Winners of Awards at PRESM 2023

Winners of Best Paper Award

Determination of Joint Defects in Copper Tube Induction Heating Brazing Area Using Infrared Thermal Image based on CNN Algorithm

> *by *Chung Woo Lee(Korea Institute of Industrial Technology), Seok Jae Lee(Chonbuk National University), In Ju Kim(Korea Institute of Industrial Technology), Ji Sun Kim(Korea Institute of Industrial Technology)*

Piezoelectric Stretchable Sensor with a Vertical-wavy Structure Fabricated by Combining Dip Coating and Micro-corrugation process

> *by *Michitaka Yamamoto, Naoto Tomita, Seiichi Takamatsu, Toshihiro Itoh (The University of Tokyo)*

Winners of Young Researcher Award

Naoji Matsuhisa *(The University of Tokyo, Japan)*

Yingjun Quan *(Seoul National University, Korea)*

Yuta Kurashina *(Tokyo University of Agriculture and Technology, Japan)*

Jungsoo Nam *(Korea Institute of Industrial Technology, Korea)*

Jisoo Kim *(Kyungpook National University, Korea)*

Jhao-Yu Guo *(National Taiwan University of Science and Technology, Taiwan)*

Winners of Outstanding Presenter Award

Parallel Expansion of Projection-based 3D Printer through Optical Expansion

> *by Brian Lee, Minsung Kim (Sungkyunkwan University)*

Maskless Micropatterning of Polydopamine for Versatile Surface Functionalization

> *by Xenia Knigge, Jörg Radnik (Federal Institute for Materials Research and Testing (BAM)), Heinz Sturm, Ievgeniia Topolniak (Physical and Chemical Analysis of Polymers, Federal Institute for Materials Research and Testing (BAM))*

Nano-fabricated Solid Oxide Fuel Cells for Future Mobility Applications

> *by Yoon Ho Lee (University of Ulsan)*

Vehicle-to-grid and its Optimal Dispatch Control for Grid Load Balancing

> *by Jongwoo Choi, Wan-Ki Park (Electronics and Telecommunications Research Institute)*

Management of Temperature Coefficient of Resistance of Carbon Composite by Controlling Filler Alignment

> *by Sung-Hoon Park, Hyunwoo Kim, Ji-Hwan Ha (Soongsil University)*

Microneedle Array Patch (MAP): The Promising Biomedical Device for Total Personal Healthcare

> *by Jongho Park, Beomjoon Kim (The University of Tokyo)*

From Discrete to Continuous Production in Hydrogen Technology

> *by Toni Voebel, Daniel Zontar, Christian Brecher (Fraunhofer Institute for Production Technology IPT)*

A Study on Optimization of Directed Energy Deposition Process for Multi-layered Thin Wall Structure

> *by Seungwoo Paek, Kyumin Kim, Hyewon Shin, Sang Won Lee (Sungkyunkwan University)*

A Study on the Change in Surface Characteristics during Ultra-precision Grooving Pattern Machining of Germanium

> *by Joong Kyu Ham, Geon Hee Kim, Jong Gyun Kang, Seong Hyeon Park, Tae Sik Myung, Young Duk Park (Hanbat National University)*

Fabrication of Vitreous Carbon Mold for Chalcogenide Wafer Scale Lens Array

> *by Young Kyu Kim, Muzahir Ali, Seongmin Lee (Chung-Ang University), Hongmin Kim, Su-ho Ahn (Goodpnc Co. Ltd.), Seok-min Kim (Chung-Ang University)*

Cycle Time Prediction for 5-axis CNC Machine Using Tool Path Generation Model

> *by Joon-Soo Lee (Yonsei University), Chan-Young Lee (Korea Institute of Machinery and Materials), Soon-Hong Hwang, Byung-Kwon Min (Yonsei University)*

Automated Detection and Removal System of Foreign Objects in Tire

> *by Sae Jin Park, Sung-Hoon Ahn, Su-Young Park, Dohyeon Kim (Seoul National University)*

Recognition of Dead Fish Using StrongSORT Multi-object Tracking Algorithm in Sea Cage Aquaculture

> *by Tatiana Keruzel, Jung-Ho Kang, Kyung-Chang Lee (Pukyong National University)*

Point Cloud Labeling Method for Estimating Drivable Areas in Off-road Environments

> *by Seung-Tae Han, Yoochan Moon, Duhwan Mun (Korea University)*

Humanoid Robot Control Using Computer Vision and Digital Twin

> *by Bumjin Kim, Seok Kim, Young Tae Cho (Changwon National University)*

Influence of The Plasma Process Parameters on the Microstructure, Hardening, and Wear Behavior of Cold Work Steel via Atmospheric Pressure Plasma Nitriding

> *by Jhao-Yu Guo (National Taiwan University of Science and Technology), Kun-Cheng Ke (National Taiwan Normal University), Song-Yu Chen, Ming-Chun Tsai, Yu-Lin Kuo (National Taiwan University of Science and Technology)*

Coating Defect Detection of Roll-to-Roll Manufacturing System on Vision Image with Color Selection Method

> *by Yoonjae Lee, Haemi Lee, Hojin Jeon, Changwoo Lee (Konkuk University)*

Bio Inspired Suction Cup Gripper Specialized for Gripping Flat and Brittle Objects

> *by Ginwoo Pyo, Yongjai Park (Kangwon National University)*

Magnetically Responsive Artificial Cilia Self-Assembled with Magnetic Particles

> *by Minsu Kang, Hoon Eui Jeong (Ulsan National Institute of Science and Technology)*

Study on Oil-in-oil Droplet Generation based on Flow-focusing Geometry Using EHD Micropumps

> *by Taiki Otomo, Akihiro Yasuda, Siqi Peng (Tokyo Institute of Technology), Kazuhiro Yoshida, Joon-wan Kim (Institute of Innovative Research (IIR), Tokyo Institute of Technology)*

Simultaneous Generation of Monodisperse Droplets with Two Different Sizes Using Highaspect-ratio Asymmetric Cross-sectional Channel

> *by Youngseo Cho, Younghak Cho (Seoul National University of Science and Technology)*

Fabrication of Electrospun Polycaprolactone (PCL) Substrate for Colorimetric Bio-assay

> *by Chensong Xu, Gwenael Bonfante, Jongho Park, Vincent Salles, Beomjoon Kim (The University of Tokyo)*

Hybrid Biofabrication Technique to Fabricate Innervated in vitro Gut Models

> *by Hohyeon Han, MinJi Kim, Yoo-mi Choi, Uijung Yong, Jinah Jang (Pohang University of Science and Technology)*

Development and Biomechanical Evaluation of Expansion-type Anchors for Anterior Cruciate Ligament Reconstruction

> *by Il Won Suh, Se Rim Jang, Jeesoo Park, Sun Hee Cho, Cheol Sang Kim (Chonbuk National University)*

All-aerosol-sprayed High-performance Transparent Triboelectric Nanogenerator with Embedded Charge-storage Layer for Self-powered Invisible Security IoT System and Raindrop-solar Hybrid Energy Harvester

> *by BaekGyu Kim, Jin Yeong Song, Do Young Kim, Min-cheol Kim (Pusan National University), Zong-Hong Lin (National Tsing Hua University), Dongwhi Choi (Kyung Hee University), Sang Min Park (Pusan National University)*

Numerical Investigation on the Mitigation Performance of Droplet Transmission Using New Airflow Design in the High-speed Train

> *by Sungho Yun, Jae-Chul Kim, Jeeha Lee, Hong-Kyu Jeon (Korea Railroad Research Institute)*

A Study on the Sway Motion of Ropeway Facilities Remote Inspection Robots Using Dynamic Analysis

> *by Hyeonjae Jeong, Hyunbin Park, Hyeongyeong Jeong, Minjae Kim, Woohyeon Ahn, Jaewon Choi, Eunbyeol Jang, Baeksuk Chu (Kumoh National Institute of Technology)*