo Kim (Institute for Advanced Engineering)  
Ho Sang Kim (Institute for Advanced Engineering)
- PP4-016 A107 Development of a System to Assist Depth Estimation and Control in Endoscopic Monocular Environment through SLAM**  
Jinwoo Park (Korea University)  
Daehie Hong (Korea University)  
Chanwoo Kim (Korea University)  
Seonghyeon Won (Korea University)  
Woocheol Shin (Korea University)  
Jihun Kim (Korea University)  
MyungIn Jin (Korea University)  
Yongjung Lee (Korea University)
- PP4-017 A108 Configuration of the Device and Environment for Automatic Forest Product Selection**  
Soeun Son (Korea Institute of Robotics & Technology Convergence)  
Hyun-Joon Chung (Korea Institute of Robotics & Technology Convergence)  
Junyoung Kim (Korea Institute of Robotics & Technology Convergence)  
Jungjun Kim (Korea Institute of Robotics & Technology Convergence)  
Seungwoo Kim (Korea Institute of Robotics & Technology Convergence)  
Sungchul Jee (Korea Institute of Robotics & Technology Convergence)
- PP4-018 A110 Shape Memory Alloy Actuator based on Knot Structure**  
Eunsol Park (Dongguk University)  
Min-Woo Han (Dongguk University)  
Juhee Lee (Dongguk University)

- PP4-019** A114 **A Study on the Design of Mobile Robots for All-way Movement and Structural Improvement of Steering & Driving Modules**  
Soeun Son (Korea Institute of Robotics & Technology Convergence)  
Gun Rae Cho (Korea Institute of Robotics & Technology Convergence)  
Sungho Park (Korea Institute of Robotics & Technology Convergence)  
Yong Choi (Korea Institute of Robotics & Technology Convergence)  
Eui-Jung Jung (Korea Institute of Robotics & Technology Convergence)  
Hyunseock Shin (Korea Institute of Robotics & Technology Convergence)
- PP4-020** A115 **Self-growing Robot Overtube with Pulling Motion for Loop Elimination in Colonoscopy**  
MyungIn Jin (Korea University)  
Daehie Hong (Korea University)  
Chanwoo Kim (Korea University)  
Seonghyeon Won (Korea University)  
Woocheol Shin (Korea University)  
Jinwoo Park (Korea University)  
Yongjung Lee (Korea University)  
Jihun Kim (Korea University)
- PP4-021** A118 **ERCP Surgical Robot Teleoperation Controller Mimicking Surgical Movement**  
Woocheol Shin (Korea University)  
Daehie Hong (Korea University)  
Chanwoo Kim (Korea University)  
Seonghyeon Won (Korea University)  
Jinwoo Park (Korea University)  
Jihun Kim (Korea University)  
Yongjung Lee (Korea University)  
MyungIn Jin (Korea University)
- PP4-022** A122 **Formation of Photo-reactive Heterostructure from a Multicomponent Amorphous Alloy with Atomically Random Distribution**  
Hae Jin Park (Sejong University)  
Ki Buem Kim (Sejong University)
- PP4-023** A129 **Utilizing Shape Memory Alloys Sheets for Bi-directional Auxetic Structures**  
Yeong Jae Park (Sungkyunkwan University)  
Hugo Rodrigue (Sungkyunkwan University)
- PP4-024** A130 **Evaluation of Rollable-based Layer Jamming Device with Variable Stiffness**  
Jae Hyuck Jang (Sungkyunkwan University)  
Hugo Rodrigue (Sungkyunkwan University)

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- PP4-025** A142 **Effect of Sintering Condition on Mechanical Properties of Hot-press Sintered Tungsten**  
Huiseong Hong (Hiroshima University)  
Gen Sasaki (Hiroshima University)
- PP4-026** A149 **Multi-scale Hybrid Reinforced Super Duplex Stainless Steel Matrix Composites with High Strength and Ductility via Laser Powder Bed Fusion and an In-situ Synthesis Strategy**  
Yongjian Fang (Sungkyunkwan University)  
Jonghwan Suhr (Sungkyunkwan University)  
Yali Zhang (Sungkyunkwan University)
- PP4-027** A150 **Synthesis of Crack-free WC10%-Ni60AA Cermet/Inconel 718 Composite Hardfacing by Laser Directed Energy Deposition**  
Shanshan He (Pusan National University)  
Sang-Hu Park (Pusan National University)  
Do-Sik Shim (Korea Maritime and Ocean University)
- PP4-028** A153 **Enhancing Durability and Improving Dielectric Properties in Dielectric Elastomer Actuator**  
Sumin Jung (Dongguk University)  
Min-Woo Han (Dongguk University)  
Minchae Kang (Dongguk University)
- PP4-029** A169 **Evaluation of Optical Performance of EO/IR System according to Adhesive Patterns between Its Mirror and Metallic Mount under Various Environmental Conditions for Aircraft Applications**  
Ji-Hun Bae (Agency for Defense Development)  
Kwang-Woo Park (Agency for Defense Development)
- PP4-030** A177 **Enhancement of Biocompatibility on Grade 5 Titanium (Ti-6Al-4V) for Medical Implantable Devices Using Large Pulsed Electron Beam (LPEB)**  
Yonghoon Lee (Kyungpook National University)  
Jisoo Kim (Kyungpook National University)
- PP4-031** A182 **A Study of the Deformation Behavior and Finite Element Analysis of the Copper Wire for Hairpins Forming Process**  
Ji Seob An (Korea Institute of Industrial Technology)  
Myeong Sik Jeong (Korea Institute of Industrial Technology)  
Min Ji Jo (Korea Institute of Industrial Technology)  
A Ra Jo (Korea Institute of Industrial Technology)  
Sun Kwang Hwang (Korea Institute of Industrial Technology)  
Ji Won Lee (GMB Korea Co., Ltd.)  
Young Hoon Moon (Pusan National University)

- PP4-032** A193 **Inverse Design for Acoustic Resonator via Dual Variational Autoencoder**  
Keon Ko (Pusan National University)  
Sang Min Park (Pusan National University)  
Min Woo Cho (Pusan National University)  
Kyung Jun Song (Pusan National University)
- PP4-033** A194 **Investigation of the Surface Texturing on the Tribological Properties of Mechanical Components**  
Hyukjae Ma (Yonsei University)  
Dae-Eun Kim (Yonsei University)
- PP4-034** A196 **Serpentine Structure with Local Reinforcement Strategy for Stretchable Thin Film Devices**  
Ho-Gyun Park (Dankook University)  
Ji-Hyeon Song (Dankook University)  
Seung-Ho Baek (Dankook University)  
Hyeongjin Jo (Dankook University)
- PP4-035** A197 **Preparation of Cu-Al Alloys with Excellent Metallurgical Bonding Properties Using Directed Energy Deposition**  
Changliang Yao (Korea Maritime and Ocean University)  
Do-Sik Shim (Korea Maritime and Ocean University)  
Kwangyong Shin (Korea Maritime and Ocean University)
- PP4-036** A200 **Explicit Analysis on Mechanical Strengthening Mechanisms of Metal Composite STS 316L with SiO<sub>2</sub> Particles**  
Hong-Seok Kim (Pusan National University)  
Sang-Hu Park (Pusan National University)
- PP4-037** A228 **Optimized Machine Learning Model for Kirigami Patterns for Stretchable Sensor**  
Min-Jae Jo (Dankook University)  
Ji-Hyeon Song (Dankook University)  
Yujun Song (Dankook University)
- PP4-038** A229 **Fabrication and Application of Multi-functional Radiative Cooling Materials**  
Jonghun Yi (Hanyang University)  
Dong Rip Kim (Hanyang University)
- PP4-039** A231 **Response Surface Methodology Analysis of Deformation of Injection Molded Products with Different Thickness Ratio**  
Jiwon Park (Chonnam National University)  
Bong-Kee Lee (Chonnam National University)

## Poster Presentation I

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- PP4-040** A238 **Overcomming Bias-vatiance Tradeoff in Designing Mechanical Metamaterials**  
Namjung Kim (Gachon University)  
Dongseok Lee (KAIST)  
Chanyoung Kim (KAIST)  
Dosung Lee (Gachon University)  
Youngjoon Hong (KAIST)
- PP4-041** A265 **3D Printed Bidirectional Telescopic Actuator: Design and Manufacturing**  
Sewoong Chung (Sungkyunkwan University)  
Hugo Rodrigue (Sungkyunkwan University)
- PP4-042** A283 **A Study of Temperature and Thickness Effect on Tensile Behavior of PET FELT Material**  
Euichul Jeong (Korea Institute of Industrial Technology)  
Sunghee Lee (Korea Institute of Industrial Technology)  
Yongdae Kim (Korea Institute of Industrial Technology)  
Jeongwon Lee (Korea Institute of Industrial Technology)  
Jenehee Lee (Korea Institute of Industrial Technology)
- PP4-043** A293 **Computational Prediction of Electrical Properties in EV Wiring Harness Terminals: A Comparison between Copper and Aluminum Materials**  
Sunmi Shin (Korea Institute of Industrial Technology)  
Ho Sung Jang (Korea Institute of Industrial Technology)  
Seckjin Yun (Korea Institute of Industrial Technology)  
Dongshin Lee (DNDE Inc.)  
Jongdeok Lee (DNDE Inc.)  
Haeun Choi (UHB)  
Youngcheol Lee (UHB)  
Jin-Young Park (Korea Institute of Industrial Technology)
- PP4-044** A313 **Prediction of Mechanical Properties and Material Design Optimization for Al-Mg-Si Alloy Extrusions Using Machine Learning**  
Yoshikazu Hayashi (Hiroshima University)  
Kenjiro Sugio (Hiroshima University)  
Gen Sasaki (Hiroshima University)  
Masahiko Shioi (SankyoTateyama, Inc.)  
Masato Okuno (SankyoTateyama, Inc.)
- PP4-045** A329 **Analysis of Flow Characteristics according to Moisture Reduction of Moisture-containing Particles in a Horizontal Mixing Dryer**  
Minkyung Sim (Tech University of Korea)  
Kwang Kim (Tech University of Korea)

- PP4-046** A356 **A Study on Structural Safety Evaluation of Ro-Ro Ship Car Deck Using Multi-body Dynamics and Structural Analysis**  
Sung Wook Kang (Changwon National University)  
Hyun Soo Kim (Pusan National University)  
Min Goo Cho (Pusan National University)  
Jun Su Park (Changwon National University)  
Jang Ik Park (Dae Lyun Engineering)  
Byung Moon Kwak (HEXAGON Co., Ltd.)  
Ki Seok Choi (HEXAGON Co., Ltd.)
- PP4-047** A357 **Variation of Tensile and Fatigue Properties of Rolled Mg-3Al Alloy with Ca Addition**  
Hyun Ji Kim (Kyungpook National University)  
Sung Hyuk Park (Kyungpook National University)  
Chae Hyeon Lee (Kyungpook National University)  
Jiehua Li (Leoben University)
- PP4-048** A389 **Conductive Yarn-based Knitted Strain Sensor for Wearable Applications**  
Ju-Hee Lee (Dongguk University)  
Min-Woo Han (Dongguk University)  
Jihun Seong (Dongguk University)
- PP4-049** A393 **Enhancement of Noise and Vibration Characteristics in a 5 HP Industrial Gear Reducer**  
Jinuk Baek (Gyeongsang National University)  
Sungki Lyu (Gyeongsang National University)  
Namyong Kim (Gyeongsang National University)
- PP4-050** A326 **Synthesis of Wood-based Activated Carbon with Bioactivator and Microwave Heating**  
Denni Kurniawan (Universiti Teknologi Brunei)  
Nur Athilah 'Iffi A. Jinnidi (Universiti Teknologi Brunei)  
Fethma M. Nor (Curtin University)



## Poster Presentation II

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**Tuesday, 9 July, 16:30-17:30**

(Grand Ballroom 4)

### 1. Manufacturing Processes

- PP1-001** A006 **Optimization of Cortical Bone Robot Drilling Cooling and Processing Conditions**  
DongMin Kim (Korea Institute of Industrial Technology)  
JuHyung Ha (Korea Institute of Industrial Technology)  
Joonhyeok Choe (Kyungpook National University)  
DoYoung Kim (Chungnam National University)
- PP1-002** A019 **Additive Manufacturing of Radio Frequency Cavity for Particle Accelerators**  
In Yong Moon (Korea Institute of Industrial Technology)  
Seung Jun Han (Korea Institute of Industrial Technology)  
Min Ji Ham (Korea Institute of Industrial Technology)  
Won Rae Kim (Korea Institute of Industrial Technology)
- PP1-003** A024 **Deep Learning-based Optimization for Minimizing Delamination in Unidirectional CFRP Drilling Processes**  
Eddy Kurniawan (Pusan National University)  
Ji Hoon Kim (Pusan National University)  
Yong Chan Hur (Pusan National University)
- PP1-004** A031 **Development of Array-type Polishing Tool Using Hydrostatic Pressure for Polishing Aspherical Surfaces**  
Yasuhiro Tsuchiya (Chiba Institute of Technology)  
Hideo Takino (Chiba Institute of Technology)  
Keita Takatsuka (Chiba Institute of Technology)  
Takahito Igawa (Chiba Institute of Technology)
- PP1-005** A032 **Mold Repair Technology Research Using Wire Arc Additive Manufacturing Technology**  
Myoung Pyo Hong (Korea Institute of Industrial Technology)
- PP1-006** A037 **Stock Removal Polishing of Silicon Carbide Wafer by a Femtosecond Laser Pulses**  
YoungKuk Kim (Korea Institute of Industrial Technology)  
JiHoon Jeong (Korea Institute of Industrial Technology)  
Shin Kim (Korea Institute of Industrial Technology)  
InSik Lee (Korea Institute of Industrial Technology)  
YuSung Kim (Korea Institute of Industrial Technology)  
DaeWook Kim (Korea Institute of Industrial Technology)  
ByungChul Cha (Korea Institute of Industrial Technology)

## Poster Presentation II

- PP1-007** A043 **Investigation of Thermal Mechanical Characteristics on External Load of Pore Defect Part Using a DED Process**  
Dong Il Jung (Chosun University)  
Dong-Gyu Ahn (Chosun University)  
Kwang Kyu Lee (Chosun University)
- PP1-008** A054 **Study on Shape Changes due to Ultra-precision Processing of Thin Plates**  
Hwan Ho Maeng (Chungnam National University)  
Geon Hee Kim (Hanbat National University)  
Jin Yong Heo (Hanbat National University)  
Jong Gyun Kang (Chungnam National University)  
Joong Kyu Ham (Chungnam National University)  
Seong Hyeon Park (Chungnam National University)
- PP1-009** A069 **Automatic Tool Paths Generation for Assembly Process Simulation and Code Generation Utilizing the STEP Standard and Genetic Algorithm**  
Byeongguk Kim (Korea Institute of Industrial Technology)  
Hoonhee Lee (Korea Institute of Industrial Technology)  
Minseok Park (Korea Institute of Industrial Technology)  
Seonghoon Ha (Korea Institute of Industrial Technology)
- PP1-010** A081 **Analysis of Time Variation of the Experimentally Obtained Current Waveforms to Identify the Equivalent Circuit Parameters in ECM**  
Qingrong Zhang (Tokyo University of Agriculture and Technology)  
Wataru Natsu (Tokyo University of Agriculture and Technology)  
Hongping Luo (Guangdong University of Technology)
- PP1-011** A083 **Relationship between Inter-electrode Environment and Exhaustion Behavior of Byproducts in Electrical Discharge Drilling of Micro Deep-hole**  
Ye Chen (Tokyo University of Agriculture and Technology)  
Wataru Natsu (Tokyo University of Agriculture and Technology)  
Zuyuan Yu (Dalian University of Technology)
- PP1-012** A085 **A Study of the Deposition Efficiency in DED Additive Manufacturing Processes**  
Ming-Chyuan Lu (National Chung Hsing University)  
Yan-You Lin (National Chung Hsing University)  
Yu-Xuan Lin (National Chung Hsing University)  
Shih-Ming Wang (National Chung Hsing University)  
Yao-Yang Tsai (National Taiwan University)
- PP1-013** A109 **Heat Accumulation Effect in Laser Ablation Using Sub-picosecond Pulses**  
Jihoon Jeong (Korea Institute of Industrial Technology)  
Youngkuk Kim (Korea Institute of Industrial Technology)

## Poster Presentation II

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- PP1-014** A112 **Investigation of the Thermal Characteristics by Length and Height of Thin-wall Structure Fabricated by the DED Process Using Finite Element Analysis**  
Kwangkyu Lee (Chosun University)  
Dong-Gyu Ahn (Chosun University)
- PP1-015** A117 **Design of Morphology Changed TPMS Heat Exchanger based on Mathematical Filtering Method**  
Seo-hyeon Oh (Seoul National University of Science and Technology)  
Keun Park (Seoul National University of Science and Technology)  
Do Ryun Kim (Seoul National University of Science and Technology)  
Jeong Eun Kim (Seoul National University of Science and Technology)
- PP1-016** A119 **A Study on the Hardness Variation of Al6063 Manufactured by DED Process through UNSM**  
Daeun Choi (Korea Institute of Industrial Technology)  
Kwangyong Shin (Korea Institute of Industrial Technology)  
Kiyong Lee (Korea Institute of Industrial Technology)  
Gyengyun Baek (Gwangju University)
- PP1-017** A121 **Investigation of Mechanical and Thermal Properties of DLP-printed PUMA/SiO<sub>2</sub> Ceramic Composites**  
Jiwan Kang (Seoul National University of Science and Technology)  
Keun Park (Seoul National University of Science and Technology)  
Seong Hyeon Park (Carima Co., Ltd.)
- PP1-018** A126 **Tribological Characteristics of Ferrous Alloy Manufactured by DED Process with Respect to Fabrication Parameters**  
Dae-Jin Kim (Kyungpook National University)  
Hyun-Joon Kim (Kyungpook National University)  
Segon Heo (Korea Institute of Machinery and Materials)  
Min-Kyo Jung (Korea Institute of Machinery and Materials)
- PP1-019** A132 **Deformation Prediction Based FEM Analysis in Cutting Process of Rib Structure with Thin Wall**  
Mi-Ru Kim (Korea Institute of Industrial Technology)  
Hoon-Hee Lee (Korea Institute of Industrial Technology)  
Min-Suk Park (Korea Institute of Industrial Technology)

- PP1-020 A144 Laser-induced Surface Geometry Control Process for Functional Surface with Tunable Wettability**  
Sung Jin Park (Kookmin University)  
Bong Chul Kang (Kookmin University)  
Sun Young Kim (Kookmin University)  
Kyu Hyeon Kim (Kookmin University)  
Hui Ae Park (Kookmin University)  
Je Seong Lee (Kookmin University)
- PP1-021 A147 Preliminary Research on Temperature Measurement of Die Casting Mold Using FBG Sensor Embedded via Additive Manufacturing**  
Jihoon Jang (Gwangju University)  
Gyeong-Yun Baek (Gwangju University)  
Hyeong Seong Kim (Gwangju University)
- PP1-022 A163 Multi-material Additive Manufacturing Process of Piezoresistive Sensor Embedded Soft-actuator**  
In Hwan Lee (Chungbuk National University)  
Kwang Yeol Yu (Chungbuk National University)  
Ho Chan Kim (Andong National University)
- PP1-023 A174 Numerical Analysis of Clamping Force and Deformation of Tie Bars in Die Casting Machine**  
Do Hyeon Lee (Korea Institute of Industrial Technology)  
Jeonghong Ha (Korea Institute of Industrial Technology)
- PP1-024 A175 Femtosecond Laser Micromachining of Silicon Carbide for Cross-sectional Specimen**  
Ah Hyun Shin (Korea Institute of Industrial Technology)  
Jeonghong Ha (Korea Institute of Industrial Technology)
- PP1-025 A176 Fabrication of Micropillars Using Femtosecond Laser Micromachining**  
Youn Jae Shin (Korea Institute of Industrial Technology)  
Jeonghong Ha (Korea Institute of Industrial Technology)
- PP1-026 A416 Tool Path Generation Algorithm of Robot Manipulator considering Posture-dependent Constraints Variation**  
Joon-Soo Lee (Yonsei University)  
Byung-Kwon Min (Yonsei University)  
Jong-Min Lim (Yonsei University)  
Sangwon Kang (Yonsei University)  
Jae Ho Lee (ROBOTIS)

## Poster Presentation II

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- PP1-027** A417 **Modeling of Burr Formation in Drilling of 3D-printed Carbon Fiber Reinforced Polymer with Pilot Holes**  
Jae Hoon Ahn (Yonsei University)  
Byung-Kwon Min (Yonsei University)

### 6. Bio & Health

- PP6-001** A025 **Fabrication of Biodegradable Spear Microneedles Containing mRNA**  
Seung-Jun Lee (Seowon University)  
Jeong-Gun Lee (S-Skin Co., Ltd.)
- PP6-002** A026 **Study on the Fabrication and Characterization of L-theanine-loaded Dissolving Microneedles for Transdermal Drug Delivery**  
Seoyoung Lee (University of Utah Asia Campus)  
Seung-Jun Lee (Seowon University)
- PP6-003** A057 **Analysis of Whole-body Angular Momentum in the Elderly during the Timed-up and Go Test (TUG)**  
Jeong-Bae Ko (Korea Institute of Industrial Technology)  
Jae-Soo Hong (Korea Institute of Industrial Technology)  
Young-Hwee Lee (Korea Institute of Industrial Technology)  
Dong-Gi Lee (Korea Institute of Industrial Technology)
- PP6-004** A062 **Surface Modification of Orthopaedic Implants Using Newly Synthesized Bone-like Apatite Grown Protein-coated Titanium Dioxide Nanoparticles**  
Il Won Suh (Jeonbuk National University)  
Cheol Sang Kim (Jeonbuk National University)  
Se Rim Jang (Jeonbuk National University)  
Sun Hee Cho (Jeonbuk National University)
- PP6-005** A066 **Development of an Injection-molded Lab-on-a-disc for Separation of Circulating Tumor Cell and Cell-free DNA from Whole Blood**  
Chul Jin Hwang (Korea Institute of Industrial Technology)  
Jeong-Won Lee (Korea Institute of Industrial Technology)  
Taek Yong Hwang (Korea Institute of Industrial Technology)  
Seokkwan Hong (Korea Institute of Industrial Technology)  
Sung-Hun Lee (Clinomics Inc.)

- PP6-006** A067 **Development of an Injection-molded Liquid Biopsy Cartridge for Monitoring EGFR Gene Mutations in Lung Cancer**  
Taek Yong Hwang (Korea Institute of Industrial Technology)  
Chul Jin Hwang (Korea Institute of Industrial Technology)  
Jeong-Won Lee (Korea Institute of Industrial Technology)  
Jeongjin Kang (Korea Institute of Industrial Technology)  
Sung-Hun Lee (Clinomics Inc.)
- PP6-007** A090 **Continuous Gait Phase Estimation Using LSTM-based Domain-adaptation When Wearing an Exoskeleton**  
Ji Su Park (Korea Institute of Science and Technology)  
Choong Hyun Kim (Korea Institute of Science and Technology)  
Junho Choi (Korea Institute of Science and Technology)
- PP6-008** A093 **Stitched Textile Sensors for Tactile and Strain Detection**  
Jihun Seong (Dongguk University)  
Min-Woo Han (Dongguk University)  
Ju-Hee Lee (Dongguk University)
- PP6-009** A100 **Development of an AI-based Customized Exercise Range Setting System**  
Hyun Jong Lee (National Rehabilitation Center)  
Jung Hwan Kim (National Rehabilitation Center)  
Jea Hak Kim (National Rehabilitation Center)  
Jun Pil Shin (National Rehabilitation Center)
- PP6-010** A123 **Fabrication of Spiderweb-mimetic Fibrous Scaffold with Controlled Topography and Mechanical Properties via a Modified Electrospinning Method**  
Sunhee Cho (Jeonbuk National University)  
Se Rim Jang (Jeonbuk National University)  
Cheol Sang Kim (Jeonbuk National University)  
Il Won Suh (Jeonbuk National University)
- PP6-011** A127 **Development of an Integrated System for Gait Analysis and Data Collection**  
Kyeong-Jun Seo (National Rehabilitation Center)  
Jung Hwan Kim (National Rehabilitation Center)  
JunHyeok Ham (Gendata Inc.)  
Ji-Eun Cho (National Rehabilitation Center)

## Poster Presentation II

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- PP6-012** A135 **Taste Bud-inspired Single Drop Multi-taste Sensing for Comprehensive Flavor Analysis with Deep Learning Algorithms**  
Junwoo Yea (Daegu Gyeongbuk Institute of Science and Technology)  
Kyung-In Jang (Daegu Gyeongbuk Institute of Science and Technology)  
Han Hee Jung (Hannam University)  
Hyunjong Lee (Daegu Gyeongbuk Institute of Science and Technology)  
Jeongho Kwak (Daegu Gyeongbuk Institute of Science and Technology)  
Jihwan P. Choi (KAIST)
- PP6-013** A136 **Semantic Segmentation of Fractured Clavicle in CT Images**  
Seungjin Kong (Korea Institute of Industrial Technology)  
Donghyun Kim (Korea Institute of Industrial Technology)  
Tleuliyev Azat (Korea Institute of Industrial Technology)
- PP6-014** A164 **Fabrication of Porous Microneedle Array with Adjustable ISF Extraction Ability Using Microfluidic Technology**  
Boyu Qin (The University of Tokyo)  
Beomjoon Kim (The University of Tokyo)  
Jongho Park (The University of Tokyo)
- PP6-015** A165 **Flexible Neural Probes with Bioresorbable Shuttle for Studying Natural Behaviors of Non-human Primates**  
Janghwan Jekal (Daegu Gyeongbuk Institute of Science and Technology)  
Kyung-In Jang (Daegu Gyeongbuk Institute of Science and Technology)  
Saehyuck Oh (Daegu Gyeongbuk Institute of Science and Technology)
- PP6-016** A166 **Wireless, Battery-free, Fully Implantable Neural Recorder for Non-human Primates**  
Saehyuck Oh (Daegu Gyeongbuk Institute of Science and Technology)  
Kyung-In Jang (Daegu Gyeongbuk Institute of Science and Technology)  
Janghwan Jekal (Daegu Gyeongbuk Institute of Science and Technology)
- PP6-017** A168 **Poly (ethylene glycol) Dimethacrylate (PEGDMA) Multi-functional Pillar-patterned Surface for Osteogenic Differentiation of Pre-osteoblast and Anti-bacterial Effects to Escherichia Coli and Staphylococcus Aureus**  
Nae-un Kang (Wonkwang University)  
Young-Sam Cho (Wonkwang University)  
Ga Hyun Kim (Daejeon St, Mary's Hospital)  
Hee-kyeong Kim (Wonkwang University)  
Young Yul Kim (Daejeon St, Mary's Hospital)  
Hyun-Ha Park (Wonkwang University)

## Poster Presentation II

- PP6-018** A181 **Platelet-rich Plasma (PRP)-derived Bioink for Accelerated and Uniform Vascularization of Adipose Tissue Grafts in Vivo**  
Hanan Jamal Mohamed (UNIST)  
Hyun-Wook Kang (UNIST)  
Wonwoo Jeong (Wake Forest Institute for Regenerative Medicine)
- PP6-019** A199 **Simulating Standing Lumbar Spine Conditions in Supine MRI with Axial-loading Device and Lumbar Support**  
Hyunjoon Hwang (Korea University)  
Yongnam Song (Korea University)  
Younghoon Yoo (Korea University)  
Sebin Kim (Korea University)
- PP6-020** A233 **Support-less 3D Bioceramic Technology for High-performance Bone Regeneration and Complex Scaffold Fabrication**  
Yeong-Jin Choi (Korea Institute of Materials Science)
- PP6-021** A242 **Comprehensive Analysis of ISF Sampling Capability via 3D-printed Lattice Microneedles**  
Yeongjun Song (Sungkyunkwan University)  
Brian J. Lee (Sungkyunkwan University)
- PP6-022** A264 **Fabrication of Polyglycolic Acid Porous Microneedles Array Patch Using Nonsolvent-induced Phase Separation Method**  
Heyi Jing (The University of Tokyo)  
Beomjoon Kim (The University of Tokyo)  
Jongho Park (The University of Tokyo)
- PP6-023** A280 **Enhanced Dopamine Detection in Neurological Disorders Using a Double-sided Flexible Neural Probe**  
Jeongdae Ha (Daegu Gyeongbuk Institute of Science and Technology)  
Kyung-In Jang (Daegu Gyeongbuk Institute of Science and Technology)  
Han Hee Jung (Hannam University)
- PP6-024** A281 **Development of an Amperometric Sensor for Acetylcholine Detection**  
Jieun Son (Daegu Gyeongbuk Institute of Science and Technology)  
Kyung-In Jang (Daegu Gyeongbuk Institute of Science and Technology)



## Poster Presentation II

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- PP6-025** A288 **Research on Microdevices to Stretch Alveolar Cells with High-frequency**  
Taiki Otomo (Tokyo Institute of Technology)  
Joon-wan Kim (Tokyo Institute of Technology)  
Tatsuya Matsubara (Johns Hopkins University School of Medicine)  
Deok-Ho Kim (Johns Hopkins University School of Medicine)  
Masashi Ikeuchi (Tokyo Medical and Dental University)  
Kazuhiro Yoshida (Tokyo Institute of Technology)
- PP6-026** A296 **Development of a Bed-attached Rehabilitation Device Integrated with Cycle and Stepper for Elderly Individuals**  
Seunghyun Ko (Osong Medical Innovation Foundation)  
Kangmoo Lee (Osong Medical Innovation Foundation)  
Minchul Song (Osong Medical Innovation Foundation)  
Sunchoel Yang (Osong Medical Innovation Foundation)  
Changho Lee (Osong Medical Innovation Foundation)
- PP6-027** A308 **Assessment of Military Helmet Ballistic Performance Using Ballistic Load Sensing Headform for Head Injury Evaluation**  
Yi-Chiuan Hsieh (National Defense University)  
Yu-Liang Chen (National Defense University)
- PP6-028** A336 **Exploring Micropillar Geometry in Microfluidic Devices for Enhanced Particle Manipulation**  
Yun Peng Yeh (National Taiwan University of Science and Technology)  
Martin Kwek (National Taiwan University of Science and Technology)
- PP6-029** A359 **Pilot Study on Analyzing Mental Stress in Workers due to Changes in Workplace Temperature and Humidity**  
Young Hwee Lee (Korea Institute of Industrial Technology)  
Jae Soo Hong (Korea Institute of Industrial Technology)  
Jeong Bae Ko (Korea Institute of Industrial Technology)  
Dong Gi Lee (Korea Institute of Industrial Technology)  
Byungsoo Kang (Korea Institute of Industrial Technology)
- PP6-030** A391 **Investigating the Mechanisms of Electrical Stimulation Therapy for Stroke Using ex Vivo Stroke Models**  
Eunmin Ko (KAIST)  
Jennifer H. Shin (KAIST)  
Jegal Uk (KAIST)

**PP6-031 A392 Cellular Response of Neurons to Electrical Stimulation by TENG**

Jennifer H. Shin (KAIST)  
 Uk Jegal (KAIST)  
 Bhatia Divij (KAIST)  
 Eunmin Ko (KAIST)  
 Hyungsoon Park (KAIST)

**7. New and Renewable Energy****PP7-001 A023 A Study on the Correlation Analysis between Railway Environmental Factors and Energy Saving**

Hanmin Lee (Korea Railroad Research Institute)  
 Jaewon Kim (Korea Railroad Research Institute)  
 Hwanhee Cho (Korea Railroad Research Institute)  
 Hosung Jung (Korea Railroad Research Institute)

**PP7-002 A068 Structural and Chemical Optimization of Nanofiber-based Air Electrodes for Reversible Solid Oxide Cells**

Seungwoo Han (Sungkyunkwan University)  
 Wonyoung Lee (Sungkyunkwan University)  
 Hyun Sik Yoo (Sungkyunkwan University)

**PP7-003 A071 A Comprehensive Study on Bearing Failure and Replacement in Wind Turbines for Improved Efficiency**

Jui-Hung Liu (National Chin-Yi University of Technology)  
 Chun-Chieh Wang (Industrial Technology Research Institute)  
 Jien-Chen Chen (Industrial Technology Research Institute)

**PP7-004 A074 Design Improvement of Wind Turbine Hub Pin Lock Structure**

Jui-Hung Liu (National Chin-Yi University of Technology)  
 Rong-Mao Lee (National Chin-Yi University of Technology)  
 Chun-Chieh Wang (Industrial Technology Research Institute)  
 Jien-Chen Chen (Industrial Technology Research Institute)  
 Wen-Jeng Lai (National Atomic Research Institute)

**PP7-005 A077 Failure Analysis in Existing SCADA Data Using Neural Network Time-series: Nonlinear Autoregressive Network with Exogenous Inputs (NARX)**

Jui-Hung Liu (National Chin-Yi University of Technology)  
 Chun-Chieh Wang (Industrial Technology Research Institute)  
 Nelson T. Corbita Jr (University of Science and Technology of Southern Philippines)

## Poster Presentation II

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- PP7-006** A091 **Combinatorial Deposition of Pinhole-free and High-performance, Nanothin Electrolyte for Hydrogen-fueled, Low-temperature Solid Oxide Fuel Cells Supported on a Nanoporous Substrate**  
Sanghoon Ji (Korea Institute of Civil Engineering and Building Technology)  
Gu Young Cho (Dankook University)  
Han Gil Seo (Dankook University)  
Nari Park (Korea Institute of Civil Engineering and Building Technology)  
Miseon Kim (Korea Institute of Civil Engineering and Building Technology)  
Weonjae Kim (Korea Institute of Civil Engineering and Building Technology)  
Suk Won Cha (Seoul National University)
- PP7-007** A151 **Development of Triboelectric Tire-based AIoT System for Robust Self-powered Recognition of Vehicular/Robotic Mobility**  
Baek Gyu Kim (Pusan National University)  
Sang Min Park (Pusan National University)  
Jin Yeong Song (Pusan National University)  
Min Woo Cho (Pusan National University)  
Ji Gyo Park (Pusan National University)  
Dongwhi Choi (Kyung Hee University)  
Chengkuo Lee (National University of Singapore)
- PP7-008** A157 **A Theoretical Study on the Effect of Channel Rib-to-channel Width Ratio of a CNT Composite Bipolar Plate on the Performance of PEMFC**  
Dawit Musse Yasin (Kongju National University)  
Dongkyoung Lee (Kongju National University)  
Seungeun Baek (Kongju National University)  
Chanhee Jeong (Kongju National University)
- PP7-009** A190 **Evaluation of Electrochemical Performances of NaCl Contaminated PEMFCs with Decontamination Devices**  
Ye Rim Kwon (Dankook University)  
Gu Young Cho (Dankook University)  
Ho Jun Yoo (Dankook University)  
Byung Gyu Kang (Dankook University)  
Ki Won Hong (Dankook University)  
Sun Ki Kwon (Dankook University)
- PP7-010** A209 **Numerical Study on the Effect of the Patterned Gas Diffusion Layers in Proton Exchange Membrane Fuel Cell**  
Dong Kun Song (Dankook University)  
Gu Young Cho (Dankook University)  
Jung Soo Kim (Dankook University)  
Seung Heon Lee (Dankook University)  
Gyeong Won Min (Dankook University)  
Do Young Jung (Dankook University)

- PP7-011** A213 **Achieving Surface Nanostructured Carbon Felt Electrodes via Etching and Pyrolysis Reactions to Enhance Vanadium Redox Flow Battery Performance**  
Wei-Lun Lee (National Pingtung University)  
Wen-Jen Lee (National Pingtung University)  
Tien Dung Cao (National Pingtung University)  
Chi-Chang Chen (Industrial Technology Research Institute)
- PP7-012** A297 **Facile and Mass-producible Fabrication of Tubular 3D Helix-shaped Enzymatic Biofuel Cell Using Shape Memory Polymer**  
Haroon Khan (Kyungpook National University)  
Gyu Man Kim (Kyungpook National University)  
Dokyung Kyeong (Kyungpook National University)  
Dang Dinh Nguyen (Kyungpook National University)
- PP7-013** A320 **Forecasting Solar Energy Production in the United States Using Time Series Analysis**  
Rajni (O. P. Jindal Global University)
- PP7-014** A338 **An Ultrasensitive Laser-induced Graphene Electrode-based Triboelectric Sensor Utilizing Trapped Air as Effective Dielectric Layer**  
Tapas Kamilya (Korea University of Technology and Education)  
Jinhyoung Park (Korea University of Technology and Education)
- PP7-015** A340 **Niobium Doped Titanium Dioxide Thin Film Fabricated via Ultrasonic Spray System for Enhanced Corrosion Resistance**  
Davin Jeong (Chonnam National University)  
Soonwook Hong (Chonnam National University)  
Yongchan Park (Chonnam National University)  
Hyeontaek Kim (Chonnam National University)
- PP7-016** A343 **Fabrication of Ceria-coated Nickel Catalyst via Atomic Layer Deposition and Measurement of Catalytic Activity Using Rotating Disk Electrode**  
Hyeontaek Kim (Chonnam National University)  
Soonwook Hong (Chonnam National University)  
Yongchan Park (Chonnam National University)  
Davin Jeong (Chonnam National University)
- PP7-017** A344 **Fabrication of Scandia-stabilized Zirconia Cathode Functional Layer for Low-temperature Solid Oxide Fuel Cell via DC Reactive Sputtering**  
Sanghyeok Lee (Chonnam National University)  
Soonwook Hong (Chonnam National University)  
Yongchan Park (Chonnam National University)  
Hyeontaek Kim (Chonnam National University)  
Davin Jeong (Chonnam National University)

## Poster Presentation II

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- PP7-018** A349 **Smart Sensor Using Modular Triboelectric Nanogenerator based on Porous Structure**  
Jaehee Shin (Korea University of Technology and Education)  
Jinhyoung Park (Korea University of Technology and Education)  
Doohyun Han (Korea University of Technology and Education)  
Hyunui Hong (Korea University of Technology and Education)
- PP7-019** A350 **Fluid-dynamical Effects of Stiffened Rib Channels on Enhancing PEMFC Performance with Experimental Validation**  
Choeun Kim (University of Seoul)  
Youngseung Na (University of Seoul)

## 8. Sustainable Technology

- PP8-001** A012 **Evaluation of Deicer Impact on Growth of Plants with Chemical Types**  
Chan-Young Lee (Korea Expressway Corporation Research Institute)
- PP8-002** A070 **Analysis of Tire-pavement Noise Characteristics of the Transverse Tining Concrete according to the Route**  
WoongYong Lee (Korea Expressway Corporation Research Institute)
- PP8-003** A120 **Development of an Impact Prediction Program to Assess the Impact of Air Pollutants Generated on Roads on the Surrounding Environment**  
Hyejin Kang (Korea Expressway Corporation Research Institute)
- PP8-004** A348 **Efficient Implementation of Security Devices Utilizing Triboelectric Nanogenerator**  
DooHyun Han (Korea University of Technology and Education)  
Jinhyoung Park (Korea University of Technology and Education)  
Jaehee Shin (Korea University of Technology and Education)  
Hyunui Hong (Korea University of Technology and Education)

**Special Session - 1. Railway Engineering**

- SP1-001** A011 **Development of Electric Wheelchair Impact Test for PSD**  
 Sungho Yun (Korea Railroad Research Institute)  
 Joo-Hyun Rho (Korea Railroad Research Institute)  
 Jae-Chul Kim (Korea Railroad Research Institute)  
 Jai-Kyun Mok (Korea Railroad Research Institute)
- SP1-002** A140 **Research on Prior Art of Railway Vehicles Derailment Detectors and Patent Avoidance Strategies**  
 Young-Sam Ham (Korea Railroad Research Institute)  
 Woo-Jin Chung (KangIn IP & Law)
- SP1-003** A158 **Fatigue Strength Evaluation and Finite Element Analysis of Repair Welding of Welded Structures for Railway Vehicles**  
 Jung-Won Seo (Korea Railroad Research Institute)  
 Seok-Jin Kwon (Korea Railroad Research Institute)  
 Young-Sam Ham (Korea Railroad Research Institute)
- SP1-004** A159 **Evaluation of Defects for Railway Wheel Using Automated UT Inspection System**  
 Seok Jin Kwon (Korea Railroad Research Institute)  
 Min Soo Kim (Korea Railroad Research Institute)  
 Jung Won Seo (Korea Railroad Research Institute)  
 Yong Sam Ham (Korea Railroad Research Institute)
- SP1-005** A211 **A Study on Process and Test Methods for Validation of Digital Automatic Couplers**  
 Jaewon Lee (Korea Testing Laboratory)  
 Ji Won Jin (Korea Testing Laboratory)  
 Hae Young Ji (Korea Testing Laboratory)  
 No Geon Jung (Korea Testing Laboratory)
- SP1-006** A218 **Development of Axlebox Bearing Temperature Monitoring Technology for Railway Vehicles based on Infrared Thermography**  
 Jeongguk Kim (Korea Railroad Research Institute)

## Poster Presentation II

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- SP1-007** A287 **A Study on Structural Safety Evaluation of Lower Articulation for Low-floor Trams through Structural Analysis and Testing**  
Jeong Hwan Choi (Korea Testing Laboratory)  
Hae Young Ji (Korea Testing Laboratory)  
Ji Won Jin (Korea Testing Laboratory)  
Hyung Wook Lee (Korea Testing Laboratory)  
Won Joo Hwang (The JST)
- SP1-008** A312 **Temperature Measurement of Railway Vehicle Brake Discs Using a Thermal Imaging Camera and Thermal Stress Analysis Using Finite Element**  
Byeong Choon Goo (Korea Railroad Research Institute)  
Seok Jin Kwon (Korea Railroad Research Institute)
- SP1-009** A315 **Feasibility Study for an Ammonia-fed Solid Oxide Fuel Cell-internal Combustion Engine Hybrid System for Railway Applications**  
Jaeheon Choe (Korea Railroad Research Institute)  
Minki Cho (Korea Railroad Research Institute)  
Suyong Choi (Korea Railroad Research Institute)  
Minkyong Park (Ewha Womans University)  
Wonjae Choi (Ewha Womans University)
- SP1-010** A374 **Transfer Function Characteristics Analysis of Dampers for High-speed Vehicle during Test Run**  
Sang Soo Kim (Korea Railroad Research Institute)

## Special Session - 3. Innovative Design and Integrated Manufacturing Session

- SP3-001** A056 **Enhancing Workplace Safety in SMEs Manufacturing Environment: The Role of Smart Sensor Technologies in Appropriate Smart Factories**  
Hyunmok Son (Seoul National University)  
Sung-Hoon Ahn (Seoul National University)  
Guyeop Jung (Seoul National University)  
Kyu-Wha Lee (Seoul National University)  
Won-Jae Yun (Seoul National University)  
Cheonghwa Lee (Seoul National University)  
Sunghoon Bae (Seoul National University)  
JaeHoon Kim (Seoul National University)  
Roque Sando Vilanculo (Seoul National University)  
Woo-Kyun Jung (Seoul National University)  
Hyungjung Kim (Konkuk University)

- SP3-002** A152 **Enhancing Temperature Sustainability through Delayed Heat Release Using Multi-phase Changing Materials**  
Wonjin Kim (Seoul National University)  
Sung-Hoon Ahn (Seoul National University)  
Jungwoo Park (Seoul National University)  
Suhwan Jeong (Seoul National University)  
Ying-Jun Quan (Seoul National University)
- SP3-003** A154 **Frequency-focused Sound Data Generator for Fault Diagnosis in Industrial Robots**  
Semin Ahn (Seoul National University)  
Sung-Hoon Ahn (Seoul National University)  
Jinoh Yoo (Seoul National University)  
Kyu-Wha Lee (Seoul National University)  
Byung Dong Youn (Seoul National University)
- SP3-004** A155 **Non-intrusive Load Monitoring (NILM) Edge Device with Unsupervised Learning for Multi-state Manufacturing Machine Monitoring**  
Guyeop Jung (Seoul National University)  
Sung-Hoon Ahn (Seoul National University)  
Howon Song (Seoul National University)
- SP3-005** A160 **A Nanoparticle Sensor Capable of Sensing Temperature and Strain with IoT-enabled Module**  
Midum Oh (Seoul National University)  
Sung-Hoon Ahn (Seoul National University)  
Jang Hyeon Lyu (Seoul National University)  
Guyeop Jung (Seoul National University)  
Hyeongwon Kim (Seoul National University)
- SP3-006** A198 **Ionic Polymer Metal Composite Driven One-layered Diaphragm Micropump for Biomedical Applications**  
Sofia Maria Castro Avalos (Seoul National University)  
Sung-Hoon Ahn (Seoul National University)
- SP3-007** A272 **Untethered Actuation of Ionic Polymers for Underwater Micro Robotics: Principles and Applications**  
Sangrul Kim (Seoul National University)  
Sung-Hoon Ahn (Seoul National University)  
Kausthubharam K (Purdue University)



## Poster Presentation II

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- SP3-008** A385 **Polygonal Wheel Mechanism of Mobile Manipulators for Stable Indoor Obstacle Navigation**  
Cheonghwa Lee (Seoul National University)  
Sung-Hoon Ahn (Seoul National University)  
Subin Yi (Seoul National University)  
Sangrul Kim (Seoul National University)  
Kisu Ok (Seoul National University)
- SP3-009** A386 **Interactive Digital Twin: Mitigating the Real-sim Gap Using Real-world Feedback Signals**  
Kisu Ok (Seoul National University)  
Sung-Hoon Ahn (Seoul National University)  
Cheonghwa Lee (Seoul National University)

Wednesday, 10 July, 16:40-17:40

(Grand Ballroom 4)

**1. Manufacturing Processes**

- PP1-028** A178 **FTS Abnormal Signal Monitoring based on Artificial Intelligence Model Using Transfer Learning**  
Kang Seok Kim (Pusan National University)  
Deugwoo Lee (Pusan National University)  
Jinuk Jang (Pusan National University)  
Seongjun Lee (JETEC, Co., Ltd.)
- PP1-029** A179 **Microstructure and Mechanical Properties of Inconel 718 as Built and after Heat Treatment: Manufactured by Laser Direct Energy Deposition and Powder Bed Fusion**  
Yoon Sun Lee (Korea Institute of Industrial Technology)  
Da Hye Kim (Korea Institute of Industrial Technology)  
Eun A Song (Korea Institute of Industrial Technology)
- PP1-030** A183 **A Study on the Viscosity Characteristics of Screw-based Material Extrusion in Additive Manufacturing**  
Yunseok Lee (Korea Institute of Industrial Technology)  
Jungsoo Nam (Korea Institute of Industrial Technology)  
Song Hyeon Ju (Korea Institute of Industrial Technology)  
Ye Won Choi (Korea Institute of Industrial Technology)  
Kyeongun Song (Korea Institute of Industrial Technology)  
Kangwoo Shin (Korea Institute of Industrial Technology)  
Tae-Gon Kim (Korea Institute of Industrial Technology)  
Seong Hyeon Kim (Korea Institute of Industrial Technology)  
Seok-Woo Lee (Korea Institute of Industrial Technology)
- PP1-031** A187 **Reduction of Pores in Additively Manufactured Aluminum Parts by Friction Stir Process**  
Hochan Kim (Andong National University)  
Haeyong Yun (Korea Institute of Robotics & Technology Convergence)  
Inhwan Lee (Chungbuk National University)
- PP1-032** A202 **Integrated Multiphysics Modeling Framework for Process-structure-property Linkage in Metal Additive Manufacturing**  
Kanghyun Lee (Seoul National University)  
Gunjin Yun (Seoul National University)

## Poster Presentation III

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- PP1-033** A207 **Dynamic and Efficient Optimization of Laser-atmospheric Pressure Plasma Jet Micro-additive Manufacturing Process**  
Yu-Hsun Huang (National Tsing Hua University)  
Ming-Tsang Lee (National Tsing Hua University)  
Masataka Sato (Chiba University)  
Hirofumi Hidai (Chiba University)  
Jia-Yang Juang (National Taiwan University)
- PP1-034** A215 **Study on Cutting Characteristics of Lithium-ion Battery Anode Materials**  
Mincheoul Seong (Kongju National University)  
Dongkyoung Lee (Kongju National University)  
MyeongHo Park (Kongju National University)  
Haeun Kim (Kongju National University)
- PP1-035** A217 **Laser Ablation Threshold of LFP Depending on Relative Humidity**  
Myeongho Park (Kongju National University)  
Dongkyoung Lee (Kongju National University)  
Mincheoul Seong (Kongju National University)  
Haeun Kim (Kongju National University)
- PP1-036** A219 **Real-time Laser Beam Measurement Equipment for Welding**  
Chanhee Jeong (Kongju National University)  
Dongkyoung Lee (Kongju National University)  
Seungeun Back (Kongju National University)  
Dawit Musse Yasin (Kongju National University)
- PP1-037** A220 **Thermal Effects of Machining Parameters on 3D Printed Short Fiber Carbon Fiber Reinforced Plastic (CFRP)**  
Kangwoo Shin (Korea Institute of Industrial Technology)  
Tae-Gon Kim (Korea Institute of Industrial Technology)  
Seok-Woo Lee (Korea Institute of Industrial Technology)  
Jeongsoo Nam (Korea Institute of Industrial Technology)  
Seong Hyun Kim (Korea Institute of Industrial Technology)  
Kyeongeun Song (Korea Institute of Industrial Technology)  
Byung-Kwon Min (Yonsei University)
- PP1-038** A221 **Effect of External Water on Mortar during Laser Scabbling**  
Seonwook Lee (Kongju National University)  
Dongkyoung Lee (Kongju National University)  
Youngjin Seo (Kongju National University)

## Poster Presentation III

- PP1-039** A223 **Additive Manufacturing of Ti-6Al-4V Clavicle Customized Anatomical Plate Using Selective Laser Melting and Analysis of Material Properties and Shape Accuracy**  
Sanghun Lee (Korea Institute of Industrial Technology)  
Donghyun Kim (Korea Institute of Industrial Technology)  
Chungsoo Kim (Korea Institute of Industrial Technology)  
Seungjin Kong (Korea Institute of Industrial Technology)  
Soumyabrata Basak (Korea Institute of Industrial Technology)  
Donghyun Kim (Korea Institute of Industrial Technology)
- PP1-040** A235 **A Study on Die Damage of Multi-stage Cold Forging Process**  
A Ra Jo (Korea Institute of Industrial Technology)  
SunKwang Hwang (Korea Institute of Industrial Technology)  
CheolHwan Oh (Korea Institute of Industrial Technology)  
MyeongSik Jeong (Korea Institute of Industrial Technology)  
YoungHoon Moon (Pusan National University)
- PP1-041** A236 **Correlation between Surface Roughness of Plating and Additive Mixing Ratios in Zinc Electroplating Process**  
Yong-Jin Choi (Korea Institute of Industrial Technology)  
Myeong Sik Jeong (Korea Institute of Industrial Technology)  
Sun Kwang Hwang (Korea Institute of Industrial Technology)  
In Kyu Lee (Korea Institute of Industrial Technology)  
Sung Yun Lee (Korea Institute of Industrial Technology)  
Dong Yong Park (Korea Institute of Industrial Technology)  
Su Byung Jeon (Il Sung Co., Ltd.)
- PP1-042** A241 **Electrically Assisted Pressure Joining and Forging of Lightweight Structural Component**  
Thanh Thuong Do (University of Ulsan)  
Sung-Tae Hong (University of Ulsan)  
Tu-Anh Bui-Thi (University of Ulsan)  
Hyun Bae Jang (Korea Institute of Industrial Technology)  
Moon-Jo Kim (Korea Institute of Industrial Technology)
- PP1-043** A243 **Influence of Build Plate Temperature on Properties in Overlap Region of Multi-laser Powder Bed Fusion Fabricated AISi10Mg**  
Joo Eon Kim (UNIST)  
Namhun Kim (UNIST)  
Jageon Koo (UNIST)  
Juchan Lee (UNIST)  
Seongwon Park (UNIST)  
Sungjun Choi (UNIST)

## Poster Presentation III

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- PP1-044** A251 **A Study on Breathable Film via Formation of Microchannels within Polyethylene Using Laser**  
Boseok Kang (Pusan National University)  
Bosung Shin (Pusan National University)  
Jinsu Kim (Pusan National University)  
Sungmoo Hong (Pusan National University)
- PP1-045** A257 **Press Bending of 6061-T6 Aluminum Alloy Tube at Cryogenic Temperatures**  
Yixing Zhao (University of Ulsan)  
Sung-Tae Hong (University of Ulsan)  
Lihong Cai (University of Ulsan)  
Meiling Geng (University of Ulsan)  
Jin-Woo Lee (University of Ulsan)
- PP1-046** A259 **Electrically Assisted Solid-state Spot Joining of Cast Aluminum Alloy A365-T6**  
Suhyeon Choo (University of Ulsan)  
Sung-Tae Hong (University of Ulsan)  
Van Cong Phan (University of Ulsan)  
Changjoo Lee (Hyundai Motor Co.)  
Ki Seok Nam (Hyundai Motor Co.)
- PP1-047** A266 **Research on Waveform Analysis AI Algorithm for Process Monitoring Using Fast Tool Servo (FTS)**  
Seung Jun Lee (JETEC, Co., Ltd.)  
Deug Woo Lee (Pusan National University)  
Ji An Jang (JETEC, Co., Ltd.)  
Mi Ru Kim (Korea Institute of Industrial Technology)
- PP1-048** A270 **A Study on Manufacturing a CNT Composites Bipolar Plate Using Laser Processing**  
Seungeun Baek (Kongju National University)  
Dongkyoung Lee (Kongju National University)  
Dawit Musse Yasin (Kongju National University)  
Chanhee Jeong (Kongju National University)
- PP1-049** A271 **Thermal-structural Analysis of Additive Manufacturing Processes with ABAQUS User Subroutine and Application of Cavity Model**  
Su Hyun Park (Korea Institute of Industrial Technology)  
Kyung Hwan Jung (Korea Institute of Industrial Technology)  
In Yong Moon (Korea Institute of Industrial Technology)  
Hoang Cong Dang (Konkuk University)  
Dong Kyu Kim (Konkuk University)

## Poster Presentation III

- PP1-050** A273 **Heat Source Model Implementation for Thermal Analysis of Wire Arc Additive Manufacturing Processes Using ABAQUS User Subroutines**  
Su Hyun Park (Korea Institute of Industrial Technology)  
Kyung Hwan Jung (Korea Institute of Industrial Technology)
- PP1-051** A274 **Nanosecond Laser Interaction Characteristics for Enhanced Battery Performance of Polyimide Tape**  
Haeun Kim (Kongju National University)  
Dongkyoung Lee (Kongju National University)  
Mincheoul Seong (Kongju National University)  
Myeungho Park (Kongju National University)
- PP1-052** A275 **Build Orientation Optimization Framework for Metal Additive Manufacturing Using Gaussian Process Surrogate Model**  
Jae Eun Park (Seoul National University)  
Gun Jin Yun (Seoul National University)  
Kang Hyun Lee (Seoul National University)  
Min Gyu Chung (Seoul National University)
- PP1-053** A284 **Effect of Tool Surface Roughness in Micro Machining of STAVAX Using PCBN Tools**  
Bo Hyun Kim (Soongsil University)  
Dae Bo Sim (Soongsil University)  
Ji Hyo Lee (Soongsil University)  
Jae Hyun Kim (Soongsil University)  
Jihong Hwang (Seoul National University of Science and Technology)
- PP1-054** A289 **Controlling Bending Curvatures of Water-responsive Shape-shifted Structures via Constrained Environments**  
Sun Hye Yoon (Changwon National University)  
Young Tae Cho (Changwon National University)  
Seo Rim Park (Changwon National University)  
Seok Kim (Changwon National University)
- PP1-055** A295 **Laser-based Temperature Measurement and Process Optimization for Polymer Substrate Processing**  
Chanwoong Wi (Chonnam National University)  
Seunghwoi Han (Chonnam National University)  
Junwon Lee (Chonnam National University)  
Jaehyung Woo (Chonnam National University)  
JeongIn Han (Chonnam National University)  
JiHoon Jeong (Texas A&M University)  
HaKyung Jeong (Korea Institute of Machinery and Materials)

## Poster Presentation III

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- PP1-056** A299 **Mechanical Properties of Recycled Carbon Fiber Reinforced Plastics according to rCF Content and Annealing Treatment**  
Sangjun Jeon (Kongju National University)  
Daejong Yang (Kongju National University)  
Seung Ki Moon (Nanyang Technological University)
- PP1-057** A300 **Cutting Force Prediction in Milling Process Using Physics-informed Neural Network**  
Byungmin Kim (Hongik University)  
Sangjin Maeng (Hongik University)  
Dongjae Kang (Hongik University)
- PP1-058** A301 **Effects of Process Parameters on Grinding Characteristics of Large-area Square Substrate**  
Sangjik Lee (Korea Institute of Industrial Technology)  
Rohwon Kim (Korea Institute of Industrial Technology)
- PP1-059** A306 **A Study on Tool Wear in CFRP Milling through Machining Sound Analysis**  
Taewon Seo (Korea Institute of Industrial Technology)  
Minseok Ha (Korea Institute of Industrial Technology)  
Song Hyeon Ju (Chung-Ang University)  
Jungsoo Nam (Korea Institute of Industrial Technology)  
Tae-Gon Kim (Korea Institute of Industrial Technology)  
Seong Hyeon Kim (Korea Institute of Industrial Technology)  
Kangwoo Shin (Korea Institute of Industrial Technology)  
Seok-Woo Lee (Korea Institute of Industrial Technology)  
Kyeongeun Song (Korea Institute of Industrial Technology)
- PP1-060** A307 **Robust Configuration Selection for Industrial Robots in CFRP Preform Trimming**  
Hyeong Gu Kim (Korea Institute of Industrial Technology)  
Seong Hyeon Kim (Korea Institute of Industrial Technology)  
Tae Hwa Hong (Korea Institute of Industrial Technology)  
Dave Kim (Washington State University Vancouver)  
Byung-Kwon Min (Yonsei University)
- PP1-061** A311 **CMP Strategies for Dishing Control of TGV Interposers with Additives**  
Seunghun Jeong (Pusan National University)  
Haedo Jeong (Pusan National University)  
Yeongil Shin (Pusan National University)  
Jongmin Jeong (Pusan National University)  
Seonho Jeong (Pusan National University)

- PP1-062** A327 **Optimization of Fiber Configuration in Additive Manufactured Composite Structures Using Reinforcement Learning**  
Goanwoo Hyun (Pusan National University)  
Suk-Hee Park (Pusan National University)
- PP1-063** A330 **A Study of Vacuum Thermoforming Process for EVA Sheet-based Dental Device**  
Hyunjun Noh (Dankook University)  
SungHan Rhim (Dankook University)  
Seokhwan Jung (Dankook University)
- PP1-064** A331 **Electrochemical Curved-hole Drilling Using Chained Ball Magnets as a Tool Electrode**  
SeoYoon Shin (Jeonbuk National University)  
ShiHyoung Ryu (Jeonbuk National University)  
SeungZoon Kim (Jeonbuk National University)  
YeRam Kim (Jeonbuk National University)  
MinGyu Jeong (Jeonbuk National University)  
KwangGu Park (Dae Sung Co.)
- PP1-065** A342 **Real-time Surface Roughness Estimation Method based on Frequency Domain Analysis of Monitoring Signals in Metal Cutting Process**  
Jaehyun Lee (Korea Institute of Industrial Technology)  
Kyung-Hee Park (Korea Institute of Industrial Technology)  
Soohyun Nam (Korea Institute of Industrial Technology)  
Hyein Kim (Korea Institute of Industrial Technology)
- PP1-066** A345 **Research on the Detection System for Surface Defects in Hot-rolled Structural Steel**  
Chanhee Lee (Korea University)  
Woochun Choi (Korea University)  
Jaesung Kim (Institute for Advanced Engineering)
- PP1-067** A347 **Fabrication of Electrospin Tubular Structures via Stress-induced Self-assembly**  
Yeong-Seo Kim (Pusan National University)  
Suk-Hee Park (Pusan National University)  
Chae-Hwa Kim (Korea Institute of Industrial Technology)  
Tae-Hee Kim (Korea Institute of Industrial Technology)



## Poster Presentation III

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- PP1-068** A354 **Tool Wear Estimation Model for the Manufacturing Site Application**  
Hyein Kim (Korea Institute of Industrial Technology)  
Jeongin Koo (Korea Institute of Industrial Technology)  
Soohyun Nam (Korea Institute of Industrial Technology)  
Kyung-Hee Park (Korea Institute of Industrial Technology)
- PP1-069** A355 **In-process Monitoring of Pipe Edge Beveling Using Multiple Sensors**  
Rohwon Kim (Korea Institute of Industrial Technology)  
Sangjik Lee (Korea Institute of Industrial Technology)
- PP1-070** A358 **Minimizing Energy Consumption Considering Property Requirements of Fe-79Ni-4Mo Soft Magnetic Composites by LPBF**  
Chunhui Chung (National Cheng Kung University)  
Chi-Chun Chen (National Cheng Kung University)  
Yu-Ming Hsu (National Cheng Kung University)  
Lien-Kai Chang (National Cheng Kung University)  
Mi-Ching Tsai (National Cheng Kung University)
- PP1-071** A377 **Study of Dispersion of Laser Beams due to Convection Using Aberration Analysis for Laser Processes**  
Ji Hun Kim (Seoul National University of Science and Technology)  
Joohan Kim (Seoul National University of Science and Technology)  
Seong Cheol Woo (Seoul National University of Science and Technology)  
Huan Wang (Seoul National University of Science and Technology)
- PP1-072** A378 **Study on the Influence of the Wavelength of the Laser Beam on Laser Drilling of Carbon Fiber Reinforced Thermoplastics**  
Huan Wang (Seoul National University of Science and Technology)  
Joohan Kim (Seoul National University of Science and Technology)  
Ji Hun Kim (Seoul National University of Science and Technology)  
Seong Cheol Woo (Seoul National University of Science and Technology)
- PP1-073** A397 **Industry Standard Communication Protocols for Heterogeneous Machine Tools: Utilizing Unified CNC Interfaces**  
Dong Yoon Lee (Korea Institute of Industrial Technology)  
Young-Deuk Kim (DeeTem)

## 2. Machine Tools & Systems

- PP2-001** A018 **Development of a Sound-based System of Surface Roughness Prediction in Optical Element Curvature Generation**  
 Chien-Yao Huang (National Applied Research Laboratories)  
 Chung-Ying Wang (National Applied Research Laboratories)  
 Yen-Han Chiang (National Applied Research Laboratories)  
 Wei-Cheng Lin (National Applied Research Laboratories)  
 Shu-Cheng Shyu (National Applied Research Laboratories)  
 Jun-Cheng Chen (National Applied Research Laboratories)
- PP2-002** A020 **Sub-domain Analytic Modeling of Linear Flux Switching Permanent Magnet Motor Using Permeability Matrix**  
 Hyo Geon Lee (Yonsei University)  
 Jun Young Yoon (Yonsei University)  
 Sang Won Jung (Yonsei University)  
 Jae Hyun Kim (Yonsei University)  
 Sangmin Lee (Yonsei University)  
 Bo Min Kang (Yonsei University)  
 Jong Min Sung (Yonsei University)  
 Jung Ki Lee (Yonsei University)  
 Hong Sun Jang (Yonsei University)
- PP2-003** A021 **Side Effects in Anodic Dissolution and Machined Surface Integrity Following Electrochemical Milling of AISI304 Stainless Steels**  
 Yukai Wang (National Taiwan University of Science and Technology)  
 Chunliang Kuo (National Taiwan University of Science and Technology)  
 Ziliang Zhang (National Taiwan University of Science and Technology)
- PP2-004** A173 **A Novel Dynamic Model Identification Approach for Industrial Robots in Machining**  
 Ali Khishtan (University of Calgary)  
 Jihyun Lee (University of Calgary)
- PP2-005** A239 **Tool Wear Monitoring and Feed Rate Optimization in Turning based on the Power of the Spindle Motor**  
 Woo-Jin Lee (Korea Institute of Industrial Technology)  
 Wonkyun Lee (Chungnam National University)  
 Jun-Young Oh (Chungnam National University)  
 Eunseok Nam (Korea Institute of Industrial Technology)

## Poster Presentation III

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- PP2-006** A305 **Evaluation of Machining Performance of Walking Machining System**  
Chang-Ju Kim (Korea Institute of Machinery and Materials)  
Dae-Hyun Kim (Korea Institute of Machinery and Materials)  
Chan-Young Lee (Korea Institute of Machinery and Materials)  
Seung-Kook Ro (Korea Institute of Machinery and Materials)
- PP2-007** A310 **Automated Driving Agricultural Assistance Robot Capable of Weeding and Transporting Supplies**  
Heonsoo Choi (Korea Institute of Robotics & Technology Convergence)  
Yongjun Cho (Korea Institute of Robotics & Technology Convergence)  
Hyunggil Hong (Korea Institute of Robotics & Technology Convergence)  
Minsu Kang (Korea Institute of Robotics & Technology Convergence)  
Sunho Jang (Korea Institute of Robotics & Technology Convergence)  
Taehee Kwon (Korea Institute of Robotics & Technology Convergence)  
Seunggi Kwon (BULLS Co., Ltd.)  
Byungmin Lee (BULLS Co., Ltd.)
- PP2-008** A368 **Improved Fatigue Life Model for Cylindrical Roller Bearings Under Operating Conditions**  
Jin Hyuk Sa (Kumoh National Institute of Technology)  
Seong-Wook Hong (Kumoh National Institute of Technology)  
Patrick John Po (Kumoh National Institute of Technology)  
Gilbert Rivera (Kumoh National Institute of Technology)  
Chan Sik Kang (V&C Tech Inc.)
- PP2-009** A369 **Study on the Accurate Sliding Friction Torque Estimation for Angular Contact Ball Bearings**  
Patrick John Po (Kumoh National Institute of Technology)  
Seong-Wook Hong (Kumoh National Institute of Technology)  
Gilbert Rivera (Kumoh National Institute of Technology)  
Jinhyeok Sa (Kumoh National Institute of Technology)
- PP2-010** A390 **Utilization of ROS Platform for Cooperative Robot Control and Application to Machine Tending Process**  
Jaehak Lee (Korea Institute of Industrial Technology)
- PP2-011** A401 **Investigation of Cutting Forces in Peripheral Milling of Thermoplastic CFRP**  
Gyubok Choi (Kyungpook National University)  
Young Hun Jeong (Kyungpook National University)  
MinJae Seo (Kyungpook National University)  
Seung Han Yang (Kyungpook National University)

- PP2-012** A413 **Estimation and Reduction of Peak Load of CNC Machine Tools**  
Wontaek Song (Yonsei University)  
Byung-Kwon Min (Yonsei University)  
Hyeonmin Park (Yonsei University)
- PP2-013** A414 **Integral-based Model Parameter Identification for the Rotary Axes of 5-axis Machine Tool**  
Jong-Min Lim (Yonsei University)  
Byung-Kwon Min (Yonsei University)  
Joon-Soo Lee (Yonsei University)  
Ju-Hyeong Lee (Yonsei University)  
Seungmin Jeong (DN Solutions)
- PP2-014** A415 **Thermal Error Compensation Method considering Operation Conditions of Machine Tools**  
Seungmin Jeong (Yonsei University)  
Byung-Kwon Min (Yonsei University)  
Changho Lee (DN Solutions)  
Kangjae Lee (DN Solutions)

## 5. Micro/Nano Technology

- PP5-001** A002 **An Integrated Microfluidic System for Thermal Regulation and Waste Heat Recovery in Multi-core GPU Systems**  
Pramod Vishwakarma (National Chin-Yi University of Technology)  
Bivas Panigrahi (National Chin-Yi University of Technology)  
Win-Jet Luo (National Chin-Yi University of Technology)
- PP5-002** A015 **Development of Wearable [NH<sub>4</sub>]<sup>+</sup> Sensor for the Detection of Sweat Ions Using Sputtered ZnO Working Electrode and AgI<sub>3</sub>/Ag Reference Electrode Thin Films**  
Ryuya Kono (Tokai University)  
Kazuyoshi Tsuchiya (Tokai University)  
Jyoti Jaiswal (Tokai University)  
Tadahiko Matsubara (Miyahara Co., Ltd.)
- PP5-003** A027 **Shape Oscillation of Droplet on PTFE Coated Surface for Effective Deposition**  
Sungchan Yun (Korea National University of Transportation)  
Hong Ju Jung (Korea National University of Transportation)

## Poster Presentation III

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- PP5-004** A044 **Molecular Insights into Single Pore Flows: Enhancing Efficiency in Semiconductor Manufacturing Processes through Continuum Limit Analysis**  
Jaber Al Hossain (University of Ulsan)  
BoHung Kim (University of Ulsan)
- PP5-005** A049 **Limitations of Continuum Prediction in Sub-continuum Phenomena**  
Md Masuduzzaman (University of Ulsan)  
BoHung Kim (University of Ulsan)
- PP5-006** A050 **Research of Biosensors based on IDT Electrode Structure through Direct Patterning**  
Hyeonyun Jeong (Korea Institute of Industrial Technology)  
Jeongbeom Ko (Korea Institute of Industrial Technology)
- PP5-007** A078 **Electrophoretic Quantum Dot Deposition Method for Ultrahigh Resolution Patterning**  
Byung-Geon Park (Korea Institute of Machinery and Materials)  
Hanchul Cho (Korea Institute of Industrial Technology)  
Geun Woo Baek (Seoul National University)  
Jeonghun Kwak (Seoul National University)  
Ah-Young Park (Korea Institute of Machinery and Materials)
- PP5-008** A086 **Laser Ultrasonic Evaluation of Annealing Effects on the Mechanical Properties of a Tungsten Thin Film**  
Junhyung Lee (Chungnam National University)  
Yun Young Kim (Chungnam National University)
- PP5-009** A092 **Exploring TEM Coherence Properties via Speckle Contrast Analysis in Coherent Electron Scattering of Amorphous Material**  
Ji-Hwan Kwon (Korea Research Institute of Standards and Science)  
Sooheyong Lee (Korea Research Institute of Standards and Science)  
Joohyun Lee (Korea Research Institute of Standards and Science)
- PP5-010** A145 **Laser Surface Sintering of Rheological Functional Surfaces**  
Jibi Jais (Kookmin University)  
Bongchul Kang (Kookmin University)  
Soonwook Kim (Kookmin University)  
Seunghyun Back (Kookmin University)  
Minchang Choi (Kookmin University)  
Jeongsoo Kim (Kookmin University)  
Seongwoo Park (Kookmin University)

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- PP5-011** A146 **Effect of Laser Texturing on the Wettability of Magnesium Alloy AZ31**  
Muhammad Sheheryar (University of Ulsan)  
Doo-Man Chun (University of Ulsan)  
Mohammad Imran Bappy (University of Ulsan)
- PP5-012** A161 **Measuring Ubiquitin Interactions with Mechanically Transduced Immunosorbent Assay (METRIS)**  
Joshua Steimel (California State Polytechnic University Humboldt)  
Alfredo Alexander-Katz (Massachusetts Institute of Technology)  
Joseph Harrision (University of the Pacific)  
Nicholas Brown (University of North Carolina)
- PP5-013** A192 **Artificial Phase Shifter based on Deep Learning for High-precision Optical Interferometry**  
Jurim Jeon (Pusan National University)  
Yangjin Kim (Pusan National University)
- PP5-014** A206 **Improve the Performance of Electroless Ni-P Thin Films by Heat Treatment**  
Ruei-Chi Hsu (National Tsing Hua University)  
Hung-Yin Tsai (National Tsing Hua University)
- PP5-015** A216 **Fabrication of Large-area Organogel-based Slippery Surface Using Photocurable Material**  
Woo Young Kim (Changwon National University)  
Young Tae Cho (Changwon National University)  
Seok Kim (Changwon National University)
- PP5-016** A222 **Mechanical Properties and Drug Release Behavior of Heat-treated Polyvinyl Alcohol/Chitosan/Gentamicin Nanofiber Membranes**  
Faizan E. Mustafa (Chonnam National University)  
Bong-Kee Lee (Chonnam National University)
- PP5-017** A226 **Development of Multifunctional 3D Printable Ionotronic Hydrogels for Wearable Motion Monitoring Sensor**  
Geonjun Choi (UNIST)  
Hoon Eui Jeong (UNIST)  
Somi Kim (UNIST)  
Jaeil Kim (UNIST)

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- PP5-018** A230 **Fabrication of Porous Microchannels for Self-driven Transport of Liquids**  
Haeyeon Lee (Hanyang University)  
Dong Rip Kim (Hanyang University)  
Garam Ku (Agency for Defense Development)  
Minjae Kim (Agency for Defense Development)
- PP5-019** A244 **AI-based Fluid Analysis with Morphological Optimization of Catalyst Nanoparticles toward Reliable Growth of CNT Microstructures**  
Yong Tae Kim (Seoul National University of Science and Technology)  
Jong G. Ok (Seoul National University of Science and Technology)  
Minwook Kim (Seoul National University of Science and Technology)  
Kwangjun Kim (Seoul National University of Science and Technology)  
Rahul S. Ingol (Seoul National University of Science and Technology)
- PP5-020** A245 **Scalable Fabrication of Flexible Optoelectronic Sensors Using Dynamic Nano-inscribing and Metal-mediated Hydrothermal Growth**  
Minwook Kim (Seoul National University of Science and Technology)  
Jong G. Ok (Seoul National University of Science and Technology)  
Kwangjun Kim (Seoul National University of Science and Technology)  
Yong Tae Kim (Seoul National University of Science and Technology)  
Rahul S. Ingole (Seoul National University of Science and Technology)
- PP5-021** A247 **Development of Low-temperature Manufacturing Process for Metal-semiconductor Nanostructure with Enhanced Optoelectronic Transduction**  
Kwangjun Kim (Seoul National University of Science and Technology)  
Jong G. Ok (Seoul National University of Science and Technology)  
Minwook Kim (Seoul National University of Science and Technology)  
Yong Tae Kim (Seoul National University of Science and Technology)  
Rahul S. Ingole (Seoul National University of Science and Technology)
- PP5-022** A249 **Air Permeable Polymer Film and Its Adhesion with UV-pulsed Laser Irradiation**  
Se Young Kwon (Pusan National University)  
Bo Sung Shin (Pusan National University)  
Young Nam Jung (Pusan National University)  
Jeong Hun Kim (Risen P&M)
- PP5-023** A250 **Laser Induced Nano Channel PE Membrane Manufacturing Process Using Laser**  
Cheol Hwan Kim (Pusan National University)  
Bo Sung Shin (Pusan National University)  
Jeong Hun Kim (RISEN P&M)

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- PP5-024** A258 **Development of the Sensorized Soft Robotic Hand with Adhesive Fingertips for Multimode Grasping and Manipulation**  
Jaeil Kim (UNIST)  
Hoon Eui Jeong (UNIST)  
Seongjin Park (UNIST)  
Geonjun Choi (UNIST)
- PP5-025** A261 **A Study on Nano-pulsed Laser-based High Performance Flame Retardant Film**  
Chan Su Moon (Pusan National University)  
Bo Sung Shin (Pusan National University)  
Jeong Hun Kim (Risen P&M)
- PP5-026** A268 **Fabrication of Polylactic Acid Porous Microneedles Necessary to Collect Female Hormones in the Body**  
Katsuhito Fujii (SMK Co., Ltd.)  
Beomjoon Kim (The University of Tokyo)  
Jongho Park (The University of Tokyo)  
Kazunori Nagasaka (Teikyo University Hospital)  
Kaori Matsuyama (SMK Co., Ltd.)  
Nobutaka Hirai (SMK Co., Ltd.)  
Shuji Igawa (SMK Co., Ltd.)  
Hiroyuki Nagano (SMK Co., Ltd.)
- PP5-027** A278 **Characteristics of Graphene Surface with UV-pulsed Laser**  
Jinsu Kim (Pusan National University)  
Bo Sung Shin (Pusan National University)  
SungMoo Hong (Pusan National University)
- PP5-028** A279 **Analysis of Slip Characteristics of Various Liquids on Slippery Liquid-infused Surfaces**  
Seong Min Yoon (Changwon National University)  
Young Tae Cho (Changwon National University)  
Woo Young Kim (Changwon National University)  
Yoo Joo Han (Changwon National University)  
Seok Kim (Changwon National University)
- PP5-029** A285 **Long-term Water Resistance Stability in Water-repellent Surfaces based on Hexagonal Grid Patterns**  
Seo Rim Park (Changwon National University)  
Young Tae Cho (Changwon National University)  
Na Ye Jang (Changwon National University)  
Seok Kim (Changwon National University)



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- PP5-030**   A290   **A Study on the Variation in Height of Microlens Arrays Fabricated via Reflow Process in Relation to Total Heat Energy and Time**  
Myung Seo Kim (Changwon National University)  
Young Tae Cho (Changwon National University)  
Jun Ho Song (Changwon National University)  
Seok Kim (Changwon National University)
- PP5-031**   A291   **Enhancement Method of Alignment Precision in Overlapping of Different Shaped Micropattern**  
Seo Na Yoon (Changwon National University)  
Young Tae Cho (Changwon National University)  
Seok Kim (Changwon National University)  
Woo Young Kim (Changwon National University)  
Bo Wook Seo (Changwon National University)  
Bum Jin Kim (Changwon National University)  
Won Seok Chang (Changwon National University)
- PP5-032**   A328   **Generation of Silicon Nanoparticles by Ultrasonic Processing of Waste Silicon Powders**  
Daiki Nakano (Keio University)  
Jiwang Yan (Keio University)  
Kunimitsu Takahashi (Disco Co., Ltd.)
- PP5-033**   A346   **Scratch Probability according to Different Pads in Chemical Mechanical Polishing**  
Hyeongmin Je (KAIST)  
Sanha Kim (KAIST)  
Dong Geun Kim (KAIST)
- PP5-034**   A388   **Advancements in FPGA Design and Emerging Applications: A Survey**  
Gihong Park (Pukyong National University)  
Jee Youl Ryu (Pukyong National University)  
Sunwoo Lee (Pukyong National University)  
Unal Aras (Pukyong National University)  
Tahesin Delwar (Pukyong National University)

### Special Session - 2. Multidisciplinary Research & Mechatronics for Aero/Defense Applications

- SP2-001** A042 **Optimizing Flexible Electrode Production: Flash-induced Photothermal Annealing of Ag Organometallic Ink**  
 Yu Mi Woo (Kumoh National Institute of Technology)  
 Jung Hwan Park (Kumoh National Institute of Technology)  
 Yong Jun Cho (Kumoh National Institute of Technology)  
 Chan Hyeok Kim (Kumoh National Institute of Technology)  
 Min Gi An (Kumoh National Institute of Technology)  
 Chan Hyeon Yang (Kumoh National Institute of Technology)  
 Hyeon Uk Kim (Kumoh National Institute of Technology)  
 Ho Seok Seo (Kumoh National Institute of Technology)
- SP2-002** A111 **Creating Flexible Touch Sensor Applications Involves the Development of Metal Mesh Electrodes through the Process of Laser Plasmonic Annealing Applied to Metal Nanoparticles**  
 Chan Hyeok Kim (Kumoh National Institute of Technology)  
 Jung Hwan Park (Kumoh National Institute of Technology)  
 Yong Jun Cho (Kumoh National Institute of Technology)  
 Min Gi An (Kumoh National Institute of Technology)  
 Chan Hyeon Yang (Kumoh National Institute of Technology)  
 Ho Seok Seo (Kumoh National Institute of Technology)  
 Hyeon Uk Kim (Kumoh National Institute of Technology)  
 Yu Mi Woo (Kumoh National Institute of Technology)
- SP2-003** A128 **Transparent and Flexible Energy Harvester Utilizing Flash-induced Self-restricted Plasmonic Welding of Silver Nanowire Network**  
 Hyeon Uk Kim (Kumoh National Institute of Technology)  
 Jung Hwan Park (Kumoh National Institute of Technology)  
 Chan Hyeok Kim (Kumoh National Institute of Technology)  
 Yong Jun Cho (Kumoh National Institute of Technology)  
 Chan Hyeon Yang (Kumoh National Institute of Technology)  
 Ho Seok Seo (Kumoh National Institute of Technology)  
 Min Gi An (Kumoh National Institute of Technology)  
 Yu Mi Woo (Kumoh National Institute of Technology)

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- SP2-004** A134 **High-performance Light-emitting Diodes on a Flexible Substrate via Flash-applied Rapid Recrystallization of Perovskite Film**  
Yong Jun Cho (Kumoh National Institute of Technology)  
Jung Hwan Park (Kumoh National Institute of Technology)  
Yu Mi Woo (Kumoh National Institute of Technology)  
Chan Hyeok Kim (Kumoh National Institute of Technology)  
Min Gi An (Kumoh National Institute of Technology)  
Chan Hyeon Yang (Kumoh National Institute of Technology)  
Ho Seok Seo (Kumoh National Institute of Technology)  
Hyeon Uk Kim (Kumoh National Institute of Technology)
- SP2-005** A156 **Stretchable Cu Electrodes with Wrinkled Structure by Flashlight Process**  
Ho Seok Seo (Kumoh National Institute of Technology)  
Jung Hwan Park (Kumoh National Institute of Technology)  
Yu Mi Woo (Kumoh National Institute of Technology)  
Yong Jun Cho (Kumoh National Institute of Technology)  
Chan Hyeok Kim (Kumoh National Institute of Technology)  
Min Gi An (Kumoh National Institute of Technology)  
Chan Hyeon Yang (Kumoh National Institute of Technology)  
Hyeon Uk Kim (Kumoh National Institute of Technology)
- SP2-006** A334 **Laser Assisted Electrospinning of Photopolymer for Fabricating an Overhang Structure**  
Ji-Su Park (Kumoh National Institute of Technology)  
Gil-Yong Lee (Kumoh National Institute of Technology)  
Min-Hyeong Lee (Kumoh National Institute of Technology)  
Seung-Hyeon Choi (Kumoh National Institute of Technology)  
Hyesu Jo (Kumoh National Institute of Technology)
- SP2-007** A335 **Evaluation of Microstructures and Electrical Properties of Thin Conductive Films Fabricated by Laser Sintering**  
Seung-Hyeon Choi (Kumoh National Institute of Technology)  
Gil-Yong Lee (Kumoh National Institute of Technology)  
Hyesu Jo (Kumoh National Institute of Technology)  
Min-Hyeong Lee (Kumoh National Institute of Technology)  
Ji-Su Park (Kumoh National Institute of Technology)
- SP2-008** A364 **Modeling and Simulation of a Novel Shape Memory Alloy-based Idle Air Control Valve for Spark Ignition Engines**  
Pacifique Turabimana (Kumoh National Institute of Technology)  
Jung Woo Sohn (Kumoh National Institute of Technology)

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- SP2-009** A366 **Haptic-guided Robot Arm Control Using Reinforcement Learning**  
Do-Gyeong Yuk (Kumoh National Institute of Technology)  
Jung Woo Sohn (Kumoh National Institute of Technology)
- SP2-010** A367 **Sparse Sensing Technique to Detect and Localize the Damage in Composite Plate based on Lamb Wave Signal and CNN**  
Olivier Munyaneza (Kumoh National Institute of Technology)  
Jung Woo Sohn (Kumoh National Institute of Technology)