

[On-site] Poster Presentation 1

20 July (Wednesday), 11:00-12:00



2. Machine Tools & Systems

Lobby (B2)

- PP2-001** A013 **Monitoring System for Rotating Machine Using Deep Learning**
 Seong Un Choi (Kangwon National University), Byeong Hee Kim (Kangwon National University), Jae Hyun Kim (Kangwon National University), Sang Hu Jeon (Kangwon National University), Woong Ki Jang (Kangwon National University), Seock Hyun Kim (Kangwon National University), Young Ho Seo (Kangwon National University), Young Hun Yang (Kangwon National University)
- PP2-002** A103 **Frequency Measurement Using Impedance Analyzer of 2-DOF Ultrasonic Transducer for Ultrasonic Milling Spindle for Difficult-to-cut Machining**
 Rendi Kurniawan (Yeungnam University), Taejo Ko (Yeungnam University), Moran Xu (Yeungnam University), Minki Choo (Yeungnam University), Gunchul Park (Yeungnam University), Yein Kwak (Yeungnam University), Pilwan Han (Korea Electrotechnology Research Institute)
- PP2-003** A137 **Prediction of Thermal Induced Error by External Heat Source of a Stage Using a Thermal Imaging Camera and ANN Model**
 Kibum Jung (Kyungpook National University), Seung-Han Yang (Kyungpook National University), Sung Hwan Kweon (Kyungpook National University), Kwang-II Lee (Kyungil University)
- PP2-004** A184 **Robotic Machining Productivity Improvement through a Dynamic Model-based FRF Prediction**
 Chang Won Oh (DN Solutions), Byung-Kwon Min (Yonsei University), Tae In Ha (Yonsei University), Jae Ho Lee (Yonsei University)
- PP2-005** A252 **Feed-Forward Compensator for Yaw Motion caused by Eccentricity of Headstock in Gantry-Type 3-Axis Feed Drive System**
 Seung Guk Baek (Korea Institute of Machinery & Materials), Sungcheul Lee (Korea Institute of Machinery & Materials), Chang-Ju Kim (Korea Institute of Machinery & Materials), Chang Kyu Song (Korea Institute of Machinery & Materials), Seung Kook Ro (Korea Institute of Machinery & Materials)

POSTER 1

- PP2-006** A259 **Free-rider Attacks on Industrial Federated Learning**
Youngjoon Lee (Korea Institute of Industrial Technology), Jungsoo Nam (Korea Institute of Industrial Technology)
- PP2-007** A274 **High Precision Interpolator for Robotic Machining considering Kinematic Constraints and Corner Errors**
Jae Ho Lee (Yonsei University), Byung-Kwon Min (Yonsei University)
- PP2-008** A277 **Development of Machinability Diagnosis Program Using Virtual Machining Data**
Jaehak Lee (Korea Institute of Industrial Technology), Eunseok Nam (Korea Institute of Industrial Technology)
- PP2-009** A280 **Development of a Tool Path Compensation Method in CNC Machine Tools Using Machine Learning of Monitoring Signals**
Eunseok Nam (Korea Institute of Industrial Technology), Sangjin Maeng (Hongik University), Kyoung Geun Choi (Korea Institute of Industrial Technology), Jaehak Lee (Korea Institute of Industrial Technology)
- PP2-010** A281 **Predicting the Tracking Performance of Machine Tool Feed Drive Using Simulation Model**
Soon-Hong Hwang (Yonsei University), Byung-Kwon Min (Yonsei University), Wontaek Song (Yonsei University), Chan-Young Lee (Korea Institute of Machinery & Materials)
- PP2-011** A385 **Machinability Investigation of Cryogenic Tooling Kit in Ti6Al4V Milling Process**
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), Byung-Kwon Min (Yonsei University)
- PP2-012** A395 **Study on Four-point Contact Ball Bearings Subjected to Angular Misalignment**
Gilbert Rivera (Kumoh National Institute of Technology), Seong-Wook Hong (Kumoh National Institute of Technology)
- PP2-013** A434 **Performance Evaluation of the Electric Scooter Posture Restoration Platform**
Jaeu Shin (Yeungnam University), Jihyuk Park (Yeungnam University), Haneul Shin (Yeungnam University), Hyeju Kim (Yeungnam University), Seungwon Woo (Yeungnam University), Yonggyu Lee (Yeungnam University), Juan Yoon (Yeungnam University)

3. Automation, Measurement & Control

Lobby (B2)

- PP3-001** A010 **Investigator Specific Posterior Pelvic Tilt Estimation via Meta-learning**
Jae Wook Jung (Pukyong National University), Jun Pyo Hong (Pukyong National University), Sang Eun Jeon (Pukyong National University)
- PP3-002** A012 **Development of Stand-type Robot for Image-based Bio-signal Measurement**
Jongho Bae (Korea Institute of Robotics & Technology Convergence), Kimyoung You (Mobinoma Co., Ltd.), Soeun Son (Korea Institute of Robotics & Technology Convergence), Yong Choi (Korea Institute of Robotics & Technology Convergence), Subeom Jeon (Korea Institute of Robotics & Technology Convergence)
- PP3-003** A014 **Localization Loading Zone for Autonomous Loading**
Donghyeon Lee (Korea University), Daehie Hong (Korea University), Jangho Bae (Kyungsung University), Jaemyung Huh (Korea University), Jaewon Kawk (Korea University)
- PP3-004** A035 **Precise Measurement on Dynamic Ink Spreadability Using High-speed Camera and Nonlinear Regression**
Hyung Tae Kim (Korea Institute of Industrial Technology), Juhea Kim (Korea Institute of Industrial Technology), Mi Yeon Kwon (Korea Institute of Industrial Technology)
- PP3-005** A045 **UAV Path Planning and Obstacle Avoidance based on LiDAR**
Ju Yeon Kim (Sejong University), Seong Han Kim (Sejong University), Hye Lim Jo (Sejong University)
- PP3-006** A070 **Swab Robot-integrated Fast Automated PCR Platform for Viral Infection Screening Clinic**
Dongkyu Lee (Korea Institute of Machinery & Materials), Joonho Seo (Korea Institute of Machinery & Materials), Ohwon Kwon (Korea Institute of Machinery & Materials), Chanyong Park (Korea Institute of Machinery & Materials), Jongsu Yoon (Korea Institute of Machinery & Materials)
- PP3-007** A093 **Digital Twin-Driven Feedrate Optimization - with Application to Additive Manufacturing**
Heejin Kim (University of Michigan), Chinedum Okwudire (University of Michigan)

- PP3-008** A116 **Design and Feasibility Test of Motorized Hand-held Devices for Intra-compartmental Pressure Monitoring**
Bomi Yang (Asan Medical Center), Youngjin Moon (Asan Medical Center), Jaeho Hyun (Asan Medical Center), Dongho Lee (Asan Medical Center), Jihoon Kweon (Asan Medical Center), Dong Ik Shin (Asan Medical Center), Jaesoon Choi (Asan Medical Center), Ji Wan Kim (Asan Medical Center)
- PP3-009** A128 **A Technique for Estimation of Electrochemical Surface Area and Performance of Polymer Electrolyte Membrane Fuel Cell**
Woncheol Na (Korea University), Daehie Hong (Korea University)
- PP3-010** A135 **Low-cost Controllable Thermo-hygrostat Chamber for Bacterial Culture Using Arduino Programming**
Woohyun Park (Kumoh National Institute of Technology), Minseok Kim (Kumoh National Institute of Technology)
- PP3-011** A136 **Construction of Learning Data for AI Based Excavation Using Unsupervised Learning Method**
Chan Young Moon (Korea University), Daehie Hong (Korea University), Jangho Bae (Kyungsoong University), Jaemyung Huh (Korea University)
- PP3-012** A138 **Soil Volume Estimation for Automatic Loading System**
Jaewon Kwak (Korea University), Daehie Hong (Korea University), Jangho Bae (Kyungsoong University), Jaemyung Huh (Korea University), Donghyeon Lee (Korea University)
- PP3-013** A166 **Development of a Machine Vision Based Assembly Automation System of Metallic Components**
Max Kim (University of Calgary), Jihyun Lee (University of Calgary), Simon S. Park (University of Calgary)
- PP3-014** A170 **Transient Force Measurement of Pneumatic Actuator for Hydraulic Gate Valve**
Tahseen Kanwal (University of Science & Technology), Young Bog Ham (Korea Institute of Machinery & Materials), Hong Uk Kim (Korea Institute of Machinery & Materials), Byeung Cheol Ahn (Korea Institute of Machinery & Materials), Jung Ho Park (Korea Institute of Machinery & Materials)
- PP3-015** A172 **Kinematic Analysis of 1-DOF Wearable Elbow Rehabilitation Robot**
Gwanghun Jung (Kyungpook National University), Hak Yi (Kyungpook National University), Hunmin Park (Kyungpook National University), Hwijin Park (Kyungpook National University), Yuseop Sim (Kyungpook National University)

- PP3-016** A185 **Kinematic Parameter Identification for Improving Accuracy of Dual-robotic Systems**
Tae In Ha (Yonsei University), Byung-Kwon Min (Yonsei University), Ji-Hoon Lee (Yonsei University)
- PP3-017** A190 **Tool Path Optimization by Using Improved ACO Algorithm through Density-based Node Accessibility**
Cheol Hwan Oh (Korea Institute of Industrial Technology), Sun Kwang Hwang (Korea Institute of Industrial Technology), Ji Seob An (Pusan National University), A Ra Jo (Pusan National University), Myeong Sik Jeong (Korea Institute of Industrial Technology), Sang Kon Lee (Korea Institute of Industrial Technology)
- PP3-018** A195 **Design of Compact Catheter Control Robot for Arrhythmia Ablation**
Dongho Lee (Asan Medical Center), Youngjin Moon (Asan Medical Center, University of Ulsan College of Medicine), Jaeho Hyun (Asan Medical Center), Bomi Yang (Asan Medical Center), Jaesoon Choi (Asan Medical Center, University of Ulsan College of Medicine)
- PP3-019** A204 **Development of Medical Continuum Robot with Double Bending-unit driven by Plate Actuator**
Jisu Jeon (Korea University), Daehie Hong (Korea University)
- PP3-020** A216 **Kerf-tapered-angle Compensation Control for EPS 5-axis Laser Cutters**
Sol Chai (Korea University), Daehie Hong (Korea University), Yeonho Ko (Korea University), Chanwoo Kim (Korea University)
- PP3-021** A222 **Real-time Defect Monitoring System for Teflon Tube Using Machine Learning**
Chun Muk Jo (Kangwon National University), Yong Jai Park (Kangwon National University), Se Hyong Lee (Kangwon National University), Byeong Hee Kim (Kangwon National University), Young Ho Seo (Kangwon National University), Ho Taek Kwak (CAE Technology), Jin Gu Kim (CAE Technology)
- PP3-022** A230 **Parameter Optimization of Active Vibration Isolation System Using Particle Swarm Optimization**
Chakir Soumayya (Pukyong National University), Young Bok Kim (Pukyong National University), Dong Hun Lee (Pukyong National University), Tan Ngoc Nguyen (Pukyong National University), Dinh Cao Tri (Pukyong National University)

- PP3-023** A242 **Analysis of Noise Characteristics of SMA and Porous Pavement Using OBIS Method**
Woong-yong Lee (Korea Expressway Co.), Chul-whan Kim (Korea Expressway Co.)
- PP3-024** A260 **Large Field of View Measurements of Surface Figures by Radial Shearing Interferometry based on a Geometric Phase Lens**
Hyo Mi Park (Chosun University), Ki-Nam Joo (Chosun University)
- PP3-025** A284 **Digital Twin Platform with Deep Reinforcement Learning for Robotic Automation in the Nuclear Power Plant**
Su-Young Park (Seoul National University), Sung-Hoon Ahn (Seoul National University), Hyungjung Kim (Seoul National University), Soo-Hwan Jeong (Seoul National University), Junghyuk Lee (Seoul National University), Ye-Jin Yu (Seoul National University), Youhyun Jang (Korea Hydro & Nuclear Power Co., Ltd), Woojin Seol (Korea Hydro & Nuclear Power Co., Ltd)
- PP3-026** A315 **3D SLAM for Vehicle with Bumper-mounted LiDAR Sensor**
Jae-Hun Jang (Pukyong National University), Kyung Chang Lee (Pukyong National University), Ji-Hwan Kim (Pukyong National University)
- PP3-027** A318 **A Study on PID Tuning of AVI System with PSO Algorithm**
Ilkyun An (Tech University of Korea), Hyo-Young Kim (Tech University of Korea), Jaehyun Park (Korea Institute of Industrial Technology), Jaehong Shim (Tech University of Korea), Kihyun Kim (Tech University of Korea)
- PP3-028** A370 **Estimation of the Growth Status of Farmed Fish through the Correlation of External Features of Fish**
Jung Ho Kang (Pukyong National University), Kyung Chang Lee (Pukyong National University), Su Yeon Baek (Pukyong National University), Tatiana Keruzel (Pukyong National University), Hyun Hee Kim (Pukyong National University)
- PP3-029** A376 **Design and Implementation of Deep Learning Model for Prediction of Steam Energy Consumption by Heating Process based on Data Streaming Platform**
Chae Young Lim (Institute for Advanced Engineering), Jae Hoi Gu (Institute for Advanced Engineering), Chae Eun Yeo (Institute for Advanced Engineering), Hyung Ah Lee (Institute for Advanced Engineering)

- PP3-030** A423 **Verification of Artificial Neural Network Algorithm for Thin Film Thickness Measurement**
 Joonyoung Lee (University of Science & Technology), Jonghan Jin (Korea Research Institute of Standards & Science, University of Science & Technology)
- PP3-031** A435 **Analysis on Prerequisites to Apply Wireless Sensing to Expand Diagnosis for Secondary Systems in Operating Nuclear Power Plants**
 Tae-Jin Park (Korea Atomic Energy Research Institute), Jae-Cheol Lee (Korea Atomic Energy Research Institute), Jai Wan Cho (Korea Atomic Energy Research Institute), You-Rak Choi (Korea Atomic Energy Research Institute)

4. Materials & Design

Lobby (B2)

- PP4-001** A003 **Influence of Uniaxial Tensile Stress on the Galvanic Corrosion Behavior of an Electrically Assisted Pressure Joint of Dissimilar Stainless Steel Alloys**
 Sam Yaw Anaman (Hanbat National University), Hoon-Hwe Cho (Hanbat National University), Shengwei Zhang (University of Ulsan), Sung-Tae Hong (University of Ulsan), Jaekook Kim (Chonnam National University), Jong-Sook Lee (Chonnam National University)
- PP4-002** A005 **Light Powered Liquid Crystal Elastomer Linear Actuators for Underwater Soft Robotics**
 Won-bin Seo (Pusan National University), Ha-beom Lee (Pusan National University), Joo-young Lee (Pusan National University), Hyun Kim (Korea Research Institute of Chemical Technology)
- PP4-003** A034 **Study on the Windage Loss and Baffles Optimization of High-speed Gear Transmission**
 Sungki Lyu (Gyeongsang National University), Xiangying Hou (Gyeongsang National University, Nanjing University of Aeronautics & Astronautics), Yuzhe Zhang (Nanjing University of Aeronautics & Astronautics), Hong Zhang (Nanjing University of Aeronautics & Astronautics), Namyoung Kim (Gyeongsang National University)
- PP4-004** A044 **Optimized Design for Agricultural Assist Suit**
 Kwan Hyung Park (Korea Institute of Robotics & Technology Convergence), Hae Yong Yun (Korea Institute of Robotics & Technology Convergence), Min Su Kang (Korea Institute of Robotics & Technology Convergence), Hui Chang Park (Korea Institute of Robotics & Technology Convergence), Yong Jun Cho (Korea Institute of Robotics & Technology Convergence)

POSTER 1

- PP4-005** A058 **Cylindrical Warp Knitted Shape Memory Alloy-based Artificial Muscle**
Gyomyung Shin (Seoul National University), Sung-Hoon Ahn (Seoul National University), Hyucksoon Im (Seoul National University)
- PP4-006** A079 **Mussel-inspired Surface Modification of Fine Cellulose Nanofiber (CNF) Films for Enhancing Multifunctional Properties**
Ruth M. Muthoka (Inha University), Jaehwan Kim (Inha University), Pooja S. Panicker (Inha University), Dickens O. Agumba (Inha University)
- PP4-007** A080 **Analysis of the Deformation Mechanism of Enameled Copper Wires for Hairpin Winding**
Ji Seob An (Korea Institute of Industrial Technology), Myeong Sik Jeong (Korea Institute of Industrial Technology), A Ra Jo (Korea Institute of Industrial Technology), Sung Min Lee (Korea Institute of Industrial Technology), Sun Kwang Hwang (Korea Institute of Industrial Technology), Sang Kon Lee (Korea Institute of Industrial Technology), Young Hoon Moon (Pusan National University)
- PP4-008** A084 **Continuous Fabrication of Nanocellulose Long Hybrid Fibers Coated with Esterified-poly (Vinyl Alcohol)-citric Acid-lignin Resin with Multifunctional Properties**
Pooja S. Panicker (Inha University), Jaehwan Kim (Inha University), Dickens O. Agumba (Inha University), Hyun Chan Kim (Inha University)
- PP4-009** A119 **Construction of Ball Screw Straightening Process with a Variety of Heat Treatment**
Ji Hyeon Shin (Korea Aerospace University), Hae-Sung Yoon (Korea Aerospace University), Sang Won Kim (Duckheung Co., Ltd.)
- PP4-010** A123 **Evaluation of Mechanical Property of Al-2.5%Mg Alloy Using In-situ System**
A Ra Jo (Korea Institute of Industrial Technology), Sun Kwang Hwang (Korea Institute of Industrial Technology), In Kyu Lee (Korea Institute of Industrial Technology), Ji Seob An (Korea Institute of Industrial Technology), Cheol Hwan Oh (Korea Institute of Industrial Technology), Myeong Sik Jeong (Korea Institute of Industrial Technology), Young Hoon Moon (Pusan National University)
- PP4-011** A129 **Development of Electrospun Silicone/PCL Multi-layer Stent Coating Film Manufacturing Technology for Multi-functional Covered Stent Development**
Jeong Chan Lee (Jeonbuk National University), Cheol Sang Kim (Jeonbuk National University)

- PP4-012** A131 **Soft Tissue Motion Measurement System according to Knee Condition**
Minchae Kang (Dongguk University), Min-Woo Han (Dongguk University),
Hye Won Lee (Dongguk University)
- PP4-013** A134 **Kirigami Structural Forceps for Endoscopic Extirpation of Foreign Body**
Seong Hyeon Won (Korea University), Daehie Hong (Korea University)
- PP4-014** A18 **Microstructure Evolution and Corrosion Behavior of High Mg Contained Al-Mg Alloys by Work-hardening and Heat Treatment**
Kweon-Hoon Choi (University of Science & Technology), Bong-Hwan Kim (Korea Institute of Industrial Technology), Seung-Yoon Yang (Korea Institute of Industrial Technology), Nam-Seok Kim (Korea Institute of Industrial Technology), Seong-Ho Ha (Korea Institute of Industrial Technology), Young-Ok Yoon (Korea Institute of Industrial Technology), Hyun-Kyu Lim (Korea Institute of Industrial Technology), Shae-Kwang Kim (Korea Institute of Industrial Technology)
- PP4-015** A183 **All-natural Esterified Thermoset Resin Tailored for Cellulose Long-filament Reinforced Polymer Composite**
Dickens O. Agumba (Inha University), Jaehwan Kim (Inha University),
Bijender Kumar (Inha University), Pooja S. Panicker (Inha University)
- PP4-016** A186 **Soft Polymer Materials with Thermosensitive Mechanical Properties by Introducing Thermoreversible Hydrogel Droplets in the Matrix**
Chaemin Kim (POSTECH), Anna Lee (POSTECH), Myeongryun Seong (POSTECH)
- PP4-017** A194 **Crack Patterns on Soft Substrates Containing a Wrinkled Layer Inside**
Junsik Kim (POSTECH), Anna Lee (POSTECH), Seonghyeon Kim (POSTECH)
- PP4-018** A202 **Synthesis Highly Flexible and Biocompatible Acryl-polyurethane for 3D Printing Architectures.**
Min-Ji Seo (Pusan National University), Pil Ho Huh (Pusan National University), Won-Bin Lim (Pusan National University), Jin-Gyu Min (Pusan National University), Ji-Hong Bae (Pusan National University)
- PP4-019** A205 **Soft Pump Using Buckling of Spherical Shell under Tension**
Byungho Lee (POSTECH), Anna Lee (POSTECH)

- PP4-020** A209 **Design and Performance of a Pneumatic-based Expanding Torsional Soft Spring Actuator**
Seongwon Jang (Sungkyunkwan University), Hugo Rodrigue (Sungkyunkwan University), Jaehyuck Jang (Sungkyunkwan University)
- PP4-021** A210 **Towards the Development of a Bidirectional Pneumatic Artificial Muscle**
Altair Sales Coutinho Junior (Sungkyunkwan University), Hugo Rodrigue (Sungkyunkwan University), Jiseong Shin (Sungkyunkwan University)
- PP4-022** A211 **Design and Performance of a Gusseted Pouch Motors for Robot Arm**
Jae Hyuck Jang (Sungkyunkwan University), Hugo Rodrigue (Sungkyunkwan University)
- PP4-023** A212 **Surfactant-assisted Fabrication of P-type Sb_2Te_3 -PEDOT:PSS Thermoelectric Fiber Using Wet-spinning**
Da-hye Kim (University of Science & Technology), Seungwoo Han (Korea Institute of Machinery & Materials), Seungik Shin (University of Science & Technology), Seong-jae Jeon (Korea Institute of Machinery & Materials)
- PP4-024** A218 **High-performance Passive Suction Cup Using Elasticity of Hollow Hemispherical Cap**
Yuseong Song (POSTECH), Anna Lee (POSTECH), Byungho Lee (POSTECH)
- PP4-025** A231 **Facile Fabrication of Reduced Graphene Oxide by Thermal Self-propagation Approach**
Chau Van Tran (Chung-Ang University), Jung Bin In (Chung-Ang University), Anh-Phan Nguyen (Chung-Ang University), Jungbae Lee (Chung-Ang University), Changyoung Ryu (Chung-Ang University), Ravindra Bulakhe (Chung-Ang University)
- PP4-026** A233 **Soft Damper for Highly Effective Flow Pulsation Reduction**
Jinwoo Lee (POSTECH), Anna Lee (POSTECH), Sanghyup Lee (Gachon University), Keunhwa Park (Gachon University)
- PP4-027** A238 **Synthesis and Characterizations of Isosorbide Based Polyurethane : Biodegradable Biomass Material with Different Polyol and Hard Segment Ratios for Water-barrier Film**
Young-Hyun Mo (Pusan National University), Pil Ho Huh (Pusan National University), Jin-Gyu Min (Pusan National University), Won-Bin Lim (Pusan National University), Ju-Hong Lee (Pusan National University), Si-Woo Kim (Pusan National University), Ji-Hong Bae (Pusan National University)

- PP4-028** A241 **Additive Manufacturing and Performance Evaluation for the Optimal Design of Patient-specific Bone Plate for Distal Radius Fractures**
Su Hyun Park (Korea Institute of Industrial Technology, Inha University), Kyung Hwan Jung (Korea Institute of Industrial Technology), Hyung Giun Kim (Korea Institute of Industrial Technology), Gun Hee Kim (Korea Institute of Industrial Technology), Myeong Woo Cho (Inha University)
- PP4-029** A244 **Magnetically Stable Mobile Robot with Magnetic Flux Control**
Sang Uk Nam (Chungnam National University), Young-Woo Park (Chungnam National University), So Hee Park (Chungnam National University), Myounggyu Noh (Chungnam National University)
- PP4-030** A245 **Uniform Elastomer Suspension Coating on Cylinders by Bi-axial Oscillation**
Jeongrak Lee (POSTECH), Anna Lee (POSTECH), Hyunsu Kwak (POSTECH), Byungho Lee (POSTECH), Yuseong Song (POSTECH)
- PP4-031** A246 **Proof-of-concept of Magnetic Force Control for Mobile Robot Application**
So-Hee Park (Chungnam National University), Young-Woo Park (Chungnam National University), Sang Uk Nam (Chungnam National University), Myounggyu Noh (Chungnam National University)
- PP4-032** A248 **Design and Performance Prediction of Contactless Labyrinth Seal for Cryogenic Fluids**
Yubin Kim (Changwon National University), Seokho Kim (Changwon National University), Yonghyun Kwon (Changwon National University), Kihwan Kim (Changwon National University)
- PP4-033** A275 **The Effect of NCO Content in Polyurethane Foam for Automotive Instrument Panel**
Jin-Gyu Min (Pusan National University), Pil Ho Huh (Pusan National University), Won-Bin Lim (Pusan National University), Ju-Hong Lee (Pusan National University), Ji-Hong Bae (Pusan National University)
- PP4-034** A285 **Mechanical Behaviors of Titanium, Steel, and Aluminum Alloys with Lattice Structures Using Selective Laser Melting (SLM) Method**
Van Loi Tran (University of Ulsan), Sung-Tae Hong (University of Ulsan), Shengwei Zhang (University of Ulsan), Jihwan Choi (Korea Institute of Industrial Technology), Dong-Hyun Kim (Korea Institute of Industrial Technology)

- PP4-035** A300 **An Investigation into the Microstructural, Mechanical and Electrochemical Properties of Ti Alloys for Aviation Application**
Hyojoo Lee (Hanbat National University), Hoon-Hwe Cho (Hanbat National University), Sam Yaw Anaman (Hanbat National University), Jung-Muk Choi (Jinhap Co., Ltd.), Jong-Sook Lee (Chonnam National University), Jae-Kook Kim (Chonnam National University), Keun-Ho Lee (Agency for Defense Development), Lee-Ju Park (Agency for Defense Development)
- PP4-036** A304 **Shape-adaptive Smart Composite Soft Parallel Gripper for Damage Minimization**
Jae-Young Lee (Sungkyunkwan University), Sung-Huyk Song (Korea Institute of Machinery & Materials), Yong-Sin Seo (Sungkyunkwan University), Hugo Rodrigue (Sungkyunkwan University), Chan-Hun Park (Korea Institute of Machinery & Materials)
- PP4-037** A305 **Design of Large Deformation Suction Grippers for Gripping Complex Shapes**
Yong-Sin Seo (Sungkyunkwan University), Sung-Hyuk Song (Korea Institute of Machinery & Materials), Jae-Young Lee (Sungkyunkwan University), Hugo Rodrigue (Sungkyunkwan University), Chanhun Park (Korea Institute of Machinery & Materials)
- PP4-038** A306 **Accurate Flow Characterization of Al6082 for Precision Simulation of a Hot Forging Process**
Jeong Hwi Park (Hyundai Wia), Man Soo Joun (Gyeongsang National University), Su Min Ji (Gyeongsang National University), Jeong Muk Choi (Gyeongsang National University)
- PP4-039** A307 **Dynamic Simulation of Rock Cutting Performance of a 130 t Roadheader**
Mun-Gyu Kim (Korea Institute of Industrial Technology), Jung-Woo Cho (Korea Institute of Industrial Technology), Joo-Young Oh (Korea Institute of Industrial Technology), Chang-Heon Song (Korea Institute of Industrial Technology), Hyun-Jun Park (Korea Institute of Industrial Technology)
- PP4-040** A309 **Evaluation of Optimum Process Design of Rock Cutting-splitting Method by Analytic Solution and Dynamic Simulations**
Mun-Gyu Kim (Korea Institute of Industrial Technology), Jung-Woo Cho (Korea Institute of Industrial Technology), Sang-Min Lee (Korea Institute of Industrial Technology), Joo-Young Oh (Korea Institute of Industrial Technology), Chang-Heon Song (Korea Institute of Industrial Technology), Sang-Hwa Yu (Korea Institute of Industrial Technology)

- PP4-041** A324 **Unique Effects of the Electron Beam Irradiation on the Stability of Hard Coatings**
Jisoo Kim (Kyungpook National University)
- PP4-042** A329 **Study of Rough Surface Elastohydrodynamic Lubrication Film Formation with Loading Contact and Elastic Modulus Variations**
Siyoul Jang (Kookmin University)
- PP4-043** A373 **Quantitative Assessment of Friction and Wear Properties of CoCr-based Alloys**
Se Jin Oh (University of Ulsan), Koo-Hyun Chung (University of Ulsan), Donggyun Kwon (University of Ulsan)
- PP4-044** A381 **Experimental Assessment of Tribological Characteristics of Glass Run Channel**
Subin Cha (University of Ulsan), Koo-Hyun Chung (University of Ulsan), Junho Bae (HWASEUNG R&A Co.)
- PP4-045** A387 **Optimization of a Blanking Property Prediction Probe based on Electromagnetic-thermal-mechanical Analysis**
Daehyun Yoon (Sungkyunkwan University), Eunho Lee (Sungkyunkwan University)
- PP4-046** A410 **Cobalt Metal-organic Frameworks on Carbon Felt for the High Performance of Vanadium Redox Flow Batteries**
Jae-Moon Jeong (KAIST), Seong Su Kim (KAIST), Kwang Il Jeong (KAIST), Dajeong Kang (KAIST)
- PP4-047** A437 **Study of Radio Frequency Plasma Spheroidization Effect on the Microstructure Characteristic and Mechanical Properties of Ferritic ODS Steel**
Marzi Andrews Nsiah Ashong (Hanbat National University), Jeoung Han Kim (Hanbat National University), Seungmin Yang (Korea Institute of Industrial Technology), Taesung Park (Hanbat National University), Sang Hoon Noh (Korea Atomic Energy Research Institute)

[On-site] Poster Presentation 2

21 July (Thursday), 11:00-12:00



3. Automation, Measurement & Control

Lobby (B2)

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| PP3-032 | A177 | <p>Performance Verification of Extremum Seeking Based Auto-tuning PID for Tension Control in Weaving Preparation Process
 Baeksuk Chu (Kumoh National Institute of Technology), Junsoo Baek (Kumoh National Institute of Technology), Woohyeon Ahn (Kumoh National Institute of Technology), Minjae Kim (Kumoh National Institute of Technology), Jinwon Kim (Kumoh National Institute of Technology), Juho Yeo (Kumoh National Institute of Technology)</p> |
| PP3-033 | A331 | <p>Frequency-modulated Eddy-current Gap Sensor for Real-time Control
 Hyeong-Joon Ahn (Soongsil University), Vo Ngoc Vu (Soongsil University)</p> |
| PP3-034 | A352 | <p>Research on the Evaluation of Ship Stability and Correlation Analysis in Large Fishing Vessel
 Nam Su Kwak (Incorporated Research Association of Oceans & Fisheries Science Technology), Sang Hyuk Park (Incorporated Research Association of Oceans & Fisheries Science Technology), Chae Young Lim (Institute for Advanced Engineering)</p> |
| PP3-035 | A404 | <p>A Study on a Novel Method to Classify Gait Environment Using Machine Learning
 Kyeong-Jun Seo (National Rehabilitation Center), Hogene Kim (National Rehabilitation Center), Ji-Eun Cho (National Rehabilitation Center)</p> |

5. Micro/Nano Technology

Lobby (B2)

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| PP5-001 | A006 | <p>Monolithic Fabrication of Graphene Spring by Laser-induced Pyrolytic Jetting
 Chan-woo Kim (Pusan National University), Ha-beom Lee (Pusan National University), Dong-woo Kim (Pusan National University), Soon-wook Jung (Pusan National University)</p> |
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- PP5-002** A019 **An Artificial Intelligence Approach for Optimizing the Performance of Membraneless Microfluidic Fuel Cells**
Dang Dinh Nguyen (Kyungpook National University, National Research Institute of Mechanical Engineering), Gyu Man Kim (Kyungpook National University), Thanh Quy Duc Pham (University of Liège, Belgium), Muhammad Tanveer (Kyungpook National University), Haroon Khan (Kyungpook National University), Ji Won Park (Kyungpook National University), Cheol Woo Park (Kyungpook National University)
- PP5-003** A020 **Magneto-responsive Dynamic Nanospine Composites as a Bioinspired Antifouling Material**
Geonjun Choi (UNIST), Hoon-Eui Jeong (UNIST), Hyejin Jang (UNIST), Minsu Kang (UNIST), Somi Kim (UNIST), Minho Seong (UNIST), Sang-Hyeon Lee (UNIST), Chaebin Park (UNIST), Hyeonseok Song (UNIST)
- PP5-004** A025 **Enhancing the Stretch Ratio of a Vertically Stacked Wavy Circuit in Stretchable Device**
Oluwabukola Adebisi (Kongju National University), Jung-Hoon Yun (Kongju National University), Daejong Yang (Kongju National University), Bumjoo Kim (Kongju National University)
- PP5-005** A028 **Analysis of Ductile Machining and Nanoscale Deformation of Single-crystal Materials**
Dong-Hyun Seo (University of Ulsan), Eun-chae Jeon (University of Ulsan), Dong-Hyeon Kim (University of Ulsan), Hwa Sub Lee (University of Ulsan)
- PP5-006** A029 **Magnetically Responsive and Photothermal Composite Cilia Arrays for Anti-icing and De-icing**
Jaeil Kim (UNIST), Hoon-Eui Jeong (UNIST), Sang-Hyeon Lee (UNIST), Minho Seong (UNIST), Somi Kim (UNIST), Hyejin Jang (UNIST), Kondaveeti Stalin (UNIST), Hyukjoo Kwon (UNIST)
- PP5-007** A031 **Enhanced Thermal Transport in a Flexible Thermal Device by a Self-interfacing Characteristic**
Hyukjoo Kwon (UNIST), Hoon-Eui Jeong (UNIST), Donghyuk Lee (UNIST), Minho Seong (UNIST), Seongjin Park (UNIST), Hyejin Jang (UNIST), Geonjun Choi (UNIST), Jaeil Kim (UNIST), Kahyun Sun (UNIST), Balaji Murugesan (UNIST)

- PP5-008** A032 **AgNWs-embedded Nano-patterned PDMS Cantilever for Promoting Maturation of Cardiomyocytes**
Yuyan Liu (Chonnam National University), Dong-Weon Lee (Chonnam National University), Nomin-Erdene Oyunbaatar (Chonnam National University)
- PP5-009** A046 **Laser-induced Graphene Anode for High-rate Performance Lithium-ion Batteries**
Hyungcheoul Shim (Korea Institute of Machinery & Materials), Chau Van Tran (Chung-Ang University), Seungmin Hyun (Korea Institute of Machinery & Materials), Jung Bin In (Chung-Ang University)
- PP5-010** A061 **Plastic-based Microfluidic Device Using UV-curable Epoxy for Culturing Anaerobic Bacteria**
Jeaseok Lee (Kumoh National Institute of Technology), Minseok Kim (Kumoh National Institute of Technology)
- PP5-011** A078 **Egg-tray-inspired Capacitive Flexible Pressure Sensor with High Sensitivity for Various Applications**
Feifei Yin (Kwangwoon University), Nam Young Kim (Kwangwoon University), Hongsen Niu (Kwangwoon University), Eun Seong Kim (Kwangwoon University), Yang Li (University of Jinan)
- PP5-012** A081 **An Electrical Biofilm Treatment System for Effective Infection Management**
Sunghee Won (Proxi Healthcare), Young Wook Kim (Proxi Healthcare), Seongjun Yun (Proxi Healthcare), Soonbum Lee (Proxi Healthcare), Seungmo Lim (Proxi Healthcare)
- PP5-013** A082 **Design, Fabrication and Testing of Water Prevention Electromechanical System**
Seongjun Yun (Proxi Healthcare), Young Wook Kim (Proxi Healthcare), Sunghee Won (Proxi Healthcare), Soonbum Lee (Proxi Healthcare), Seungmo Lim (Proxi Healthcare)
- PP5-014** A085 **Development of Hyaluronic Acid-based Detachable Microneedle Patch**
Su Hyang Lee (Chonnam National University), Kang Ju Lee (Chonnam National University)
- PP5-015** A098 **Interaction Energy of Aerosol Deposited Silver Nanoparticle on PDMS**
Dae Seob Song (Seoul National University), Sung-Hoon Ahn (Seoul National University), Ji Hyeon Song (Dankook University)

- PP5-016** A100 **Sensing Properties of PVDF/LiCl Nanocomposites Fabricated on the Polyimide Flexible Substrate for Humidity Sensing Applications**
Enkhzaya Ganbold (Kwangwoon University), Nam Young Kim (Kwangwoon University), Eun Seong Kim (Kwangwoon University), Do Nam Lee (Kwangwoon University)
- PP5-018** A112 **Green Manufacturing of Superhydrophobic Aluminum Surface and Its Corrosion Resistance**
Ngoc Giang Tran (University of Ulsan), Doo-Man Chun (University of Ulsan)
- PP5-019** A118 **Development of Porous Microneedle Using Freeze-drying Process**
Chang Rim Woo (Chonnam National University), Kang Ju Lee (Chonnam National University)
- PP5-020** A120 **Development of Flexible, Stretchable, and Adherable Hyaluronic Microneedle Patch**
Ha Jin Kim (Chonnam National University), Kang Ju Lee (Chonnam National University)
- PP5-021** A121 **Fabrication of GelMA Nanoparticles by Electrospraying**
Geon A Kim (Chonnam National University), Kang Ju Lee (Chonnam National University)
- PP5-022** A122 **Optimization of Microneedle Printing Angles in SLA-based 3D Printer**
Ji Eun Jeong (Chonnam National University), Kang Ju Lee (Chonnam National University)
- PP5-023** A125 **Fabrication and Characterization of CNT-based Conductive Microneedle Array**
Byeori Kim (Chonnam National University), Kang Ju Lee (Chonnam National University)
- PP5-024** A140 **Numerical Study on Cooling Efficiency according to the Structure of Manifold Microchannel Heat Sink**
Chan Woo Park (Changwon National University), Heesung Park (Changwon National University), Jaehun Choi (Changwon National University)
- PP5-025** A141 **Fabrication of Microfluidic Channel Network Using a Low-cost Laser Engraver with Shrinking Plastic Sheets**
Hyeju Yoo (Kumoh National Institute of Technology), Minseok Kim (Kumoh National Institute of Technology)

- PP5-026** A142 **Replication of 3D Microstructures by Poisson Effect-assisted Soft Lithography**
Minsu Kim (Kyungpook National University), Moonkyu Kwak (Kyungpook National University), Dokyung Kyeong (Kyungpook National University)
- PP5-027** A150 **The Effect of the Microstructural Shape on Long-term Liquid Repellency**
Seungmin Oh (Changwon National University), Young Tae Cho (Changwon National University), Seok Kim (Changwon National University)
- PP5-028** A187 **The Investigation of Highly Stretchable Conductive Inks for 3-dimensional Printed In-mold Electronics**
Jun Choi (Korea Institute of Industrial Technology)
- PP5-029** A203 **Ultralong-term Water Repellency of Interconnected 3D Microcavity Structures**
Seo Rim Park (Changwon National University), Young Tae Cho (Changwon National University), Seok Kim (Changwon National University), Seung Min Oh (Changwon National University)
- PP5-030** A206 **Preparation of Biodegradable Polymer Microbead Disinfectant Using Microemulsion System**
Bong Su Kang (Kyungpook National University), Moonkyu Kwak (Kyungpook National University), Sung Hak Choi (Seoul National University), Kee Sung Kim (Seoul National University), Ho Sup Jung (Seoul National University)
- PP5-031** A232 **Fabrication of Nanofiber Membrane for Nanofiber Integrated Microwell Array based on Wire Electrode Electrospinning**
Jisang Lee (POSTECH), Dong Sung Kim (POSTECH), Seong Jin Lee (POSTECH)
- PP5-032** A267 **Development of Ultra-high Molecular Weight PP Reinforced with Modified Nanocellulose for Mechanical Strength and Low Specific Gravity**
Ju-Hong Lee (Pusan National University), Pil Ho Huh (Pusan National University), Si-Woo Kim (Pusan National University), Ju-Won Kim (Pusan National University), Eun-Sol Lee (Pusan National University), Ji-won Hwang (Pusan National University), Ji-Hong Bae (Pusan National University)
- PP5-033** A271 **An Ultrathin Shadow Mask Fabricated via Self-delamination-based Transfer and Manipulated Using Transfer Printing**
Sang Yeop Lee (POSTECH), Seok Kim (POSTECH), Subin Jeong (POSTECH)

- PP5-034** A278 **Influence of Metal Sulfides Precursor on Sulfur Resistance Property for NH₃-SCR Catalyst**
Bora Ye (Korea Institute of Industrial Technology), Hong-Dae Kim (Korea Institute of Industrial Technology)
- PP5-035** A282 **Fabrication of Nanofibrous Microwell Array through Thermoforming Process for the Stable Formation of Functional Spheroids**
Dohui Kim (POSTECH), Dong Sung Kim (POSTECH), Seong Jin Lee (POSTECH), Jaeseung Yoon (POSTECH)
- PP5-036** A292 **Microfluidic RF Biosensor based on IPD for Glucose Sensing**
Wei Yue (Kwangwoon University), Nam Young Kim (Kwangwoon University), Eun Seong Kim (Kwangwoon University), Jun Ge Liang (Jiangnan University)
- PP5-037** A296 **Wide-range and High-stability Flexible Capacitive Pressure Sensors Enabled by a Porous Nanocomposite with Hierarchical Microstructures**
Yunjian Guo (Kwangwoon University), Jong-Chul Lee (Kwangwoon University), Xiaoyu Zhang (Kwangwoon University)
- PP5-038** A337 **Catalyst-anchored Hydrogen Gas Leak Detector on Sodalime for Automobile Application**
Gustavo Panama (KAIST), Seung S. Lee (KAIST), Munhyung Jo (KAIST), Soonseop Shim (Hydrochem Co., Ltd), Minsu Kim (Hydrochem Co., Ltd)
- PP5-039** A353 **Nitrogen and Ultrapure Water Mixing Ratio of Two-fluid Nozzle for Epoxy Cleaning**
Jongjin Lee (Gachon University), Keunhwan Park (Gachon University), Jae Hun Lee (Meere Co.)
- PP5-040** A356 **Core-sheath-design-based Plasmonic Nanowires for Surface-enhanced Raman Spectroscopy**
Hongdoo Kim (POSTECH), Hyung Gyu Park (POSTECH), Jemin Lee (POSTECH), Jangho Lee (POSTECH), Keunhan Park (University of Utah)

POSTER 2

- PP5-041** A360 **Experimental Assessment of Frictional Properties of Two-dimensional Hybrid Organic-inorganic Perovskites**
Vo Kim Hieu Van (University of Ulsan), Koo-Hyun Chung (University of Ulsan)
- PP5-042** A361 **Optimization of Friction Characteristics of 2D Materials Using Taguchi Method**
Thanh-Duy Le (University of Ulsan), Koo-Hyun Chung (University of Ulsan)
- PP5-043** A372 **Development of Microflow Controller through Feedback Control of Portable Air Pump based on Artificial Intelligence Image Analysis**
Wansoo Choi (Kumoh National Institute of Technology), Minseok Kim (Kumoh National Institute of Technology), Dongho Lee (Kumoh National Institute of Technology), Semin Park (Kumoh National Institute of Technology)
- PP5-044** A421 **Solution-processed Transparent Complex Electrodes based on Silver Nanowire and Metal Oxide**
Thi Ly Trinh (Hanbat National University), Hongseok Youn (Hanbat National University), Pyeongsam Ko (Hanbat National University)
- PP5-045** A422 **The Effect of Structural Properties for Cleaning Performance of PVA Brush during Post-CMP**
Somin Shin (KAIST), Sanha Kim (KAIST), Dong Geun Kim (KAIST)
- PP5-046** A425 **Growth Ag Crystal Seed on ZnO NPs Layer for Optical Properties Creation by Reduction of Silver Ink under Ultraviolet Wavelength**
Nhung Le Thi Tuyet (Hanbat National University), Hongseok Youn (Hanbat National University), Ly Trinh Thi (Hanbat National University)
- PP5-047** A441 **Fabrication of Insert Structure Using Thin Nanofibers Membrane**
Jeong Hwa Kim (Kyungpook National University), Young Hun Jeong (Kyungpook National University)

6. New and Renewable Energy

Lobby (B2)

- PP6-001** A033 **Influence of Ionomer Distribution on Electrochemical Performance of Quaternion PtC Catalyst Layers in PEM Fuel Cells**
Ali Akbar (Hanyang University), Sukkee Um (Hanyang University), Sung-Jae Chung (Hanyang University), Sung-Jae Park (Hanyang University), Suho Cho (Hanyang University)

- PP6-002** A055 **Controlling Oxygen Defect Chemistry at Electrolyte Surface of Intermediate Temperature Solid Oxide Fuel Cells**
Seo Ju Kim (Sungkyunkwan University), Wonyoung Lee (Sungkyunkwan University), Mingi Choi (Sungkyunkwan University)
- PP6-003** A097 **Silica Added Polymer Electrolyte Membrane for All Solid-state Lithium Batteries**
Waqas Ul Arifeen (Yeungnam University), Taejo Ko (Yeungnam University), Yein Kwak (Yeungnam University), Xiaolong Leng (Yeungnam University), Mingdai Yang (Yeungnam University)
- PP6-004** A114 **Effect of Ni-GDC Thin-film Anode Thickness on Solid Oxide Fuel Cells based on Nanoporous Substrates**
Myung Seok Lee (Seoul National University), Suk Won Cha (Seoul National University), Yangjae Kim (Seoul National University)
- PP6-005** A145 **Triboelectric Nanogenerator with Charge Pumping by Combining Vertical Motion and Sliding Motion**
Sungho Ji (Korea University of Technology & Education), Jinhyoung Park (Korea University of Technology & Education), Jaehee Shin (Korea University of Technology & Education), Hyunseo Park (Korea University of Technology & Education)
- PP6-006** A153 **Numerical Investigation of Different Flow Channel Designs for the Cooling Performance of High Voltage Direct Current Devices**
Ehtesham Ali (Changwon National University), Heesung Park (Changwon National University)
- PP6-007** A175 **Numerical Investigation of Cooling Performance considering Deterioration of Thermal Barrier Coating (TBC) to Optimize the Thickness of Thermal Barrier Coating in Regenerative Maintenance Process of Gas Turbine**
Hwabhin Kwon (Changwon National University), Heesung Park (Changwon National University)
- PP6-008** A178 **Numerical Study on the Cooling Performance according to Film Cooling Hole Structure with Vortex Generator**
Chan Hyeok Park (Changwon National University), Heesung Park (Changwon National University)

- PP6-009** A179 **Comparative Analysis of Heat Transfer Performance Using Mist/stem Coolant in a Channel with Different Shaped of Rib-turbulator**
Sajan Tamang (Changwon National University), Heesung Park (Changwon National University)
- PP6-010** A181 **Tailoring Sputtered LSCF-GDC Oxygen Electrodes for Low Temperature (500 C) H₂O/CO₂ Co-electrolysis of Thin-film Solid Oxide Electrolyzer Cells**
In Won Choi (Seoul National University), Suk Won Cha (Seoul National University), Sanghoon Lee (Seoul National University), Myung Seok Lee (Seoul National University)
- PP6-011** A217 **Effects of Surface Treatment of Nano-porous Anodized Aluminum Oxide Substrate for Low Temperature Solid Oxide Fuel Cells**
Young Jo Lee (Dankook University), Gu Young Cho (Dankook University), Gye Eun Jang (Dankook University), Dong Kun Song (Dankook University), Ho Jun Yoo (Dankook University), Jung Soo Kim (Dankook University), Ye Rim Kwon (Dankook University), Ji Woon Jeon (Dankook University), Hee Yoon Lee (Dankook University)
- PP6-012** A223 **Effects of Mist Humidification with NaCl Solution on Characteristics of PEMFCs**
Ho Jun Yoo (Dankook University), Gu Young Cho (Dankook University), Gye Eun Jang (Dankook University), Young Jo Lee (Dankook University), Dong Kun Song (Dankook University), Jung Soo Kim (Dankook University), Ye Rim Kwon (Dankook University), Ji Woong Jeon (Dankook University), Seoung Jai Bai (Dankook University)
- PP6-013** A251 **Effects of Geometry of Flow Channel on PEMFCs Humidified with NaCl Solution**
Dong Kun Song (Dankook University), Gu Young Cho (Dankook University), Gye Eun Jang (Dankook University), Young Jo Lee (Dankook University), Ho Jun Yoo (Dankook University), Jung Soo Kim (Dankook University), Ye Rim Kwon (Dankook University), Ji Woong Jeon (Dankook University), Seoung Jai Bai (Dankook University)
- PP6-014** A261 **Optimization of Current Collecting Layer and Thickness of 3D Printed Polymer Bipolar Plates for Ultra-light Polymer Electrolyte Membrane Fuel Cells**
Gye Eun Jang (Dankook University), Gu Young Cho (Dankook University), Dong Kun Song (Dankook University), Ho Jun Yoo (Dankook University), Young Jo Lee (Dankook University), Yang Jae Kim (Seoul National University), Suk Won Cha (Seoul National University), Hee Yun Lee (Dankook University)

- PP6-015** A263 **A Study of Cryogenic Fluid Quantitative Transfer by PBU Method for Hydrogen - HTS Motor Propulsion System**
Kihwan Kim (Changwon National University), Seokho Kim (Changwon National University), Yonghyun Kwon (Changwon National University)
- PP6-016** A293 **Multiwalled Carbon Nanotube Coated Toray Carbon Paper-based Air-breathing Biocathode for Enzymatic Biofuel Cell**
Haroon Khan (Kyungpook National University), Gyu Man Kim (Kyungpook National University)
- PP6-017** A371 **Seawater Secondary Battery Package for Marine Equipment Application and BMS Module and Algorithm Design considering Stability and Efficiency**
Hyunjun Jang (Pukyong National University), Kyung Chang Lee (Pukyong National University), Hyeong Jun Kim (Pukyong National University), Cheol Soo Park (MET Solution)
- PP6-018** A378 **The Performance of Flexible Polymer Electrolyte Membrane Fuel Cell Applied by Various Gas Diffusion Layers in Flat and Bent Position**
Yoonho So (Soongsil University), Taehyun Park (Soongsil University), Hongnyoung Yoo (Soongsil University), Jaeyeon Kim (Soongsil University), Seokjun Jeong (Soongsil University), Heesoo Cha (Soongsil University), Obeen Kwon (Soongsil University), Hyeonjin Cha (Soongsil University)
- PP6-019** A405 **New Alloy Electrode for All Solid States Battery**
Sangwoo Kim (Korea Institute of Industrial Technology), Dong Eung Kim (Korea Institute of Industrial Technology)
- PP6-020** A427 **Nanostructured Cu Mesh with Melt-infused Li for Lithium Metal Battery Anode**
Inyeong Yang (KAIST), Sanha Kim (KAIST)

Special session - 1. Railway Engineering

Lobby (B2)

- S1-001** A016 **A Study on Lateral Force Distribution Characteristics and Allowance Limits of Urban Railway Vehicles**
Young-Sam Ham (Korea Railroad Research Institute)
- S1-002** A041 **Rail Profile Measurement Method with Two Laser Displacement Sensors**
Wootae Jeong (Korea Railroad Research Institute), Ranhee Yoon (Korea Railroad Research Institute)

POSTER 2

- S1-003** A086 **Monitoring Technique for Diagnosing the Condition of High-speed Vehicles on Running**
Seok Jin Kwon (Korea Railroad Research Institute)
- S1-004** A110 **Shunting Analysis Applying Speed Dependent Characteristics of Hydrostatic Buffer Using Multilayer Perceptron**
Jun Hyeok Hwang (University of Science & Technology), Hyun Seung Jung (University of Science & Technology), Jin Sung Kim (Korea Railroad Research Institute), Seung Wan Son (Korea Railroad Research Institute), Seung Ho Ahn (Korea Railroad Research Institute)
- S1-005** A312 **A Study on Detect Detection in the Welding Part of the Bogie Connection for High-speed Rail Vehicles**
Chan Woo Lee (Korea Railroad Research Institute), Seok Jin Kwon (Korea Railroad Research Institute)
- S1-006** A341 **Design of Hub Contact Edge Shape to Improve Fatigue Crack Initiation Life in a Press-fit Assembly**
Dong Hyung Lee (Korea Railroad Research Institute), Jung Won Seo (Korea Railroad Research Institute), Seok Jin Kwon (Korea Railroad Research Institute), Ha Young Choi (Dongyang Mirae University)
- S1-007** A348 **Rolling Contact Test Using Welding Specimen of Railway Vehicle Wheels**
Jung-Won Seo (Korea Railroad Research Institute), Byeong-Choon Goo (Korea Railroad Research Institute), Seok-Jin Kwon (Korea Railroad Research Institute)
- S1-008** A367 **Study on Tire Failure Mode Analysis of Light Rail Transit with Rubber Wheels**
Seong Kwang Hong (Korea Railroad Research Institute), Jae-Hoon Kim (Korea Railroad Research Institute)

[On-site] Poster Presentation 3

22 July (Friday), 11:00-12:00



1. Manufacturing Processes

Lobby (B2)

- | | | |
|---------|------|---|
| PP1-001 | A008 | <p>3D Printing Process Parameters Optimization of LPBF Using Porosity Data Set Obtained from Archimedes Method and Micrographic Observation</p> <p>Yeoul Song (Korea Institute of Machinery & Materials), Byeonguk Song (KAIST)</p> |
| PP1-002 | A017 | <p>Effect of Cutting Properties by Tool Orientation in End-mill Process of Ti-alloy</p> <p>Mi-Ru Kim (Korea Institute of Industrial Technology), Hoon-Hee Lee (Korea Institute of Industrial Technology), Min-Suk Park (Korea Institute of Industrial Technology), Wang-Ho Yun (Korea Institute of Industrial Technology)</p> |
| PP1-003 | A022 | <p>Effect of Electrode Materials on Material Removal in Cu CMP Using Electrolytically-Ionized Slurry</p> <p>Hyunseop Lee (Dong-A University), Yejin Jo (Dong-A University), Younghun Kim (Dong-A University), Yeonghyeon Nam (Dong-A University)</p> |
| PP1-004 | A026 | <p>A Novel Phase Extracting Method for Thickness Profiling of a Transparent Optical Flat</p> <p>Jurim Jeon (Pusan National University), Yangjin Kim (Pusan National University), Sungtae Kim (Pusan National University), Wonjun Bae (Pusan National University)</p> |
| PP1-005 | A038 | <p>Improvement of Cooling Efficiency of Die Casting Molds Using Metal Additive Manufacturing Technology Research</p> <p>Myoung Pyo Hong (Korea Institute of Industrial Technology)</p> |
| PP1-006 | A040 | <p>Prediction of the Machining Accuracy Employing a Position Control with a Flexible Lapping Wheel - Consideration of Wheel Rotation R11</p> <p>Sun-Kyu Lee (Gwangju Institute of Science & Technology), Sangik Lee (Gwangju Institute of Science & Technology), Minsu Kim (Gwangju Institute of Science & Technology)</p> |

- PP1-007** A043 **Study on Corrosive Properties of Copper Alloy Powder Layered on Nickel-aluminum Bronze by Using Directed Energy Deposition**
Changliang Yao (Korea Maritime & Ocean University), Do-Sik Shim (Korea Maritime & Ocean University), Gwangyong Shin (Korea Institute of Industrial Technology)
- PP1-008** A057 **Characteristic Analysis of Vanadium Carbide Coatings on a Ti-6Al-4V Substrate**
Seongwon Yoo (Changwon National University), Choon-Man Lee (Changwon National University), Donghyeon Kim (Changwon National University)
- PP1-009** A065 **Deposition Characteristics and Compression Behaviors of Various Aluminum Alloys Fabricated Using Directed Energy Deposition**
Hwa Jeong Kim (Korea Maritime & Ocean University), Do-Sik Shim (Korea Maritime & Ocean University), Yeong Min Lee (Korea Maritime & Ocean University), Gwang Yong Shin (Korea Institute of Industrial Technology)
- PP1-010** A066 **Study on Wear Behaviors of High-manganese Steels Fabricated Using Directed Energy Deposition**
Han-Byeol Park (Korea Maritime & Ocean University), Do-Sik Shim (Korea Maritime & Ocean University), Hyeong-Jin Ha (Korea Maritime & Ocean University), Gwang-Yong Shin (Korea Institute of Industrial Technology), Ki-Yong Lee (Korea Institute of Industrial Technology)
- PP1-011** A069 **Comparison of Acoustic Emission Tendency for in Situ Monitoring in Selective Laser Melting Manufacturing with Micro-structure**
Sunghyun Sung (Korea Institute of Industrial Technology, Hanyang University), Ohjung Kwon (Korea Institute of Industrial Technology), Hyung Giun Kim (Korea Institute of Industrial Technology), Wonrae Kim (Korea Institute of Industrial Technology), Gun-Hee Kim (Korea Institute of Industrial Technology), Gyung Bae Bang (Korea Institute of Industrial Technology, Inha University), Kyung-Young Jhang (Hanyang University)
- PP1-012** A077 **Study on Selective Laser Melting Process for High Build Rate with Commercially Pure Titanium**
Mintae Kim (Korea Institute of Industrial Technology), Hyung Giun Kim (Korea Institute of Industrial Technology), Gyung Bae Bang (Inha University), Taeg Woo Lee (Korea Institute of Industrial Technology), Gun-Hee Kim (Korea Institute of Industrial Technology), Kyung-Hwan Jung (Korea Institute of Industrial Technology), Won Rae Kim (Korea Institute of Industrial Technology), Seung Jun Han (Konkuk University), Sunghyun Sung (Hanyang University), Ohjung Kwon (Korea Institute of Industrial Technology)

- PP1-013** A087 **A Study on the Selection of Optimal Conditions Using CBN Tools in Quartz Machining**
Seong-Jun Choi (Changwon National University), Choon-Man Lee (Changwon National University), Dong-Hyeon Kim (Changwon National University)
- PP1-014** A089 **Simulation and Experimental Analysis of Capability of Conformal Cooling Channel Mold Manufactured by Metal 3D Printing Technology**
Yu Jin Park (Korea Institute of Industrial Technology), Jong Wan Ko (Korea Institute of Industrial Technology), Eok Soo Kim (Dongnam Precision Co., Ltd.), Jeong Hun Lee (Korea Institute of Industrial Technology), Ji Hwan Choi (Korea Institute of Industrial Technology), Pil Hwan Yoon (Korea Institute of Industrial Technology), Ho Jeong Kang (Korea Institute of Industrial Technology)
- PP1-015** A090 **A Basic Research on the Ti-Nb-Ni-C-V-Al High Entropy Alloys Manufacturing Using Direct Energy Deposition Process**
Ho-In Jeong (Changwon National University), Choon-Man Lee (Changwon National University), Dong-Hyeon Kim (Changwon National University), Eun-Jung Kim (Changwon National University)
- PP1-016** A105 **New Fabrication Process of Carbon Short Fiber/Metal Composites and Their Properties**
Yongbum Choi (Hiroshima University), Matsugi Kazuhiro (Hiroshima University), Gen Sasaki (Hiroshima University), Moonhee Lee (Donggeui Institute of Technology)
- PP1-017** A111 **A Study on the Forming Limit Diagram of 22MnB5 Sheet Using the Fracture Energy Theory**
Dae Young Ahn (Pusan National University), Min Sik Lee (Pusan National University)
- PP1-018** A113 **A Study on the Analytical Approach to Realize Mechanical Properties of HAZ in Hot Stamped TWB Specimens according to Coating Layer Removal**
Hyeon Jong Jeon (Pusan National University), Min Sik Lee (Pusan National University)
- PP1-019** A115 **Comparison of Al7075 Formability Using Experimental and Theoretical according to Solution Heat Temperature**
Won Jin Lee (Pusan National University), Min Sik Lee (Pusan National University), Chung Gil Kang (Pusan National University)

- PP1-020** A126 **Processing Optimization of Inconel 738 for Turbine-blade Application by Selective Laser Melting**
Ho Yoon Kim (SFS. Co., Ltd.), Sungwoo Bae (SFS. Co., Ltd.), Seungmuk Ji (SFS. Co., Ltd.), Hyun Ji Kim (SFS. Co., Ltd.)
- PP1-021** A130 **Characterization of g-C₃N₄ as a Filler in the Photocuring 3D Printing Process**
Yu Jin Park (Korea Institute of Industrial Technology), Jong Wan Ko (Korea Institute of Industrial Technology)
- PP1-022** A133 **Enhancement of the Mechanical Properties of Additively Manufactured Bio-based PC via Warm Isostatic Press (WIP)**
Seong Je Park (Korea Institute of Industrial Technology), Il Hyuk Ahn (Tongmyong University), Jinsoo Park (Korea Institute of Industrial Technology), Yong Son (Korea Institute of Industrial Technology)
- PP1-023** A143 **Effect of Infiltration with Warm Isostatic Press (WIP) on Mechanical Properties and Porosity in Binder Jetting Process**
Seong Jun Park (Korea Institute of Industrial Technology), Il Hyuk Ahn (Tongmyong University)
- PP1-024** A144 **Effect of the Temperature Profile in Warm Isostatic Press (WIP) for Mechanical Properties of a Part from FDM Process**
Dohyun Kim (Korea Institute of Industrial Technology), Il Hyuk Ahn (Tongmyong University), Yong Son (Korea Institute of Industrial Technology)
- PP1-025** A149 **Experimental and Analytical Force Model of Bidirectional CFRP Drilling Operation**
Anand Prakash Jaiswal (UNIST), Hyung Wook Park (UNIST)
- PP1-026** A168 **Effect of Boron Content on Microstructure and Mechanical Properties of DED Deposited SUS316L Alloy**
Yoon Sun Lee (Korea Institute of Industrial Technology), Dong Yong Park (Korea Institute of Industrial Technology), Hyeon Jeong Park (Korea Institute of Industrial Technology)
- PP1-027** A173 **Planarization Profile Modeling Using Pad Bulk Deformation and Real Contact Area Analysis of Macro-scale Device Pattern**
Seonho Jeong (Pusan National University), Haedo Jeong (Pusan National University), Yeongil Shin (Pusan National University), Youngwook Park (Pusan National University), Jongmin Jeong (Pusan National University)

- PP1-028** A192 **Up and Down Mill Tool-path Optimization for End-mill Cutting of Unidirectional CFRP**
 Dong Gyu Kim (Daegu Mechatronics & Materials Institute), Seung-Han Yang (Kyungpook National University), Jae Young Heo (Daegu Mechatronics & Materials Institute), Yeon Oh Kim (Daegu Mechatronics & Materials Institute)
- PP1-029** A198 **Lubricant Free Thermoforming Using Electrochemical Polished Molds**
 Seong Ung Kwak (Chosun University), Jeong Woo Park (Chosun University), Kang Hyun Lee (Chosun University), Uk Su Kim (Chosun University)
- PP1-030** A199 **Welding Technology Research for Manufacturing Integrated Heat Exchanger for Small and Medium-sized LNG Fueled Ship**
 Jaewoong Kim (Korea Institute of Industrial Technology), Changmin Pyo (Korea Institute of Industrial Technology), Younghyun Kim (Korea Institute of Industrial Technology), Changseok Hong (Daesang Heavy Industries), Hun Lee (Daesang Heavy Industries), Sangyong Kim (Daesang Heavy Industries), Changyoul Park (GASPACK), Junyoung Choi (GASPACK)
- PP1-031** A221 **Investigation of Thermal Transfer during Directed Energy Deposition on Lightweight Materials with Inner Lattice Structures**
 Kook Hwa Choi (Korea Maritime & Ocean University), Do-Sik Shim (Korea Maritime & Ocean University), Du Bin Lee (Korea Maritime & Ocean University), Da Kyoung Hwang (Korea Maritime & Ocean University), Gwang Yong Shin (Korea Institute of Industrial Technology)
- PP1-032** A227 **Effects on Product Shape of Melt Pool by Energy Density in the Additive Manufacturing Process of Polymer Materials**
 Eunjung Shim (Korea Institute of Industrial Technology), Gunhee Kim (Korea Institute of Industrial Technology)
- PP1-033** A229 **On-machine Measurement and Compensation Techniques for Improving Machining Accuracy of Large-size Aerospace Parts**
 Hoon-Hee Lee (Korea Institute of Industrial Technology), Wang Ho Yun (Korea Institute of Industrial Technology), Geon Woo Gu (Korea Institute of Industrial Technology), Mi Ru Kim (Korea Institute of Industrial Technology), Hyung Ick Kim (Korea Institute of Industrial Technology)

- PP1-034** A240 **Fabrication of Nanopatterned Cylindrical Mold using Laser Interference Lithography**
Jun Han Park (Pusan National University), Bo Sung Shin (Pusan National University), Lee Jun Uk (Pusan National University), Bo Seok Kang (Pusan National University)
- PP1-035** A247 **Porosity Formation of Laser Welded Cast Aluminum Subjected Coaxially Arranged Dual-beam Laser Oscillation Welding**
Hyeonhee Kim (Korea Institute of Industrial Technology), Minjung Kang (Korea Institute of Industrial Technology), Sanghoon Kang (Korea Institute of Industrial Technology), Daein Kim (Daewoo Industry)
- PP1-036** A256 **A Study on Post-processing for Additively Manufactured Inconel Structures based on Wire Arc Additive Manufacturing (WAAM)**
Hwi Jun Son (Changwon National University), Young Tae Cho (Changwon National University), Seok Kim (Changwon National University)
- PP1-037** A265 **Prediction of Surface Roughness in Machining of WC with the PCD Micro Grinding Tool Using ANN**
Sangjin Maeng (Hongik University), Jae Hoon Ahn (Yonsei University), Dae Bo Shim (Soongsil University), Bo Hyun Kim (Soongsil University), Byung-Kwon Min (Yonsei University)
- PP1-038** A266 **Melting and Transfer Behaviors of Ferrous and Non-ferrous Filler Wire Irradiated with Laser Heat Source**
Joonghyeon Shin (Korea Institute of Industrial Technology), Minjung Kang (Korea Institute of Industrial Technology)
- PP1-039** A272 **Investigation on Microstructure and Mechanical Properties of AZ31B Magnesium Alloy Sheets Deformed in Different Hot Deformation Conditions**
Mohanraj Murugesan (Seoul National University of Science & Technology), Chang-Whan Lee (Seoul National University of Science & Technology), Jae-Hyeong Yu (Seoul National University of Science & Technology), Wanjin Chung (Seoul National University of Science & Technology)
- PP1-040** A283 **Effect of GO Reinforcement on the Microstructural Changes Related to Mechanical Properties of Friction Stir Processed Al Matrix Composites**
Soumyabrata Basak (University of Ulsan), Sung-Tae Hong (University of Ulsan), Mounarik Mondal (University of Ulsan), Kun Gao (University of Ulsan), Han-Gyeol Yoo (Hanbat National University), Sam Yaw Anaman (Hanbat National University), Hoon-Hwe Cho (Hanbat National University)

- PP1-041** A286 **Electrically Assisted Pressure Joining of Copper C11000 Alloys**
Tu-Anh Bui-Thi (University of Ulsan), Sung-Tae Hong (University of Ulsan),
Thuong Do Thanh (University of Ulsan), Cong Phan Van (University of
Ulsan), Sihwan Lee (Seoul National University)
- PP1-042** A287 **Data Management for Digital Transformation of Machining Process**
Dong Yoon Lee (Korea Institute of Industrial Technology), Hoon Hee Lee
(Korea Institute of Industrial Technology)
- PP1-043** A288 **Simultaneous Solid State Joining and Forging of Dissimilar Steels**
Thanh Thuong Do (University of Ulsan), Sung-Tae Hong (University of
Ulsan), Sihwan Lee (Seoul National University), Thi Tu Anh Bui (University
of Ulsan), Jong-Seok Lee (ILJIN Global Co., Ltd.), Heung Nam Han (Seoul
National University)
- PP1-044** A290 **Micro Machining of 3D Printed Steel Using PCD Pencil Grinding Tools**
Chan Young Yang (Soongsil University), Bo Hyun Kim (Soongsil
University), Dae Bo Shim (Soongsil University), Joon Phil Choi (Korea
Institute of Machinery & Materials), Segon Heo (Korea Institute of
Machinery & Materials), Min-Kyo Jung (Korea Institute of Machinery &
Materials)
- PP1-045** A294 **Development of Automatic Liquid Filling Machine in Chemical
Manufacturing Processes**
Junsik Lee (Changshin University), Jun Ho Lee (J-Mecha Tech)
- PP1-046** A298 **Effect of Cutting Depth on Surface Crack in Micro Machining of SiC**
Ju Hyeon Lee (Soongsil University), Bo Hyun Kim (Soongsil University),
Jihong Hwang (Seoul National University of Science & Technology)
- PP1-047** A303 **Tool Life Prediction Using Accumulated Power Consumption under
Varying Cutting Conditions**
Hae-Sung Yoon (Korea Aerospace University), Yong Ju Lee (Korea
Aerospace University)
- PP1-048** A308 **Coating Optimization of High Viscosity and Low Organic Binder Content
Alumina Slurry for 3D Printing**
Yu Jin Park (Korea Institute of Industrial Technology), Jong Wan Ko
(Korea Institute of Industrial Technology), Chung Soo Kim (Korea Institute
of Industrial Technology), Jeong Hong Ha (Korea Institute of Industrial
Technology), Dong Hyun Kim (Korea Institute of Industrial Technology),
Jun Yeong Park (Korea Institute of Industrial Technology)

POSTER 3

- PP1-049** A310 **Development of Lignin as a Filler for Digital Light Processing 3D Printing**
Yu Jin Park (Korea Institute of Industrial Technology), Jong Wan Ko (Korea Institute of Industrial Technology), Yoon Seong Joo (University of Ulsan)
- PP1-050** A311 **A Study on Filling Rate Prediction for Injection Molding Process of Composite Material with Artificial Intelligence**
Bon Sang Koo (Sungkyunkwan University), Sang Won Lee (Sungkyunkwan University), Inwoong Noh (Sungkyunkwan University), Hyewon Shin (Sungkyunkwan University), Junsoo Ahn (Sungkyunkwan University)
- PP1-051** A319 **Laser-based Additive Manufacturing of High-density Non-weldable Ni-based Superalloy**
Seungmuk Ji (SFS. Co., Ltd.), Sungwoo Bae (SFS. Co., Ltd.), Ho Yoon Kim (SFS. Co., Ltd.), Hyunji Kim (SFS. Co., Ltd.)
- PP1-052** A345 **Fabrication of Additive Manufacturable 3-dimensional Tactile Sensor**
In Hwan Lee (Chungbuk National University), Chaima Fekiri (Chungbuk National University), Hyo Eun Kim (Chungbuk National University), Ho-Chan Kim (Andong National University)
- PP1-053** A346 **Long Term Annealing Effect on the Microstructure and Mechanical Properties of Ferrite to Austenite Stainless Steel Dissimilar Additive Manufacturing**
Mahdi Aghaahmadi (Hanbat National University), Jeoung Han Kim (Hanbat National University), Giseung Shin (Korea Atomic Energy Research Institute), Woong Choo (Hanbat National University), Woohyeok Kim (Hanbat National University), Dae Whan Kim (Korea Atomic Energy Research Institute), Ji Hyun Yoon (Korea Atomic Energy Research Institute)
- PP1-054** A350 **Removal Modeling of Copper Considered with Temperature Function in CMP**
Yeongil Shin (Pusan National University), Haedo Jeong (Pusan National University), Seonho Jeong (Pusan National University), Jongmin Jeong (Pusan National University), Youngwook Park (Pusan National University)
- PP1-055** A355 **A 3D Bio-printed Breast Cancer Model for Personalized Medicine**
Jonghyeuk Han (UNIST), Hyun-Wook Kang (UNIST), Seunggyu Jeon (UNIST), Min Kyeong Kim (UNIST), Wonwoo Jeong (UNIST), James J. Yoo (Wake Forest Institute for Regenerative Medicine)
- PP1-056** A357 **A Study on Additive Manufacturing of Shear Mold Hot Stamping Parts**
Woo-Sung Kim (Korea Institute of Industrial Technology)

- PP1-057** A359 **Optimization on Processing Condition for Additive Manufactured Maraging Steel**
Sung Hwan Hong (Sejong University), Sung Yong Ha (Terraworks Co., Ltd.), Jaiyoung Cho (Hankook Tire & Technology Co., Ltd.)
- PP1-058** A366 **Operation and Protection Helmet for Military Dog by Design for Additive Manufacturing**
Hogi Ju (Korea Institute of Industrial Technology), Yong Son (Korea Institute of Industrial Technology), Woongbeom Heo (Korea Institute of Industrial Technology), Jinsoo Park (Korea Institute of Industrial Technology), Jin Su Jang (Army Consolidated Maintenance Depot), Kyoung-Ju Seo (Hanbat National University), Kyunsuk Choi (Hanbat National University)
- PP1-059** A375 **Microstructure Evolution and Mechanical Properties of Laser Dissimilar Welding between IN718 and STS630 and Ti6Al4V Using VCoNi-Medium Entropy Alloy as Interlayer**
Hadiseh Esmaeilpoor Shadmehani (Hanbat National University), Jeoung Han Kim (Hanbat National University), Chan Woong Park (Hanbat National University), Seok Su Sohn (Korea University)
- PP1-060** A379 **Research of Interface Microstructure and Mechanical Properties of 3D Printed Dissimilar 17-4PH and SKD61 Steels**
Woong Choo (Hanbat National University), Jeoung Han Kim (Hanbat National University), Gyunseok Choi (Hanbat National University), Cheol Woo Ha (Korea Institute of Industrial Technology), Si Mo Yeon (Korea Institute of Industrial Technology), Woongbeom Heogh (Hanyang University)
- PP1-061** A413 **Development of Technology for UAVs Infrared Spectroscopy System**
Jong-Gyun Kang (Hanbat National University), Geon-Hee Kim (Hanbat National University), Jimin Han (Kyung Hee University), Joong-Kyu Ham (Hanbat National University), Young-Tae Kwak (Hanbat National University), Seong-Hyeong Park (Hanbat National University)
- PP1-062** A417 **Automated Material Extrusion 3D Printing Using Electrodeposited Heating Bed**
Dong Geun Kim (KAIST), Sanha Kim (KAIST), Filippo Danilo Michelacci (KAIST, Politecnico di Milano)
- PP1-063** A426 **Implementation of Data Utilization System and Service Using Mold Injection Data**
Min Jae Ko (Korea Institute of Industrial Technology), Yong Ju Cho (Korea Institute of Industrial Technology)

- PP1-064** A440 **Orthogonal Cutting of Soda-lime Glass under Various Lubrication Conditions**
 Jihwan Kim (Korea Aerospace University), Hae-Sung Yoon (Korea Aerospace University)

7. Sustainable Technology

Lobby (B2)

- PP7-001** A056 **Laminar Flame Speed and Markstein Length of Propane-oxygen Mixtures**
 Woogyung Kim (Hiroshima University), Akihiro Ueda (Hiroshima University), Yangkyun Kim (Korea Institute of Civil Engineering & Building Technology)
- PP7-002** A101 **Development of Gait Events Detection Algorithm without Accurate Global Coordinate System**
 Jungyoon Kim (REMO Inc.), Hyeonseok You (REMO Inc.), Kun Ho Lee (REMO Inc.), Youngjin Moon (Asan Medical Center, University of Ulsan College of Medicine), Hasuk Bae (Ewha Womans University Mokdong Hospital), Eun Kyung Bae (REMO Inc.)
- PP7-003** A106 **Comparison of Neutralization Methods in Triboelectrostatic Separation of Plastic Mixture**
 Jongdeok Yoo (Korea University), Jaehwa Jeong (Korea University), Seong-Gu Kang (Korea University), Hajin Song (Korea University)
- PP7-004** A127 **Policy Review and Suggestions for Cutting Down Noise Complaints**
 Chulhwan Kim (Korea Expressway Co.), Hyejin Kang (Korea Expressway Co.), Woongyong Lee (Korea Expressway Co.)
- PP7-005** A139 **An Experiment on Cooling Performance according to Air-cooling Application of Pouch Battery Module**
 Gyu Young Cheon (Changwon National University), Heesung Park (Changwon National University), Jae Hun Choi (Changwon National University)
- PP7-006** A189 **Bio-reprinting for Fabrication of Micro-structured Tissue with High Resolution**
 Jae-Hun Kim (Tech University of Korea), Won-Soo Yun (Tech University of Korea), Chanhan Kang (Tech University of Korea), Jin-Hyung Shim (Tech University of Korea), Songwan Jin (Tech University of Korea)

- PP7-007** A193 **Electrochemical Performance Change in Response to Various Temperature Changes of Electrolyte for Positive Electrode of Vanadium Redox Flow Battery**
Dukhyung Kim (Changwon National University), Heesung Park (Changwon National University), Jungmyung Kim (Changwon National University)
- PP7-008** A253 **A Study on the Correlation between Direct Cooling of Lithium Polymer Battery and Cooling Performance according to Discharge Rate**
Jaehun Choi (Changwon National University), Heesung Park (Changwon National University)
- PP7-009** A264 **Biomechanical Stability Comparison for Angular Variation of the Femoral Neck Fracture Plane When Inserting a Femoral Neck System (FNS) Using the Finite Element Method**
Yoon Ji Lee (Dongguk University), Hong Seok Lim (Dongguk University), Sung Min Kim (Dongguk University)
- PP7-010** A270 **The Improvements of Dry Metal Forming Using CO₂ as Volatile Media**
Lihong Cai (University of Ulsan), Sung-Tae Hong (University of Ulsan), Shengwei Zhang (University of Ulsan), Kun Gao (University of Ulsan), Kun Gao (University of Ulsan), Meiling Geng (University of Ulsan)
- PP7-011** A273 **A Field Test for Data Correlation Analysis between Simple Fine Dust Measuring Instrument and Certified Fine Dust Measuring Instrument**
Hyejin Kang (Korea Expressway Co.), Chulhwan Kim (Korea Expressway Co.)
- PP7-012** A299 **Fatigue Life of a Thermoelectric Power Generation System under Thermal Cycling**
Seungik Shin (University of Science & Technology), Seungwoo Han (Korea Institute of Machinery & Materials), Da-hye Kim (University of Science & Technology), Seong-jae Jeon (Korea Institute of Machinery & Materials)
- PP7-013** A420 **Electrochemical Dioxidation of Titanium Using Molten Magnesium Chloride**
Uijun Go (Hanbat National University), Jeoung Han Kim (Hanbat National University), Kyoung-Tae Park (Hanbat National University), Hamid Reza Javadinejad (Hanbat National University), Namhun Kwon (Hanbat National University)

Special session - 2. High Precision Large Area Production Technology

Lobby (B2)

- S2-001** A313 **Health Indicator Optimization Algorithm based on Frequency Bands for Remaining Useful Life Prognosis of Bearings in Roll-to-roll Systems**
Myeonghwan Yeo (Konkuk University), Changwoo Lee (Konkuk University), Yoonjae Lee (Konkuk University)
- S2-002** A325 **Optimization Algorithm of Bearing Condition Diagnosis Model based on Feature Engineering**
Hyogeun Oh (Konkuk University), Changwoo Lee (Konkuk University), Yoonjae Lee (Konkuk University)
- S2-003** A326 **A Study on the Variation of Surface Properties between Substrate and Ink due to Operating Tension in Roll-to-roll Printed Electronics**
Minho Jo (Konkuk University), Changwoo Lee (Konkuk University), Jaehyun Noh (Konkuk University)
- S2-004** A362 **Design and Simulation of Preprogrammed Microfluidic System for Parallel Anti-reflection Coating by Layer-by-layer Assembly**
Emamul Kabir (Konkuk University), Sung-Jin Kim (Konkuk University), Zhenglin Li (Konkuk University)
- S2-005** A363 **Experimental Validation of Preprogrammed Microfluidic System for Parallel Anti-reflection Coating by Layer-by-layer Assembly**
Emamul Kabir (Konkuk University), Sung-Jin Kim (Konkuk University), Zhenglin Li (Konkuk University)
- S2-006** A374 **Optimization of R2R Slot-die Coating Process Parameters for Large-area Coating of Optically Clear Adhesive on Stretchable Substrate**
Horim Lee (Konkuk University), Dongjin Lee (Konkuk University), Youngwook Noh (Konkuk University), Geonhui Lee (Konkuk University)
- S2-007** A383 **Roll-to-roll (R2R) Gravure Printing on Hydrophobic TPU Substrate for Stretchable Device**
Geonhui Lee (Konkuk University), Dongjin Lee (Konkuk University), Youngwook Noh (Konkuk University), Horim Lee (Konkuk University)
- S2-008** A411 **Analysis of the Stress and Strain Distribution in the Transporting Thin Film of the Roll-to-roll Process Using Flexible Multi-body Dynamics**
Jun Lee (Konkuk University), Chang-wan Kim (Konkuk University), Jaewook An (Konkuk University)

- S2-009** A412 **Thermal-Structural Analysis of MLCC Manufacturing Process for Residual Stress**
Jaewook An (Konkuk University), Chang-wan Kim (Konkuk University),
Dongwook Seo (Konkuk University)

[Online] Poster Presentation

20-22 July, Whole 3days



1. Manufacturing Processes

Online (MP4)

- | | | |
|----------------|------|---|
| PP1-065 | A009 | <p>Load-balanced Bin Packing System with Deep Reinforcement Learning
Jeongwon Pyo (Sungkyunkwan University), Kwang-Hee Lee (Korea Institute of Industrial Technology), Sang-Jun Lee (Korea Institute of Industrial Technology), Tae-Yong Kuc (Sungkyunkwan University)</p> |
| PP1-066 | A021 | <p>Cutting Mechanism, Machined Surface Integrity and Multi-objective Optimisation Following Machining of Glass Fibre-reinforced Honeycomb Composites
Chunliang Kuo (National Taiwan University of Science & Technology), Tingyu Chang (National Taiwan University of Science & Technology), Weiquan Lai (National Taiwan University of Science & Technology)</p> |
| PP1-067 | A039 | <p>Precision Cold Forging Punch Manufacturing Technology Research Using Metal Additive Manufacturing
Myoung Pyo Hong (Korea Institute of Industrial Technology)</p> |
| PP1-068 | A059 | <p>Grinding Motion Model for a Spherical Polishing Plate Used in Glass Lens Polishing Process
Hsin-Yu Chiang (National Tsing Hua University), Yi-Huei Chen (National Tsing Hua University), Chun-Wei Liu (National Tsing Hua University)</p> |
| PP1-069 | A060 | <p>Modified Material Removal Prediction Model for Hard Polishing Process of Silicon Carbide Wafer based on Support Vector Machine
Yu-Hsiang Lo (National Tsing Hua University), Shih-Chieh Lin (National Tsing Hua University), Chun-wei Liu (National Tsing Hua University)</p> |
| PP1-070 | A062 | <p>Automation Strategy for Magnetic Field-assisted Single Point Incremental Forming
David Skelton (University of Florida), Hitomi Yamaguchi (University of Florida), Zixi Shi (University of Florida), Adnan Muhammad (University of Palermo), Gianluca Buffa (University of Palermo), Livan Fratini (University of Palermo)</p> |

- PP1-071** A067 **Experimental Investigation and Failure Analysis of Thermoplastic PLA Self-healing Composites under Low-velocity Impact**
Venkata Chalapathi Kadapa (Changwon National University), Jung-il Song (Changwon National University)
- PP1-072** A072 **Effective Optimization based on Equilibrium Optimizer for Dynamic Cutting Force Coefficients of End-milling Process**
Minh-Quang Tran (National Taiwan University of Science & Technology), Mahmoud Elsisi (National Taiwan University of Science & Technology), Viet Q. Vu (Thai Nguyen University of Technology), Meng-Kun Liu (National Taiwan University of Science & Technology), Tien-Dat Hoang (Thai Nguyen University of Technology), Lien T. Vu (Phenikaa University)
- PP1-073** A107 **Anomaly Detection Framework for Univariate Periodic Time Series with Labeled Data**
Kio Yun (Korea University), Jun-Geol Baek (Korea University), Yeojin Jeon (Korea University), Yeseul Lee (Korea University)
- PP1-074** A151 **Utilizing Lenticular Lens Array for Collimation Film Development on Direct-lit Backlight Module**
Bo-Ting Chen (National Taiwan University of Science & Technology), Ding-Zheng Lin (National Taiwan University of Science & Technology), Zi-Jain Zhang (National Taiwan University of Science & Technology)
- PP1-075** A163 **Studying Anisotropic Material Behavior of Single Crystal Yttria Stabilized Zirconia during Ultra-precision Machining**
Dae Nyong Kim (University of Wisconsin-Madison), Sangkee Min (University of Wisconsin-Madison), Suk Bum Kwon (University of Wisconsin-Madison), Aditya Nagaraj (University of Wisconsin-Madison)
- PP1-076** A165 **Investigation on Residual Stress and Subsurface Damage on 2-step Machining of Single Crystal Sapphire**
Aditya Nagaraj (University of Wisconsin-Madison), Sangkee Min (University of Wisconsin-Madison), Suk Bum Kwon (University of Wisconsin-Madison), Dalei Xi (University of Cincinnati), Yiyang Du (University of Cincinnati), Woo Kyun Kim (University of Cincinnati)
- PP1-077** A169 **Conformal Additive Manufacturing of Binder-coated Zirconia Using Material Extrusion**
Bipendra Basnet (The University of Akron), Jae-Won Choi (The University of Akron), Rui Huang (The University of Akron)

- PP1-078** A171 **Additive Manufacturing of Lithium Based Solid Polymer Electrolytes Using Direct Print Photopolymerization**
Bharath Reddy A. R. (The University of Akron), Jae-Won Choi (The University of Akron), Huunsang Lee (The University of Akron), Jisoo Jeong (The University of Akron), Thein Kyu (The University of Akron)
- PP1-079** A182 **A Real-time Measurement of the Bending Deformation in V-bending Using Machine Vision**
Eunbeen Mok (Seoul National University of Science & Technology), Changwhan Lee (Seoul National University of Science & Technology), Wanjin Chung (Seoul National University of Science & Technology)
- PP1-080** A188 **Point Cloud Based Representations Learning for Wafer Pattern Recognition in Semiconductor Fabrication Process**
Seunghwan Song (Korea University), Jun-Geol Baek (Korea University)
- PP1-081** A200 **Numerical Study on Forming Process of Independent Suspension Devices Component Part for Flash Reduction**
Seung Jae Lee (Korea Institute of Industrial Technology), Jiwoo Park (Korea Institute of Industrial Technology), Min Soo Kim (Korea Institute of Industrial Technology)
- PP1-082** A207 **Ground Subsidence Susceptibility Map Generation Using Machine Learning**
Jun Hwan Park (Korea University), Duhwan Mun (Korea University)
- PP1-083** A213 **Nip Pressure Distribution Control for Large-area Roll-to-roll Nanoimprint Lithography Process**
Truong Sinh Nguyen (Sungkyunkwan University), Kyunghoon Kim (Sungkyunkwan University), Seung-Hyun Lee (Korea Institute of Machinery & Materials), Sin Kwon (Korea Institute of Machinery & Materials), Kyung-Rok Kim (Korea Institute of Machinery & Materials), Pyoungwon Park (Korea Institute of Machinery & Materials)
- PP1-084** A243 **Conductive Graphene-carbon Nanotube Compositing into Silicone for 3D Printing**
Zheng-Lin Chen (National Kaohsiung University of Science & Technology), Chin-Tai Chen (National Kaohsiung University of Science & Technology)
- PP1-085** A249 **Multi-Encoder Memory Networks for Multivariate Time Series Anomaly Detection**
Yujin Lee (Korea University), Jun-Geol Baek (Korea University)

- PP1-086** A254 **Hierarchical Decomposition and Period-based Segmentation for Time Series Anomaly Detection**
Ye Seul Lee (Korea University), Jun-Geol Baek (Korea University)
- PP1-087** A276 **Investigation of Optimization Method of Layer Thickness and Stand-off Distance Using DED Process**
Kwang Kyu Lee (Chosun University), Dong-Gyu Ahn (Chosun University), Kang Jae Lee (DN Solutions), Ah Jin Sim (DN Solutions)
- PP1-088** A302 **A Feature Selection Method Using FFT Analysis to Improve Performance of the Cutting Force Estimation Models**
Hyein Kim (Korea Institute of Industrial Technology), Soohyun Nam (Korea Institute of Industrial Technology), Jeongin Koo (Korea Institute of Industrial Technology)
- PP1-089** A314 **Thermal Analysis of Directed Energy Deposition Process by Finite Volume Method**
Santhosh Senguttuvan (Sungkyunkwan University), Sang Won Lee (Sungkyunkwan University), Sung-Min Kim (Sungkyunkwan University)
- PP1-090** A320 **Effects of the Spray Parameters in Morphological Changes of Cellulose Nanofiber/Carbon Nanotube Composite Coatings and Its Influence in Electroconductive Properties**
Jeyoung Jung (Korea Institute of Industrial Technology), Chang Kee Lee (Korea Institute of Industrial Technology), Gyeheon Kim (Sungkyunkwan University), Eunae Shin (Korea Institute of Industrial Technology)

2. Machine Tools & Systems

Online (MP4)

- PP2-014** A036 **Latent Image Sample Processing Using Machining Center**
Toru Yamamoto (National Institute of Technology, Oita College), Rie Kunimune (National Institute of Technology, Oita College)
- PP2-015** A295 **CNN-based Single-type Defect Fusion Network for Mixed-type Defects Pattern Recognition on Wafer Bin Maps**
Yunseon Byun (Korea University), Jun-Geol Baek (Korea University)

3. Automation, Measurement & Control

Online (MP4)

- PP3-036** A047 **Data Augmentation Using Attention Module for Infrared Object Detection**
Jinwoo Cho (Korea Army Academy at Yeongcheon), Jihyuk Park (Yeungnam University), Ji-Il Park (KAIST)
- PP3-037** A052 **Deep Convolutional Neural Network-based Surface Defect Detection for Wafer**
Sankarsan Mohanty (National Taipei University of Technology), Chao-Ching Ho (National Taipei University of Technology), Shou-Lin Chu (National Taipei University of Technology)
- PP3-038** A091 **Control Characteristics of a Mechanically-driven Gas Pressure Controller and Its Application to Precision Pneumatic Temperature Control**
Cheongyong Park (Pukyong National University), Wukchul Joung (Pukyong National University), Bomi Nam (Pukyong National University)
- PP3-039** A092 **Thermographic Investigation of Heat Spreading Characteristics of a Vapor Chamber-type Heat Spreader**
Jaehyuk Jeong (Pukyong National University), Wukchul Joung (Pukyong National University), Sujin An (Pukyong National University)
- PP3-040** A096 **The Rollover Stability of a Narrow Vehicle with Chassis Tilting System**
Woon Ryong Kim (Korea University), Jae Kyung Shim (Korea University)
- PP3-041** A174 **Contact Detection Using Electrical Breakdown for Ultra-precision Machining**
Shodai Yamada (University of Wisconsin-Madison), Sangkee Min (University of Wisconsin-Madison), Zach Lowery (University of Wisconsin-Madison)
- PP3-042** A225 **Dataset for Recognizing Special Lines in Image Format P&ID with RetinaNet**
Yoochan Moon (Korea University), Duhwan Mun (Korea University), Seung-Tae Han (Korea University)
- PP3-043** A236 **Real-Time Defect Monitoring of Laser Micro-drilling Using Reflective Light and Machine Learning Models**
Yong-Kwan Lee (Tech University of Korea), Su-Min Lee (Reshenie Co., Ltd.), Sung-Hwan Kim (21st Century Co., Ltd.)

- PP3-044** A297 **Acoustic Reflection Classification of PVDF Sensor Using Convolutional Neural Network**
 Ju-Heon Lee (Hanyang University), Seoung-Hwan Lee (Hanyang University), Hyo-Jeong Kim (Hanyang University), Sin-Yeop Lee (Hanyang University), Hyung-Jin Park (Hanyang University), Hee-Hwan Lee (Hanyang University)
- PP3-045** A333 **Morphology Operation and Object Recognition Algorithm of Induction Thermography Based LSM**
 Seungju Lee (Kongju National University), Wontae Kim (Kongju National University), Yoonjae Chung (Kongju National University)
- PP3-046** A364 **Analysis of IR Strength Behavior according to Distance to Minimize Depth Camera Error**
 Jinwoo Jang (Dongguk University), Min-Woo Han (Dongguk University)

4. Materials & Design

Online (MP4)

- PP4-048** A068 **Natural-additive as Supportive Reinforcement to Hybrid Fiber Thermoplastic for Improved Mechanical, Thermal and Flame Retardant Properties of Hybrid Composites**
 Thanh Mai Nguyen Tran (Changwon National University), Jung-il Song (Changwon National University)
- PP4-049** A083 **A New Simple Method for Deriving a Flow Stress Curve in High Strain Region**
 Sung-Min Lee (Korea Institute of Industrial Technology), Sang-Kon Lee (Korea Institute of Industrial Technology), In-Kyu Lee (Korea Institute of Industrial Technology), Sung-Yun Lee (Korea Institute of Industrial Technology), Sun-Kwang Hwang (Korea Institute of Industrial Technology), Myeong-Sik Jeong (Korea Institute of Industrial Technology), Chang-Young Choi (Korea Institute of Industrial Technology), Young-Hoon Moon (Pusan National University)
- PP4-050** A095 **Property Scaling of Bio-composite with Polycaprolactone (PCL) and Dimethyl Sulfone (DMSO₂)**
 Jae-Won Jang (Portland State University), Sung Yi (Portland State University), Kyung-Eun Min (Portland State University), Jesik Shin (Korea Institute of Industrial Technology), Cheolhee Kim (Portland State University)

Online

- PP4-051** A176 **CFD Analysis of Inclined Slider Bearing with Multi-grooves**
In-Gyu Jang (Gyeongsang National University), Tae-Jo Park (Gyeongsang National University), Jeong-Guk Kang (Gyeongsang National University)
- PP4-052** A219 **Electric Conductive Ink based of Cellulose Nanofibers and Carbon Nanotubes for Printing Process**
Eun Ae Shin (Korea Institute of Industrial Technology), Chang Kee Lee (Korea Institute of Industrial Technology), Jeyoung Jung (Korea Institute of Industrial Technology)
- PP4-053** A388 **Light-weight Optimization of Belt in Seat Frame for Autonomous Vehicles**
Won Seok Seok (Kongju National University), Euysik Jeon (Kongju National University), Yeongjo Ju (Kongju National University), Seung Pyo Hong (DST)
- PP4-054** A389 **Characteristic Analysis of Microwave Thermal Plasma on Atmospheric according to the Design Parameters of Swirl Torch**
Jaekyung Kim (Kongju National University), Euysik Jeon (Kongju National University)
- PP4-055** A390 **Analysis of Mechanical Properties according to Reinforcement Pattern for Layered Composites**
Yoona Park (Kongju National University), Euysik Jeon (Kongju National University), Dongseok Shin (Kongju National University), Haneul Lee (Daeli Industrial Co., Ltd.), Seungmin Cha (Alga Co., Ltd.)
- PP4-056** A416 **Optimal Design of Reinforcement Pattern for Layered Composite of Specific Strength**
Dong-Seok Shin (Kongju National University), Euysik Jeon (Kongju National University)

5. Micro/Nano Technology

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- PP5-017** A108 **Investigation of Friction Behavior of Patterned Surface under Lubrication Condition**
Jae-Ho Han (Yonsei University), Dae-Eun Kim (Yonsei University), Joo-Yong Yoon (Yonsei University), Seon-Kyo Kim (Samsung Electronics Co., Ltd.), Ja-Hyun Nam (Samsung Electronics Co., Ltd.)

- PP5-048** A071 **Optimization on the Fabrication Parameter of Core-shell PLA Nanofibers for Self-healing Composites**
Mohamad Tarmizie Bin Hassim (Changwon National University), Jung-il Song (Changwon National University)
- PP5-049** A075 **A Study on Mechanical Properties of Micro/Nano Surface Polished Diaphragm Plates for Hydrogen Gas Compressor**
Sung-Jun Lee (Chosun University), Chang-Lae Song (Chosun University)
- PP5-050** A099 **Determination of the Poisson's Ratio of a Metallic Thin Film Using the Picosecond Ultrasonics**
Yun Young Kim (Chungnam National University)
- PP5-051** A109 **Investigation of Nanoscale Wear of Thin Film Coatings Using an AFM**
Young Chan Jung (Yonsei University), Dae-Eun Kim (Yonsei University), Yuzhen Liu (Yonsei University)
- PP5-052** A154 **Ag Microplasma-engineered Nanoassemblies on a Low-cost Periodic Nanostructure for Surface-enhanced Raman Scattering**
Zhuo-Fu Wang (National Taiwan University of Science & Technology), Ding-Zheng Lin (National Taiwan University of Science & Technology)
- PP5-053** A262 **Micro Electrical Discharge and Electrochemical Machining of Stainless Steel Using the Same Electrode**
Noritaro Kasamo (Keio University), Jiwang Yan (Keio University)
- PP5-054** A343 **Dynamics of Compound Droplet with Different Viscosities on Non-wettable Macrostructure**
Sungchan Yun (Korea National University of Transportation), Guk Hee Kim (Korea National University of Transportation), Jaeung Kim (Korea National University of Transportation)
- PP5-055** A344 **Bouncing Dynamics of Viscous Droplet with Noncircular Footprint on Superhydrophobic Ridged Surface**
Sungchan Yun (Korea National University of Transportation)

6. New and Renewable Energy

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- PP6-021** A132 **Shaft Damage Load of NREL 5 MW Wind Turbine for Natural Frequency of LPF**
Chae Wook Lim (Hanbat National University)
- PP6-022** A268 **Hole Transport Layer Films of Two-dimensional Nanomaterials for Organic Solar Cells**
Ya-Han Lee (National Kaohsiung University of Science & Technology),
Chin-Tai Chen (National Kaohsiung University of Science & Technology),
Xuan-Min Hu (National Kaohsiung University of Science & Technology)
- PP6-023** A347 **On the Water Bubbling for Stability Enhancement of Reformate Gas-fueled Low-temperature Solid Oxide Fuel Cell with Nickel Thin-film Anode**
Sang Hoon Ji (Korea Institute of Civil Engineering & Building Technology),
Weon Jae Kim (Korea Institute of Civil Engineering & Building Technology),
Sangjong Han (Korea Institute of Civil Engineering & Building Technology),
Seokhun Jeong (Soongsil University), Taehyun Park (Soongsil University)

7. Sustainable Technology

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- PP7-014** A161 **Real-time Fault Identification System for a Retrofitted Ultra-precision CNC Machine from Equipment's Power Consumption Data: A Case Study of an Implementation**
Sangkee Min (University of Wisconsin-Madison), Vignesh Selvaraj (University of Wisconsin-Madison)
- PP7-015** A191 **Sustainable High-performing Hybrid Eco-thermoset Matrix Blended from Non-phosphorylated Epoxidised Corn Oil and Vinyl Ester Resin**
Maurelio Jr Cabo (Changwon National University), Jung-il Song (Changwon National University)
- PP7-016** A226 **Estimating Human Body Measurement from Rendered Human Mesh Image with Deep Learning**
Hyeonseok You (REMO Inc.), Jaesoon Choi (University of Ulsan), Eun Kyung Bae (REMO Inc.)
- PP7-017** A391 **Recovering Carbon Fiber from Carbon-fiber-reinforced Polymers by Microwave Irradiation**
Sangjun Jeon (Kongju National University), Daejong Yang (Kongju National University), Youngsoo Ko (Kongju National University)

Special session - 3. Multidisciplinary Research & Mechatronics for Aero/Defense Applications

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- S3-001** A048 **Flash-enhanced Magneto-mechano-triboelectric Energy Harvester for Self-powered Optogenetic Brain Neuromodulation System**
 Yeon Uk Kim (Kumoh National Institute of Technology), Jung Hwan Park (Kumoh National Institute of Technology), Ui Yeon Nam (Kumoh National Institute of Technology), Yu Mi Woo (Kumoh National Institute of Technology), Yun Sik Hwang (Kumoh National Institute of Technology), Jae Chan Heo (Kumoh National Institute of Technology)
- S3-002** A049 **Transversally Extended Plasmonic Laser Nanowelding of Copper Nanoparticles for Flexible Touch Screen Panel**
 Yun Sik Hwang (Kumoh National Institute of Technology), Jung Hwan Park (Kumoh National Institute of Technology), Yeon Uk Kim (Kumoh National Institute of Technology), Ui Yeon Nam (Kumoh National Institute of Technology), Yu Mi Woo (Kumoh National Institute of Technology), Jae Chan Heo (Kumoh National Institute of Technology)
- S3-003** A050 **Flashlight-induced Plasmonic Nanowelding of Silver Nanowires for Transparent Piezoelectric Energy Harvester**
 Jae Chan Heo (Kumoh National Institute of Technology), Jung Hwan Park (Kumoh National Institute of Technology), Ui Yeon Nam (Kumoh National Institute of Technology), Yun Sik Hwang (Kumoh National Institute of Technology), Yu Mi Woo (Kumoh National Institute of Technology), Yeon Uk Kim (Kumoh National Institute of Technology)
- S3-004** A053 **Stretchable Cu Electrode with High Conductivity Enabled by Millisecond Flashlight Irradiation**
 Yu Mi Woo (Kumoh National Institute of Technology), Jung Hwan Park (Kumoh National Institute of Technology), Yeon Uk Kim (Kumoh National Institute of Technology), Ui Yeon Nam (Kumoh National Institute of Technology), Yun Sik Hwang (Kumoh National Institute of Technology), Jae Chan Heo (Kumoh National Institute of Technology), Ji Yong Shim (Kumoh National Institute of Technology)

- S3-005** A054 **Flash-induced Plasmonic Cu Nanowelding for Flexible and Transparent Electronics**
Ui Yeon Nam (Kumoh National Institute of Technology), Jung Hwan Park (Kumoh National Institute of Technology), Yu Mi Woo (Kumoh National Institute of Technology), Yeon Uk Kim (Kumoh National Institute of Technology), Jae Chan Heo (Kumoh National Institute of Technology), Yun Sik Hwang (Kumoh National Institute of Technology), Eun Jeong Um (Kumoh National Institute of Technology)
- S3-006** A214 **Modeling and Simulation of Hybrid Annular Radial Magneto-rheological Fluid Damper for Electric Vehicle**
Olivier Munyaneza (Kumoh National Institute of Technology), Jung Woo Sohn (Kumoh National Institute of Technology)
- S3-007** A220 **A Novel Active Cooling System with Shape Memory Alloy Based Thermostat for Internal Combustion Engine**
Pacifique Turabimana (Kumoh National Institute of Technology), Jung Woo Sohn (Kumoh National Institute of Technology)
- S3-008** A338 **DEM Using Analysis on the Correlation between the Shape of Toothbrush Bristle Bundles and the Amount of Wear of a Simplified Tooth Model on NCCLs (Non-carious Cervical Lesions)**
Seoungjun Lee (Kumoh National Institute of Technology), Junyoung Park (Kumoh National Institute of Technology)
- S3-009** A368 **Characterization of Strain Sensitive Response of Laser Sintered Silver Nanoparticles**
Hye-Su Jo (Kumoh National Institute of Technology), Gil-Yong Lee (Kumoh National Institute of Technology), Ji-Su Park (Kumoh National Institute of Technology), Ha-Yoon Lim (Kumoh National Institute of Technology)
- S3-010** A369 **Performance Evaluation of a Soft Gripper based on Shape Memory Alloy (SMA) Wire Embedded Woven Textile Soft Composite**
Oybek Tuyboyov (Kumoh National Institute of Technology), Gil-Yong Lee (Kumoh National Institute of Technology), Geo-Sung Lee (Kumoh National Institute of Technology)
- S3-011** A384 **DEM Analysis of Coverage Prediction by Change of Control Cage Hole Shape of Impeller-typed Shot Blaster**
Hyeryeon Seo (Kumoh National Institute of Technology), Junyoung Park (Kumoh National Institute of Technology)