40th MATADOR Conference

8-10 July 2019, Hangzhou, China

Venue: Sailing International Hotel

Conference Programme Schedule

Day 1 (Monday, 8 July 2019)

8:00-8:30	Registration
8:30-9:00	Welcome and Opening Location: Qihang Hall (Building C, 1st Floor)
9:00-9:20	Photograph and Tea break
9:20-11:50	Plenary Keynote Session Location: Qihang Hall (Building C, 1st Floor)
12:00-13:30	Lunch and break Location: Huansha Room-A（Building A, 1st Floor） Or Moon Bay Restaurant（Building B, 1st Floor)
13:30-16:40	Plenary Keynote Session Location: Qihang Hall (Building C, 1st Floor)
16:40-18:10	The Yangtze River Delta International Intelligent Manufacturing Summit Forum Location: Qiming Room (Building A, 2nd Floor)
18:30-20:30	Banquet Location: Qihang Hall (Building C, 1st Floor)

Day 2 (Tuesday, 9 July 2019)

LPAM: Laser Processing and Additive Manufacturing
MPT: Machining Processes and Technologies
WJ: Welding and Joining
DC: Design and Control
FALM: The 6th Forum of Advanced Laser Manufacturing
Parallel Session Room 1 (R-1): Qihang Hall (Building C, 1st Floor)
Parallel Session Room 2 (R-2): Qiming Room (Building A, 2nd Floor)
Parallel Session Room 3 (R-3): Qiyuan Room (Building A, 3rd Floor)
Parallel Session Room 4 (R-4): Huansha Room-B (Building A, 1st Floor)
Tea break location: Qihang Hall (Building C, 1st Floor)

Parallel Sessions:

8:30-10:10	FALM-1 Location: R-1	LPAM-1 Location: R-2	MPT-1 Location: R-3	DC-1 Location: R-4
10:10-10:30	Tea break			
10:30-12:00	FALM-2 Location: R-1	LPAM-2 Location: R-2	MPT-2 Location: R-3	DC-2 Location: R-4
12:00-13:30	Lunch and break Location: Huansha Room-A（Building A,1st floor） Or Moon Bay Restaurant （Building B,1st floor)			
13:30-15:10	FALM-3 Location: R-1	LPAM-3 Location: R-2	MPT-3 Location: R-3	WJ-1 Location: R-4
15:10-15:30	Tea break			
15:30-17:00	FALM-4 Location: R-1	LPAM-4 Location: R-2	MPT-4 Location: R-3	WJ-2 Location: R-4
17:30-18:30	Dinner Location: Huansha Room-A (Building A,1st floor) Or Moon Bay Restaurant (Building B,1st floor)			

Day 3 (Wednesday, 10 July 2019)

8:30-10:10	FALM-5 Location: R-1	LPAM-5 Location: R-2	MPT-5 Location: R-3	WJ-3 Location: R-4
10:10-10:30	Tea break			
10:30-12:10	FALM-6 Location: R-1	LPAM-6 Location: R-2	The University of Manchester LPRC Alumni Forum Location: R-3 From 10:00 to 12:00	
12:00-13:30	Lunch and break Location: Huansha Room-A (Building A,1st floor) Or Moon Bay Restaurant (Building B,1st floor)			
14:00-16:00	Plenary Keynote Session Location: Qihang Hall (Building C, 1st Floor)			
16:00–16:20	Tea break			
16:20–17:00	Closing Ceremony Location: Qihang Hall (Building C, 1st Floor)			
17:30-18:30	Dinner Location: Huansha Room-A (Building A,1st floor) Or Moon Bay Restaurant (Building B,1st floor)			

Day 1 (Monday, 8 July 2019)

8:00-8:30	Registration
8:30-9:00	Welcome and Opening (Chair: *Professor Jianhua Yao*) Location: Qihang Hall (Building C, 1st Floor) 1. *Professor Paulo Bartolo* Chair of 40th MATADOR Conference 2. *Professor Yuanqiang Cai* Secretary of Zhejiang University of Technology 3. *Professor Youliang Wang* Director of Laser Processing Committee of COS 4. *Mrs. Ping Luo* Chair of The Yangtze River Delta Association Deputy Director of Science Technology Department of Anhui Province 5. *Mr. Yingzhong Gao* Deputy Director of Science Technology Department of Zhejiang Province 6. *Mr. Xiujun Cai* Vice Chair of Zhejiang Provincial Committee of the Chinese People's Political Consultative Conference
9:00-9:20	Photograph and Tea break
9:20-11:50	Plenary Keynote Session 1 Chair: *Professor Paulo Bartolo*
9:20-9:50	Keynote 1: Professor Jianrong Tan Member of Chinese Academy of Engineering, Zhejiang University, China ***Key Technology of Digital Twin and Its Application in Complex Equipment***
9:50-10:20	Keynote 2: Professor Paul Shore Fellow of Royal Academy of Engineering, Director of Engineering, National Physical Laboratory, UK ***Creating Advanced Machinery for the 4th Industrial Revolution***
10:20-10:50	Keynote 3: Professor Jyoti Mazumdar Member of National Academy of Engineering, University of Michigan, USA ***Quality Reliable Intelligent Additive Manufacturing***
10:50-11:20	Keynote 4: Professor Lin Li Fellow of Royal Academy of Engineering, Director of Laser Processing Research Centre,

	The University of Manchester, UK ***Additive Manufacture of 3D Multi-Material and Functionally Graded Components using Innovative Multiple Jet Laser Powder Bed Fusion***
11:20-11:50	Keynote 5: Professor Volodymyr Kovalenko Academician of Ukraine National Academy of Engineering National Technical University of Ukraine, Ukraine Zhejiang University of Technology, China ***History and Progress of Laser Intelligent Manufacturing***

12:00-13:30 Lunch and break

13:30-15:30	Plenary Keynote Session 2 Chair: *Professor Lin Li*
13:30-14:00	Keynote 6: Professor Paulo Bartolo Fellow of International Academy of Production Engineering, Director of Bio-manufacturing Centre, The University of Manchester, UK ***Personalised Medicine through Additive Manufacturing***
14:00-14:30	Keynote 7: Professor Jun Wang The University of New South Wales, Australia ***A New Look into Abrasive Waterjet Machining Technologies***
14:30-15:00	Keynote 8: Professor Wen-Yuh Jywe President of National Formosa University, Chinese Taiwan ***Implementation of "Internet of Things" Technology on Machine Tools from OT Layers***
15:00-15:30	Keynote 9: Professor Jiansong Ye Zhejiang Machinery and Electrical Group Co., LTD ***Discussion on Industry-Education Integration and Talent Training Mode of Intelligent Manufacturing at Yangtze River Delta***
15:30-15:40	Tea break
15:40-16:40	Plenary Keynote Session 3 Chair: *Professor Yongfeng Lu*
15:40-16:10	Keynote10: Mr. Yan Chen Han's Lases Smart Equipment Group Co,.Ltd, China ***Current Status of Intelligent Manufacturing in Han's Laser Smart Equipment Group***
16:10-16:40	Keynote 11: Professor Jianhua Yao Dean of Institute of Laser Advanced Manufacturing,

	Dean of College of Mechanical Engineering, Zhejiang University of Technology, China ***Research Progress and Prospects of Laser Surface Engineering***
16:40-18:10	The Yangtze River Delta International Intelligent Manufacturing Summit Forum Location: Qiming Room (Building A, 2nd Floor)
18:30-20:30	Banquet Location: Qihang Hall (Building C, 1st Floor)

Day 2 (Tuesday, 9 July 2019)

Parallel Session Room 1 (R-1): Qihang Hall (Building C, 1st Floor)

8:30-8:50	The 6th Forum of Advanced Laser Manufacturing Opening Ceremony Chair: *Professor Rongshi Xiao*
8:50-10:10	Parallel SessionFALM-1 Location: R-1 Session chair: *Professor Shihong Shi* Soochow University, China
8:50-9:10	Invited speaker (F40): *Professor Yan Shi* Changchun University of Science and Technology, China ***Research on the Interaction between Laser and Arc in the Process of two Heat Sources Hybrid Welding***
9:10-9:25	F17-*Hao Liu* China University of Mining and Technology, China ***Microstructure and Properties of CoCrFeNiTi High Entropy Alloy by Laser Cladding***
9:25-9:40	F39-*Zhifeng Yuan* Zhejiang University of Technology, China ***Design of Synchronous Coupling Device of Alternating Magnetic Field for Laser Refining and Remanufacturing***
9:40-9:55	F20-*Hao Su* Soochow University, China ***Algorithm and Implementation of Consistent Overlap Ratio of Free-form Surface Laser Cladding***
9:55-10:10	F01-*Zheng Cao* Beijing University of Technology, China ***Numerical Simulation and Experimental Study of Dense Weld Deformation of Thin GH3128 Plate in Fiber Laser-Welding***
10:10-10:30	Tea break

10:30-12:05	Parallel Session FALM-2 Location: R-1 Session chair: *Professor Qunli Zhang* Zhejiang University and Technology, China
10:30-10:50	Invited speaker (F03): *Professor Jian Lin* Beijing University of Technology, China ***Analysis of Hot Cracking in Laser Welded Ni Alloy and Platinum Foil Joints***
10:50-11:05	F10-*Huan Li* Jiangnan University, China ***Wear Performance of Laser Induced Arc Welding ofHigh Boron and High Carbon Steel***
11:05-11:20	F22-*Gang Li* Soochow University, China ***Gas Protection Characteristics of Ti-6Al-4V Alloy Induced by Laser Cladding in Open Environment***
11:20-11:35	F04-*Weizhe Du* Beijing University of Technology, China ***304 Stainless Steel Foil Laser Micro Welding with Argon Gas Protection***
11:35-11:50	F08-*Jingqi Zhang* Beijing University of Technology, China ***Numerical Simulation of Buckling Deformation of 3161 Ultra-Thin Plate by Laser Welding***
11:50-12:05	F11-*Yuke Huang* Nanjing Agricultural University, China ***Experimental Investigation on Picosecond Laser Induced Plasma Micromachining***

Parallel Session Room 2 (R-2): Qiming Room (Building A, 2nd Floor)

8:50-10:15	Parallel Session LPAM-1 Location: R-2 Session chair: *Professor Volodymyr Kovalenko* National Technical University of Ukraine, Ukraine Zhejiang University of Technology, China
8:50-9:10	Invited speaker (7): *Professor Hongyu Zheng* Shandong University of Technology, China ***An Experimental Investigation into the Laser Drilling Process of Nitrile Butadine Rubber under Different Wavelengths, Pulse Durations and Drilling Methods***
9:10-9:30	Invited speaker (202): *Professor Rong Liu* Carleton University, Canada

	Zhejiang University of Technology, China ***Advanced Stellite Alloys as Hardfacing Materials for Wear Resistance Applications***
9:30-9:45	25-*Mengya Cui* Beijing University of Technology, China ***Three-Dimensional Mn/MnOx Electrode for Supercapacitor***
9:45-10:00	63-*Ashish Kumar Sahu* Indian Institute of Technology, Delhi, India ***Optimization and Metallurgical Characterization of High-quality Microchannel Fabrication on Titanium by Nanosecond Fiber Laser***
10:00-10:15	65-*Li Cao* Beijing University of Technology, China ***Fabrication of the Porous Si Architecture for SERS Platform by Laser Surface Remelting and Dealloying***
10:15-10:30	Tea break
10:30-12:05	Parallel Session LPAM-2 Location: R-2 Session chair: *Professor Yunxia Ye* Jiangsu University, China
10:30-10:50	Invited speaker (203): *Professor Lijun Song* Hunan University, China ***Quasi-continuous-wave laser additive manufacturing for tailored microstructures***
10:45-11:05	Invited speaker (137): *Professor Guangyi Ma* Dalian University of Technology, China ***Effect of Graphite Addition on Mechanical Properties of Direct Laser Deposited Al_2O_3 Ceramics***
11:05-11:20	148-*Bingbing Li* California State University Northridge, Los Angeles, USA ***Bicrystalline Structure and its Mechanical Property Regulation in Inconel 718 Superalloy Fabricated by Laser Hybrid Manufacturing***
11:20-11:35	134-*Weilin Wang* Zhejiang University of Technology, China ***Bonding Mechanism and Numerical Simulation of Ti-6Al-4V Alloy by Supersonic Laser Deposition***
11:35-11:50	130-*Hui Chen* Beijing Institute of Technology, China ***Research on Force Measurement Intelligent Boring Bar system for Boring Process***

11:50-12:05	125-*Chenggan Xue* Zhejiang University of Technology, China ***Cavitation Erosion Behavior of 17-4PH Precipitation Hardening Stainless Steel via Laser Soild Solution***

Parallel Session Room 3 (R-3): Qiyuan Room (Building A, 3rd Floor)

8:30-10:20	Parallel Session MPT-1 Location: R-3 Session chair: *Professor Huan Qi* Zhejiang University of Technology, China
8:30-8:50	Invited Speaker (124): *Professor Yebing Tian* Shandong University of Technology, China ***Experimental Investigation on High-shear and Low-pressure Grinding Process for SLM Inconel 718 Alloy***
8:50-9:05	5-*Kanka Goswami* Indian Institute of Technology Madras, Chennai, India ***Process Monitoring of Micro Electrical Discharge Machining by Pulse Discrimination and Acoustic Emission Signals***
9:05-9:20	92-*Gengzhuo Li* Southern University of Science and Technology, China ***Elliptic Ultrasonic Assisted Fixed-Abrasive CMP of Si Wafer***
9:20-9:35	60-*Hari Srinivasa Rao Magham* Indian Institute of Technology, Madras, Chennai, India ***Grindability Studies of Thermomechanically Processed Advanced High Strength Steel using Sol-Gel and Alumina Grinding Wheels***
9:35-9:50	75-*Vijayathithan M* Indian Institute of Technology Madras, Chennai, India ***Machining Induced Surface Integrity in the Drilling of CFRP/Ti Stacks***
9:50-10:05	195- *Kingshuk Mandal* Jadavpur University, Kolkata, India ***Influence of the Variable Process Parameters in WEDM of High Conductive New Generation Aluminum Alloy***
10:05-10:20	88- *Vineet Paliwal* Indian Institute of Technology Madras, Chennai, India ***Influence of Spindle Speed Variation on the Chatter Stability Limits in High-Speed Milling***
10:20-10:30	Tea break
10:30-12:00	Parallel Session MPT-2 Location: R-3

	Session chair: *Professor Yebing Tian* Shandong University of Technology, China
10:30- 10:45	95-*Ahmad Farhadi* Shanghai Jiaotong University, China ***Comparison between Electric Arc Sweep Machining and Existing Technologies for Blisk Manufacturing***
10:45- 11:00	94-*Ankit Aggarwal* Thapar Institute of Engineering and Technology, Patiala, India ***Nanofinishing of Hemispherical Blind Hole Surface with A Newly Designed Magnetorheological Finishing Tool***
11:00- 11:15	101-*Chen Li* China Jiliang University, China ***A Research on the Incidence of Soft Abrasive Flow on the Surface of a Workpiece and its Machining Characteristics***
11:15- 11:30	119-*Balakrushna Guntreddi* Indian Institute of Technology Madras, Chennai, India ***High Speed Machining of Aluminium Alloy using Vegetable Oil Based Small Quantity Lubrication***
11:30- 11:45	199- *Tai-Wei Chiu* Institute For Information Industry, Taichung, Chinese Taiwan ***Implementation of Communication Protocol for Machine Tool in Reference Architecture of Fog Computing***
11:45- 12:00	115- *Dongqian Wang* Beijing Institute of Technology, China ***Applications of Machine Learning for the Prediction of Stability Lobe Diagram and Surface Location Error during Milling***

Parallel Session Room 4 (R-4): Huansha Room-B (Building A, 1st Floor)

8:30- 10:05	Parallel Session DC-1 Location: R-4 Session chair: *Professor Zhongyu Piao* Zhejiang University of Technology, China
8:30- 8:50	Invited speaker (111): *Professor Dapeng Tan* Zhejiang University of Technology, China ***Free Sink Vortex Multiphysics Modeling and Vibration Characteristics in Ladle Teeming Process***
8:50- 9:05	19-*Chao Chen* Zhejiang University of Technology, China ***Digital Technologies in Accurate Soft Tissue Reconstructionfor Head and Neck Tumor Resection***
9:05- 9:20	20-*Tao Zhao* Zhejiang University of Science & Technology, China

	Torque Coordinated Control for Distributed Drive Electric Vehicle Based on Hierarchical Control
9:20-9:35	30-*Xiangqi Ni* Zhejiang University of Technology, China ***Pneumatic Soft Robotic Gripper Embedded with Multi-stable Structure***
9:35-9:50	122-*V Akhil* Indian Institute of Technology Madras, Chennai, India ***Surface Texture Characterization of Powder Bed Fused Ti-6Al-4V Components using Fractal Dimension Analysis***
9:50-10:05	59-*Yongli Huang* Zhejiang University of Science and Technology, China ***Intelligent Monitoring System for Water leakage prevention of Public Facilities***
10:05-10:30	Tea break
10:30-11:20	Parallel Session DC-2 Location: R-4 Session chair: *Professor Dapeng Tan* Zhejiang University of Technology, China
10:30-10:50	Invited speaker (29): *Professor Zheng Zhang* Zhejiang University of Technology, China ***Systematic Analysis of Variable Stiffness Multistable Composite Structures and its Potential Application in Human Exoskeleton***
10:50-11:05	39-*Kai Pei* Zhejiang University of Technology, China ***A Novel Solar Tracking Model Intergrated with Multi-stable Structure and Organic Solar Cell***
11:05-11:20	38-*Taotao Xu* Zhejiang University of Technology, China ***Error Analysis of 5-PSS/UPU Parallel Mechanism Considering Ball Joint Clearance***

12:00-13:30 Lunch and break

Parallel Session Room 1 (R-1): Qihang Hall (Building C, 1st Floor)

13:30-15:20	Parallel Session FALM-3 Location: R-1 Session chair: *Professor Dongyun Zhang* Beijing University of Technology, China
13:30-13:50	Invited Speaker (F16): *Professor Weimin Zhou* Shanghai Institute of Industrial Technology, China

	3D Printing of Metal Wires and Equipment Development
13:50-14:05	F23-*Haifeng Yang* China University of Mining and Technology, China ***Numerical Simulation and Experimental Research on High Precision Forming Induced by Laser Shock Imprinting***
14:05-14:20	F12-*Rui Xiao* Shanghai University of Engineering Science, China ***Joining Mechanism of Dissimilar Aluminum/steel Joints by Laser Spot Welding***
14:20-14:35	F30-*Zheng Fang* Zhejiang University of Technology, China ***Influence of Substrate Surface Inclination Angle on the Morphology of Iron-based Alloy Laser Cladding***
14:35-14:50	F24-*Shuguang Wang* Soochow University, China ***Analysis of Dilution Rate and Single Channel Morphology of High-speed Cladding Cr50Ni Alloy by Laser Inside-beam Powder Feeding Process***
14:50-15:05	F05-*Xue Han* Beijing University of Technology, China ***The Study on Plume Characteristics of 10 kW level Fiber Laser Welding***
15:05-15:20	F25-*Jiping Zhang* Soochow University, China ***Simulation Analysis of Temperature Field and Process Optimization of Laser Cladding Based on Three-light-beams Internal Wire Feeding***
15:20-15:30	Tea break
15:30-17:05	Parallel Session FALM-4 Location: R-1 Session chair: *Professor Yan Shi* Changchun University of Science and Technology, China
15:30-15:50	Invited Speaker (F28): *Professor Dongyun Zhang* Beijing University of Technology, China ***The Advances of SLM Technology***
15:50-16:05	F18-*Youzhu Mei* Soochow University, China ***Study on the Influence of Light-Powder Coupling Mode on Surface Roughness of Laser Cladding Forming***
16:05-16:20	F35-*Jiyu Du* Zhejiang University of Technology, China

	Study of Coating Technology of Laser Cladding Single Layer of 42CrMo Bearing Steel with Large Thickness and Low Dilution Rate
16:20-16:35	F06-*Lin Luan* Beijing University of Technology, China ***Effect of Laser Remelting on Al/Cu Diffusion Bonding Interface***
16:35-16:50	F19-*Cheng Peng* Soochow University, China ***Study on Temperature Control of Powdered Pool in Hollow Laser Light***
16:50-17:05	F27-*Guangtian Han* Shenyang Jianzhu University, China ***Study on the Surface Quality of ZrO_2 Ceramics Bearing by Diamond Grinding Wheel***

Parallel Session Room 2 (R-2): Qiming Room (Building A, 2nd Floor)

13:30-15:20	Parallel Session LPAM-3 Location: R-2 Session chair: *Professor Shiyun Dong* National Key Laboratory for Remanufacturing, China
13:30-13:50	Invited speaker (34): *Professor Ting Huang* Beijing University of Technology, China ***Fabrication of Porous Si/Cu Architecture for Lithium-ion Batteries Based on Laser Microcladding and Dealloying***
13:50-14:05	107-*Ahmed Alghamdi* The University of Manchester, Manchester, UK ***Optimisation of Laser Micromachining of multilayer coated cutting tools***
14:05-14:20	74-*Xin Zhang* Beijing University of Technology, China ***Structural Response of Femtosecond Laser Processed Silicon***
14:20-14:35	81-*Chao Guo* Shandong University, China ***Effect of Micro-textured Surface of Impact Needle on the Performance of Electronic Printing Nozzle under Sliding Boundary Conditions***
14:35-14:50	201-*Boyang Huang* The University of Manchester, Manchester, UK ***Electro-active scaffolds for bone tissue regerenation***
14:50-15:05	105-*Peixin Hu* Shenzhen Technology University, China

	A Comparative Study on the Fabrication Efficiency of Dental Ceramics with High Power Pulsed Laser and Conventional Diamond-based CAD/CAM Milling
15:05-15:20	110- *Yuan Chen* Zhejiang University of Technology, China ***Study on the Element Segregation and Laves Phase Formation in the Carbon Nanotube Reinforced IN718 Alloy Fabricated by Laser Cladding***
15:20-15:30	Tea break
15:30-17:20	Parallel Session LPAM-4 Location: R-2 Session chair: *Professor Ting Huang* Beijing University of Technology, China
15:30-15:50	Invited speaker (106): *Professor Qunli Zhang* Zhejiang University of Technology, China ***Hot Corrosion Behavior of Laser Deposited Inconel 718 Alloy under Different Heat Treatment Conditions***
15:50-16:05	151-*Fengyuan Liu* The University of Manchester, Manchester, UK ***'Bone Bricks'- cell-friendly, Low-cost and Easily Sembled Orthopaedic Treatment for Blast Injuries***
16:05-16:20	178-*Tushar Meshram* Keio University, Japan ***Generation of High-density, Self-organized Microcones on Reaction Bonded Silicon Carbide by Nanosecond Pulsed Laser Irradiation.***
16:20-16:35	180-*Debal Pramanik* Jadavpur University, Kolkata, India ***Addition of Sawing Strategy for Microdrilling of Monel k500 Superalloy Sheet to Study Hole Characteristics with Low Power Pulsed Fiber Laser***
16:35-16:50	140-*Ye Wang* Zhejiang University of Technology, China ***Effect of Laser Polishing on MAO-treated Ti-6Al-4V Alloy and Corrosion Resistance***
16:50-17:05	173-*Wangfan Zhou* Jiangsu University, China ***Modelling Plastic Deformation Induced by Laser Shock using 3D Discrete Dislocation Dynamics***
17:05-17:20	117-*Xuanjie Huang* Zhejiang University of Technology, China

	Microstructure Characterization and Properties Evaluation on WC/Cu Composite Coating Prepared by Supersonic Laser

Parallel Session Room 3 (R-3): Qiyuan Room (Building A, 3rd Floor)

13:30-15:05	Parallel Session MPT-3 Location: R-3 Session chair: *Professor Zhi Pei* Zhejiang University of Technology, China
13:30-13:50	Invited speaker (204): *Professor Yunfeng Liu* Zhejiang University of Technology, China ***Topological Optimum Design and 3D Printing for Artificial Mandibular Implant***
13:50-14:05	147-*Haitham M Alswat* The University of Manchester, Manchester, UK ***Selection of Cutting Conditions Based on Both Minimum Cost and Energy***
14:05-14:20	67-*Kaustabh Chatterjee* Indian Institute of Technology Guwahati, Guwahati, India ***A Framework for Enhancing Machining Performance using Big Research Data Analytics***
14:20-14:35	99-*Yang Liu* Beijing Institute of Technology, China ***The Experimental Study of High Volume Fraction SiCp/Al Composites with Ultrasonic Drilling***
14:35-14:50	113-*Harish Kumar* Indian Institute of Technology Delhi, Delhi, India ***Effect of Different Dielectric Medium on the Fabrication of High Aspect-ratio Micro-electrodes***
14:50-15:05	132-*Jinqiu Pan* Beijing Institute of Technology, China ***Design and Analysis of a Smart Milling Tool Holder for Milling Process Monitoring in Ultra-precision Machining***
15:05-15:30	Tea break
15:30-16:45	Parallel Session MPT-4 Location: R-3 Session chair: *Professor Yunfeng Liu* Zhejiang University of Technology, China
15:30-15:45	159-*S Niketh* Indian Institute of Technology Madras, Chennai, India ***Experimental and Analytical Investigation into Cutting Force and Temperature of Novel Drill Tool having Hybrid Micro-scale***

	Textures
15:45-16:00	160-*Shuyao Liu* Beijing Institute of Technology, China ***A Smart Boring Bar for Compensation of Radial Deformation during Machining***
16:00-16:15	170-*Koushik Mishra* Jadavpur University, Kolkata, India ***Influence of Different Featured Tools on Machining Accuracy in Electrochemical Milling***
16:15-16:30	172-*Tatsuya Shitara* Keio University, Japan ***Direct Observation of Discharging Phenomena in Vibration-assisted Micro Electrical Discharge Machining***
16:30-16:45	174-*Talwinder Singh Bedi* Indian Institute of Technology Ropar, Rupnagar, India ***Magnetorheological Methods for Internal Cylindrical Surface Finishing - A review***

Parallel Session Room 4 (R-4): Huansha Room-B (Building A, 1st Floor)

13:30-15:05	Parallel Session WJ-1 Location: R-4 Session chair: *Professor Rongshi Xiao* Beijing University of Technology, China
13:30-13:50	Invited Speaker (205): *Dr. Wenjian Zheng* Zhejiang University of Technology, China ***Initial Instability in the Welding Pool of Aluminum Alloy***
13:50-14:05	51-*Marc Hummel* RWTH Aachen University, Aachen, Germany ***Increasing Efficiency in Laser Micro Welding of Copper by using a 515 nm Disc Laser***
14:05-14:20	68-*Zhenyu Zhou* Zhejiang University of Technology ***Wear Behavior of 7075-Aluminum After Ultrasonic-assisted Surface Burnishing***
14:20-14:35	61- *Susmita Datta* Institute of Technology Kharagpur, Kharagpur, India ***Effect of Welding on Mechanical Performance of Laser Welded NiTinol Samples***
14:35-14:50	183- *RajuMahto* Institute of Technology Kharagpur, Kharagpur, India ***A Nano-Indentation study on Intermetallic Compound in***

	Friction Stir Welding of AA6061-T6 and AISI304
14:50-15:05	184-*Dhira Kumar* Jadavpur University, Kolkata, India ***Experimental Investigation on Low Power Laser Transmission Welding of Transparent Polypropylene***
15:20-15:30	Tea break
15:30-16:45	Parallel Session WJ-2 Location: R-4 Session chair: *Professor Jianguo Yang* Zhejiang University of Technology, China
15:30-15:45	190-*Nabendu Ghosh* Jadavpur University, Kolkata, India ***Dissimilar MIG Welding between 316L Austenitic Stainless Steel and 409 Ferritic Stainless Steel: Experiment, Analyses and Optimization***
15:45-16:00	171-*VyasMani Sharma* Indian Institute of Technology Kharagpur, Kharagpur, India ***Fabrication of Large Copper Foam Plate using Friction Sintering: Effect of Tool Traverse Speed***
16:00-16:15	165-*Neetesh Soni* Southwest Petroleum University, China ***Aluminum Alloys(Al6061-T6) and Copper(Cu) Welded by Friction Stir Welding Detecting Surface using NDT Techniques***
16:15-16:30	210-*Yinhe Ma* Zhejiang University of Technology ***High Energy Deposition of TiN Coating with Pulse Enhanced Vacuum Arc Evaporation***
16:30-16:45	211-*Sai Wang* Zhejiang University of Technology, China ***Welding Distortion Straightening Technique by TIG Method***

Day 3 (Wednesday, 10 July 2019)

Parallel Session Room 1 (R-1): Qihang Hall (Building C, 1st Floor)

8:30-10:20	Parallel Session FALM-5 Location: R-1 Session chair: *Professor Lingfei Ji* Beijing University of Technology, China
8:30-8:50	Invited Speaker (F43)-*Professor Feixing Lu* Wuhan HG Laser Engineering Co., Ltd., China ***Developing Status and Typical Application of Domestic Laser Equipment***
8:50-9:05	F14-*Yinfen Cheng* Southwest Jiaotong University, China ***Effect of Narrow Pulse Width Laser Cleaning on Corrosion Performance of Aluminum Alloy***
9:05-9:20	F41-*Haifei Lu* Jiangsu University, China ***High-performance Integrated Additive Manufacturing with Laser Shock Peening–induced Microstructural Evolution and Improvement in Mechanical Properties of Ti6Al4V Alloy Components***
9:20-9:35	F45-*Lijuan Wu* Zhejiang University of Technology, China ***Analysis on Inter-particle Bonding Behavior and Cohesive Strength of WCp-reinforced Stellite-6 Alloy Coating Prepared by Supersonic Laser***
9:35-9:50	F42-*Xiang Xu* Jiangsu University, China ***Mechanical Properties and Electrochemical Corrosion Resistance of Laser Cladded Fe-based Composite Coatings on 4Cr5MoV1Si Steel***
9:50-10:05	F44-*Jiajin Sheng* Zhejiang University of Technology, China ***Microstructure Evolution Mechanism during Heat Treatment of IN939 Superalloy Prepared by Laser Cladding***
10:05-10:20	F31-*MingwenGai* Zhejiang University of Technology, China

	Effect of Electromagnetic Induction Coupling on Hardening Depth of Laser Deep Quenching on 42CrMo Bearing Steel
10:20-10:30	Tea break
10:30-12:00	Parallel Session FALM-6 Location: R-1 Session chair: *Professor Guangyi Ma* Dalian University of Technology, China
10:30-10:45	F07-*Miao Yu* Beijing University of Technology, China ***Investigation of Femtosecond Laser Micro-Welding of Glass***
10:45-11:00	F09-*Le Zhao* Beijing University of Technology, China ***Study on Formation of Key Hold of High Power Fiber Laser***
11:00-11:15	F32-*Zhongyao Cai* Zhejiang University of Technology, China ***Numerical Simulation of Laser Inner Wall Cladding Process***
11:15-11:30	F26-*Weiwei Jiang* Soochow University, China ***Prediction of Geometrical Shape of Coaxial Wire Feeding Cladding in Three Beam***
11:30-11:45	F21-*Jinchao Zhang* Soochow University, China ***Influence of Argon Flow on the Oxidation Sensitivity of TC4 Titanium Alloy Processed by Laser Cladding in Air***
11:45-12:00	F02-*Mingyu Cheng* Beijing University of Technology, China ***Fabrication of Dye-sensitized Solar Cell TiO_2 Photocathode by Femtosecond Laser Etching Combined Hydrothermal Method***

Parallel Session Room 2 (R-2): Qiming Room (Building A, 2nd Floor)

8:30-10:15	Parallel Session LPAM-5 Location: R-2 Session chair: *Professor Zhehe Yao* Zhejiang University of Technology, China
8:30-8:45	167- *Professor Paul Shore* National Physical Laboratory, UK ***Fluid Film Bearing Slideways for Ultra Precision Machine Tools***
8:45-9:00	9-*Nandhini Raju* Singapore University of Technology and Design, Singapore ***A Characterization Method for Mechanical Properties of Metal***

	Powder Bed Fusion Parts
9:00- 9:15	18- *Dongcai Wang* Zhejiang University of Technology, China ***Digital Design and Manufacturing of Personalized Lingual Brackets Based on SLM and LW***
9:15- 9:30	22-*Zhao Zhang* Dalian University of Technology, China ***The Numerical Studies of Residual states in Laser Deposited Additive Manufacturing and the Scaling Effects***
9:30- 9:45	66-*Lu Yao* Shenzhen Technology University, China ***Study on the Performance of 3D Printing in Oral Cavity***
9:45- 10:00	73-*XiaoqingTian* Hefei University of Technology, China ***Tensile Properties in Adaptive Sliced Additive Manufacturing of Silicone Elastomer***
10:00- 10:15	23-*Wenhao Wang* Beijing University of Technology, China ***Processing of Submicron Spiral Grooves on Spherical Surface by Picosecond Laser***
10:15- 10:30	Tea break
10:30- 12:20	Parallel Session LPAM-6 Location: R-2 Session chair: *Professor Lijun Song* Hunan University, China
10:30- 10:50	Invited Speaker: *Professor Zhehe Yao* Zhejiang University of Technology, China ***Effects of Ultrasonic Vibration on Laser Metal Forming***
10:50- 11:05	175-*Udisien Woy* University of Sheffield, Sheffield, UK ***The Comparative Effects of the SMD Process on Type 316L Stainless Steel Powder Feedstock***
11:05- 11:20	157-*Weiguang Wang* The University of Manchester, Manchester, UK ***Engineering the PCL/grapheme Scaffold with Additive Manufacturing for Bone Regeneration***
11:20- 11:35	64-*Mohammad Shahid Raza* Indian Institute of Technology Kharagpur, Kharagpur, India ***Thermo–mechanical Monitoring and Analysis of MultipassLaser Forming of Stainless Steel***
11:35-	144-*Rajkumar Velu*

11:50	Singapore University of Technology and Design, Singapore ***Evaluation of Engineering High Performance Thermoplastics for Robot-based 3D Printing of Moulds: a Critical Perspective to Support Automated Fibre Placement Process***
11:50-12:05	189-*Nilanjan Roy* Jadavpur University, Kolkata, India ***Comparative Study on Quality Characteristic of Laser Beam Cutting of Inconel Superalloy at Different Environment by Sensitivity Analysis***
12:05-12:20	168-*Chadurvedi Venkatesan* Singapore University of Technology and Design, Singapore ***Experimental Analysis of the Effect of Laying Speed of IR Assisted Automated Fibre Placement with PA-6/carbon Prepreg over 3D Printed PEI Mould***

Parallel Session Room 3 (R-3): Qiyuan Room (Building A, 3rd Floor)

8:30-9:20	Parallel Session MPT-5 Location: R-3 Session chair: *Professor Huaping Wu* Zhejiang University of Technology, China
8:30-8:50	Invited Speaker (209): *Professor Huan Qi* Zhejiang University of Technology, China ***Abrasive technology for the precision machining process***
8:50-9:05	98-*Biswesh Ranjan Acharya* IIT Kharagpur, Kharagrur, India ***Evolution of Final Shape of Micro-Tools Fabricated by Various Fabrication Methods in Micro-EDM***
9:05-9:20	188-*Arminder Singh Walia* Thapar Institute of Engineering & Technology, Patiala, India ***Application of Machine Learning Techniques to Predict the Surface Roughness in Electrical Discharge Machining of Hardened EN31 Steel with Cermet Tool Tip***
9:20-9:35	150-*Syuhei Kurokawa* Kyushu University, Japan ***Acceleration of CO_2Absorption Rate of Temperature-responsive Hydrogels by Precision Machining and Spray Coating Process***
9:35-10:00	Tea break
10:00-12:00	The University of Manchester LPRC Alumni Forum Location: R-3 Session chair: *Professor Lin Li* The University of Manchester, Manchester, UK

10:00-10:20	Invited speaker (43): *Professor Shiyun Dong* National Key Laboratory for Remanufacturing, Beijing, China ***Laser Additive Manufacturing and Remanufacturing Ferrous Metal Components***
10:20-10:40	Invited speaker (54): *Professor Yunxia Ye* Jiangsu University, China ***Influence of Laser Pulse Width on Laser Drilling of Carbon Fiber Reinforced Plastic(CFRP)and the Strategy for Enhancing Drilling Quality***
10:40-11:00	Invited speaker (85): *Professor Fuquan Li* Harbin Institute of Technology, China ***Droplet Transfer Behavior during Laser Welding of 6082 Al Alloy with Filler Wire***
11:00-11:20	Invited speaker (90): *Dr. XianfengShen* China Academy of Engineering Physics, China ***Microstructure and Mechanical Properties of Selective Laser Melting of HR-2 Hydrogen EmbrittlementResistance Stainless Steels***
11:20-11:40	Invited speaker (17): *Professor Gangxian Zhu* Soochow University, China ***Numerical Simulation of Laser Shock on Residual Stress of Cladding Layer in Laser Additive Manufacturing***
11:40-12:00	Invited speaker: *Dr. Yanqun Tong* Zhenjiang University, China ***Laser cleaning and surface modification of CFRP***

Parallel Session Room 4 (R-4): Huansha Room-B (Building A, 1st Floor)

8:30-9:50	Parallel Session WJ-3 Location: R-4 Session chair: *Professor Fuquan Li* Harbin Institute of Technology, China
8:30-8:50	Invited Speaker (206)-*Professor Yanming He* Zhejiang University of Technology, China ***Tailoring Microstructure and Mechanical Performance of the Graphite-Ni based Superalloy Brazed Combination Used for Molten Salt Reactors through Thermal Exposure***
8:50-9:05	142-*Md PerwejIqbal* Indian Institute of Technology, Kharagpur, India ***A Study on Welding Force, Torque and Temperature Evolution during Friction Stir Welding of Aluminum Pipes***
9:05-	40-*Shihui Guo*

9:20	Beijing University of Technology, China ***Characteristics of Welding Mode Transition Induced during 1-μm and 10-μm Laser Welding***
9:20-9:35	45-*Jingquan Zhang* Beijing University of Technology, China ***Weld Formation Mechanism of Laser Pressure Welding***
9:35-9:50	108-*Baoqi Zhu* Beijing University of Technology, China ***Multiple Imaging Characteristics of Plasma Induced during Fiber Laser -TIG Arc Hybrid Welding***
9:50-10:05	128-*Wenhua Tong* Zhejiang University of Technology, China ***Temperature Field Evolution and Analysis of Laser Deep Quenching of 42CrMo Steel***

12:00-13:30 Lunch and break

14:00-17:00	Plenary Keynote Session 4 Chair: *Professor Paulo Bartolo* Location: Qihang Conference Hall (Building C, 1st Floor)
14:00-14:30	Keynote12: Professor Yongfeng Lu University of Nebraska-Lincoln, USA ***Nano-scale 3D Printing of Functional Structures using Blended Resin Mixtures***
14:30-15:00	Keynote13: Professor Jiwang Yan Keio University, Japan ***Cultural Effects on Manufacturing R&D in Japan - with Comparison with USA, China and Europe***
15:00-15:30	Keynote14: Professor Paul Mativenga The University of Manchester, UK ***Engineers and the Grand Challenge of Waste :Engineering the Future***
15:30-16:00	Keynote15: Professor Qipeng Li Zhejiang University of Science & Technology, China ***Intelligent Manufacturing Practice of Industrial Vehicles of Hangcha Group***
16:00-16:20	Teabreak
16:20-17:00	Closing Ceremony Chair: *Professor Rongshi Xiao/Professor Paulo Bartolo*

Poster Presentations

ID	Titles	Authors	Affiliations
2	**Characterization and Experimental Analysis of Silicon Carbide and Rare Earth Compounds Reinforced Al-6063 Aluminium Alloy Hybrid Composites**	*Vipin Sharma[1,2], Vinod Kumar[3], Ravinder Joshi[3], Deepak Sharma[3]*	*[1]Thapar Institute of Engineering and Technology, Meerut, India [2]Meerut Institute of Engineering & Technology, Meerut, India [3]Thapar Institute of Engineering and Technology, Patiala, India*
8	**The Static Performance of the High-speed Aerostatic Spindles with Modified Discharge Coefficients**	*Laiyun Song[1], Kai Cheng[2], Hui Ding[1], ShijinChen[1]*	*[1.]School of Mechatronics Engineering, Harbin Institute of Technology, Harbin, China [2.]College of Engineering, Design and Physical Sciences, Brunel University, London, United Kingdom*
10	**Digital Design and Fabrication of Personalized Compression Hemostasis Device for Cardiac Pacemaker Implantation based on 3D Printing**	*HongTao Fu[1], YunFeng Liu[1], DongCai Wang[1], XiaoHong Pan[2], XianFeng Jiang[1], XianTao Dong[1]*	*[1.]Key Laboratory of E&M (Zhejiang University of Technology), Ministry of Education & Zhejiang Province, Hangzhou, China [2.]Department of Cardiology, The Second Affiliated Hospital, School of Medicine, Zhejiang University, Hangzhou, China*
12	**Nondestructive**	*Xin Qiao[1], Hongli Chen[2],*	*[1.]Zhejiang University of Technology, Hangzhou, China*

	Rape Blackleg Early Detection Method with Low-frequency Ultrasonic Technology	*Guilin Tu[2]*	*[2.]Zhejiang Sci-Tech University, Hangzhou, China*
13	***Mechanical and Biological Properties of 3D Printed Mandibular Graft with PEKK***	*Chen Xu[1], Kang Jie Cheng[2], Yun Feng Liu[1], Fu Dong Zhu[1], Xian Feng Jiang[1], Xing Tao Dong[1]*	*[1.]Key Laboratory of E&M (Zhejiang University of Technology), Ministry of Education & Zhejiang Province, Hangzhou, China* *[2.]Key Laboratory of E&M (Zhejiang University of Technology), Ministry of Education & Zhejiang Province, Hangzhou, China*
16	***Research on GH3128 Spot Welding by Fiber Laser Focus Point Rotation Process***	*Qiang Wu, ShushengPeng, Xintong Li, Rongshi Xiao*	*High-power and Ultrafast Laser Manufacturing Laboratory, Institute of Laser Engineering, Beijing, China*
24	***Motion Planning and Precise Control of Robotic Surgical System for Dental Implanting***	*Wei Bin Wang[1], Yun Feng Liu[1], Xian Feng Jiang[1], Fu Dong Zhu[2], Xing Tao Dong[1], JiaYou[3]*	*[1.]Key Laboratory of E&M (Zhejiang University of Technology), Ministry of Education & Zhejiang Province, Hangzhou , China* *[2.]The Affiliated Stomatology Hospital, College of Medicine, Zhejiang University, Hangzhou, China* *[3.]6D-Dental Ltd. Company, Hangzhou, China*
36	***Effective CAD/CAM Systems for Injection Molding and Manufacturing***	*AnsarSk, Pradeep Kumar, Vipin Sharma*	*Meerut Institute of Engineering and Technology, Meerut, India*
41	***The Optimization of Wind Turbine Blade Laying Equipment Structure by Modal Superposition Method***	*Jinghua Wang, Leian Zhang, Xuemei Huang*	*Shandong University of Technology, Shandong Zibo, China*
42	***Five-axis Machine Tool Error Indirect***	*Shengkai Mei*	*Shandong University of Technology, Zibo, China*

	Measurement Method based on Sample Test Method		
44	***Surface Propertiesand Online Monitoring of Laser Cleaning of Carbon Fiber Reinforced Polymer***	*Yanqun Tong*	*Jiangsu University, Zhenjiang, China*
46	***Experimental Research on Foil Forming Through Nanosecond Laser-induced Breakdown in Water***	*Zeng Nie[1,2], Yunxia Ye[1,2], Xudong Ren[1,2], Yonghong Fu[1,2], Yinqun Hua[1,2]*	*[1.] School of Mechanical Engineering,Jiangsu University, Zhenjiang, China [2.]Institute of Micro-nano Optoelectronics and Terahertz Technology, Jiangsu University, Zhenjiang, China*
47	***Dynamic Error Model of Five-Axis Machine Tool Based on AFSA-ACO-BPN Algorithm***	*Li Song, Mei Shengkai, Yuan Wei, GuoQianjian*	*Shandong University of Technology, Zibo, China*
49	***Systemetic Analysis and Curvature Control of BistableAnti-Symmetric Composite Cylindrical Shells in Hygrothermal Environment***	*Zheng Zhang, Hao Zhang, Weili Ma, Huaping Wu, Shaofei Jiang, Guozhong Chai*	*Department of Mechanical Engineering, Zhejiang University of Technology, Hangzhou, China*
55	***Adaptive Process Control Implementation of Wire Arc Additive Manufacturing for Thin Wall Components with Overhanging Features***	*TengFoong Lam, Xiong Yi, AudeliaGumarusDharmawan, ShaohuiFoong, Gim Song Soh*	*Singapore University of Technology and Design, Singapore, Singapore*
58	***Design and Optimization of Regional Split***	*Xiang Peng, Denghong Li, Shaofei Jiang,*	*Zhejiang University of Technology, Hangzhou, China*

	Header Structure in Plate-Fin Heat Exchanger	*Jiquan Li*	
62	***Conceptual Scheme Optimization of Mechanical Product Based on Functional Reliability Analysis***	*Shaofei Jiang, Tao Sun, Xiang Peng, Jiquan Li*	*Zhejiang University of Technology, Hangzhou, China*
69	***Investigation of Mechanical Behavior of Pure Aluminum under Vibration-assisted Burnishing by Molecular Dynamics Simulation***	*Zhong Yu Piao[1,2], Qiu Yang Zheng[1,2], Zhen Yu Zhou[1,2], Guang Lei Yu[1,2], Sen Bin Ye[1,2]*	*[1.]College of Mechanical Engineering, Zhejiang University of Technology, Hangzhou, China [2.]Key Laboratory of Special Purpose Equipment and Advanced Processing Technology (Zhejiang University of Technology), Ministry of Education, Hangzhou, China*
78	***Effect of Direction of Rotations on Process Performance of a Rectangular-rotating Core Magnetorheological Finishing Process***	*Manpreet Singh, Anant Kumar Singh*	*Thapar Institute of Engineering and Technology, Patiala, India*
79	***Design and Calibration of the Hybrid Long-Stroke Multi-Axis Nano-Positioning System***	*Po Yu Chen[1,2], Wen Yuh Jywe[2], Tung Hsien Hsieh[2], Hsueh Liang Huang[2], Tung Hsing Hsieh[2] , Ming Shi Wang[1]*	*[1.]Department of Engineering Science, National Cheng Kung University, Tainan, Taiwan [2.]Smart Machine and Intelligent Manufacturing Research Center, National Formosa University, Yunlin, Taiwan*
84	***Compression Properties in Extrusion-based Additive Manufacturing of Moisture-cured Silicone Open-cell Foam***	*XiaoqingTian, Dingyifei Ma, Shengyi Wang*	*Hefei University of Technology, 193 tunxiroad , Hefei, Anhui, China*
86	***Investigation on Material Remove of***	*Ge Man, JiShiming, Tan*	*Zhejiang University of Technology, Hangzhou, China*

	Aero-engine Blades based on Abrasive Belt Grinding	*Dapeng, Qiu Lei*	
87	***Errors in the Processing of Aero-engine Blades and Their Effects on Blade Performance***	*Qiu Lei[1,2,] Ji Shiming[3], Zeng Xi[3], Tan Dapeng[3], Ge Man[3]*	*[1.] Zhejiang University of Technology, Hangzhou, China [2.]Key Laboratory of E&M, Ministry of Education & Zhejiang Province, Hangzhou, China [3.]Zhejiang University of Technology, Hangzhou, China*
91	***Two-phase Flows Simulation in Pipeline Leakage with Coupled Volume-of-fluid and Level Set Method***	*WengXiaoxing, Li Chen, Xiao Fengqing*	*[1].zhejiang Academy of Agricultural machinery, Jinhua, China [2.]China Jiliang University, Hangzhou, China [3.]zhejiang institution of standardization, Hangzhou, China*
96	***Adhesion Enhancement of Wear-resistant Diamond Coating Deposited on Titanium by Seeding after Carbonization Pre-treatment***	*JiyeGao, FengXu, Lili Shi, ChenhuiXu, Xue Wang, DunwenZuo*	*College of Mechanical and Electrical Engineering, Nanjing University of Aeronautics and Astronautics, Nanjing, China*
100	***A Rotational Magnetorheological Honing (R-MRH) Process for Improving Operational Function of Cylindrical Mold***	*Sunil Kumar Paswan, Anant Kumar Singh*	*Thapar Institute of Engineering and Technology, Patiala, India*
103	***Design of an Eddy Current Displacement Sensor for Strong Magnetic Field Interference Environment***	*Fei Yang[1], Chengliang Pan[1], Heng Zuo[2]*	*[1]School of Instrument Science and Opto-electronics Engineering, Hefei University of Technology, Hefei, China [2]National Astronomical Observatories / Nanjing Institute of Astronomical Optics & Technology, Chinese Academy of Sciences, Nanjing, China*
104	***Applying Wireless Data Acquisition***	*WenYuh Jywe[1], CaoSang Tran[2],*	*[1]Automation Engineering, National Formosa University,*

	and Transmission System Design on the Precise Machine Tool Measurement	*YungHoh Sheu[3], PoChieh Hong[4], JingChung Shen[4], HsiuChing Chang[4]*	*Yunlin, Chinese Taiwan* *[2]Power Mechanical Engineering, National Formosa University, Yunlin, Chinese Taiwan* *[3]Computer Science and Information Engineering, National Formosa University, Yunlin, Chinese Taiwan* *[4]National Formosa University, Yunlin, Chinese Taiwan*
118	***Deformation Mechanism and Experiment Study of Gel Wheel***	*Shi Meng, Zeng Xi, JiShiming, QiuWenbing, Xi Fengfei, ZhengQianqian*	*Zhejiang University of Technology, Hangzhou, China*
120	***A Novel Trajectory Tracking Control of Collaborative Robot Based on Udwadia-Kalaba Theory***	*Fanzhi Wang[1], Jiang Han[1], Fangfang Dong[1], Lian Xia[1], Wenfeng Si[2]*	*[1]School of Mechanical Engineering, Hefei University of Technology, Hefei, China* *[2]Anhui Jiangji Heavy CNC Machine Tool Co., Ltd., Lu'an, China*
126	***Effects of Ultrasonic Cavitation on Laser Cladding Forming***	*Xiaowen Yu, Zhehe Yao, Jianhua Yao*	*Institute of Laser Advanced Manufacturing, Zhejiang University of Technology, Hangzhou, China*
127	***Fatigue Life of 32CrNi3MoVE Alloy Subjected to Laser Shock Peening under Rotary Bending Fatigue Test***	*Yong Wang, Zhibing Liu, Xibin Wang*	*[1]Beijing Institute of Technology, Beijing, China*
129	***Laser Deposition of Thin Al-Si Photo-Voltaic Coatings***	*Ruslan Zhuk[1], Qunli Zhang[2,3], Mykola Anyakin[1,2], ZheheYao[2,3], Jianhua Yao[2,3]*	*[1]National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Kyiv, Ukraine* *[2]Institute of Laser Advanced Manufacturing, Zhejiang University of Technology, Hangzhou, China* *[3]Zhejiang Provincial Collaborative Innovation Center of High-end Laser Manufacturing Equipment, Hangzhou, China*
138	***Simulation and Experimental Study of Laser Quenching***	*Kaiye Chen[1,2], Guolong Wu[1,2], Ye Wang[1,2], Hao Wu[1,2], Tianliang*	*[1]Institute of Laser Advanced Manufacturing, Zhejiang University of Technology, Hangzhou, China*

	Characteristics based on Galvanomeer Scanning	*Zhang[1,2], Danhua Lu[1,2], Jianhua Yao[1,2]*	*[2]Collaborative Innovation Center of High-end Laser Manufacturing Equipment, Hangzhou, China*
141	***Development of Tool Monitoring System for Smart Machine***	*WenYuhJywe, ChunJen Chen, ChuLing Huang, ShinJyun*	*National Formosa University, Yunlin, Chinese Taiwan*
145	***Fiber Reinforced Composite Manufacturing for Passive Actuators***	*Dhileep Kumar Jayashankar, Sachin Gupta Sean, Naresh D Sanandiya, Javier G. Fernandez, Kenneth Tracy*	*Singapore University of Technology and Design, Singapore, Singapore*
149	***Effects of DOD Piezoelectric 3D Bioprinting on the Cell Viability in Hydrogels***	*Ryan Meza, Bingbing Li*	*California State University Northridge, Los Angeles, USA*
161	***An Optical Geometric Errors Measurement System for Linear Guideway Assembly and Alignment***	*WenYuh Jywe[1,2], BorJeng Lin[1,2], HsuehLiang Huang[1,2], ChiaMing Hsu[1,2], YuWei Chang[1,2], ChingYing Chiu[1,2], JiaHong Chen[1,2]*	*[1]Department of Automation Engineering, National Formosa University, Yunlin, Chinese Taiwan* *[2]Smart Machine and Intelligent Manufacturing Research Center, National Formosa University, Yunlin, Chinese Taiwan*
162	***Design of Production Scheduling System for Flexible Manufacturing System***	*WenYuhJywe, ChunJen Chen, ChuLing Huang, ShinJyun Lin, MingLun Hu, JiaXing You*	*National Formosa University, Yunlin, Chinese Taiwan*
164	***An Analytical Model for Prediction of Bend Angle in Laser Forming based on Strain Energy Principle***	*SujitMulay, VineetPaliwal, N. Ramesh Babu*	*IIT Madras, Chennai, India*
177	***Surface Patterning***	*SaiDuttaGattu,*	*Keio University, Yokohama,*

	of Tungsten Carbide using Powder-mixed EDM	*Jiwang Yan*	*Japan*
179	***Experimental Analysis of Compressive Failure Load in Single-Lap Hybrid Joint (Bonded /Bolted) of Green Composites***	*Mridusmita Roy Choudhury, Kishore Debnath*	*NIT Meghalaya, Shillong, India*
192	***Influence of Process Parameters on Weld Quality and Evolution of Microstructure, Microhardness in Laser Welding of NiTinol-SS304 Dissimilar Combination***	*SusmitaDatta, Mohammad ShahidRaza, Chirikuri Kishore, ParthaSaha*	*Indian Institute of Technology Kharagpur, Kharagpur, India*
193	***Thermal and Morphological Analysis of the Effect of Different Shroudin g Environment during Laser Cutting of Gas-filled Closed Cell Aluminium Foam***	*Mohammad ShahidRaza, SusmitaDatta, Jogender Singh, ParthaSaha*	*Indian Institute of Technology Kharagpur, Kharagpur, India*
196	***Study on Laser Beam Butt Welding of NiTinol Sheets and Optimization of Process Parameters Using Desirability Function Analysis and Metaheuristic Techniques***	*SusmitaDatta, Mohammad ShahidRaza, Amit Kumar Das, ParthaSaha, Dilip Kumar Pratihar*	*Indian Institute of Technology Kharagpur, Kharagpur, India*
207	***Fluid Systems in Energy and***	*Lin Li[1],Hui Fang[2,3], Zichao*	*[1]Key Laboratory of E&M, Ministry of Education & Zhejiang*

	Combustion Processes: A Lattice Boltzmann Method Based Literature Review	*Yin[1], Ronghui Wang[1], Tong Wang[1], Linjie Zhao[1],Yanqi Wu[2,3], Jie Chen[2,3], Dapeng Tan[1], Yuehua Wan[2,3]*	*Province, Zhejiang University of Technology, Hangzhou, China [2]Institute of Information Resource, Zhejiang University of Technology, Hangzhou, 310014, P. R. China [3]Library, Zhejiang University of Technology, Hangzhou, 310014, P. R. China*
208	***Brain-computer Interfaces: Academic Insights and Perspectives Analysis***	*Zi-chao Yin[1],Hui Fang[2,3],Lin Li[1], Ronghui Wang[1], Tong Wang[1], Linjie Zhao[1], Houkai Lin[1], Dapeng Tan[1], Yuehua Wan[2,3]*	*[1]Key Laboratory of E&M, Ministry of Education & Zhejiang Province, Zhejiang University of Technology, Hangzhou 310014, P. R. China [2]Institute of Information Resource, Zhejiang University of Technology, Hangzhou, 310014, P. R. China [3]Library, Zhejiang University of Technology, Hangzhou, 310014, P. R. China*
F29	***Structure and Corrosion Behavior of TiAlN/CrNNanoscale Multilayer Coatings***	*LijunWang,GuangWen,Mingkun Li, Mengchao Wang, Hui Chen*	*Southwest Jiaotong University, Chengdu, China*
F33	***Numerical Simulation and Experimental Research of Laser Cladding 316L Stainless Steel***	*HonghaoGe, Chen Ye, HanzongXu, Fang Luo, Jianhua Yao*	*Zhejiang University of Technology, Hangzhou, China*
F34	***Effect of C Element on Microstructure and Properties of Fe-Cr-Ni-Si-C Laser Cladding Layer***	*GuofangZhu,Gang Dong, Lei Shen, Zhiwei Wu, Jianhua Yao*	*Zhejiang University of Technology, Hangzhou, China*
F36	***Effects of Ultrasonic Vibration on Laser Remanufactured Microstructure of Inconel 939 Superalloy***	*Zhehe Yao, Xijiang Lu, XiaowenYu,Caoqi Zhang, Jianhua Yao*	*Zhejiang University of Technology, Hangzhou, China*

F37	***Effect of Coating Materials for Laser Quenching on the Depth of Hardened Layer***	*Tang Zhou, Qunli Zhang, Zhijun Chen, Wenhua Tong, Weiwei Jin, Jian Lin, Jianhua Yao*	*Zhejiang University of Technology, Hangzhou, China*
F38	***Microstructure and Cavitation of Stellite 6 Coating by Supersonic Laser Deposition***	*Qijian Shi, Bo Li, Weilin Wang, Xuanjie Huang, Lijuan Wu, Jianhua Yao*	*Zhejiang University of Technology, Hangzhou, China*
F46	***Mechanism of Acoustic Cavitation in Laser Cladding Forming***	*Xiaowen Yu, Zhehe Yao, XijiangLu,Jianhua Yao*	*Zhejiang University of Technology, Hangzhou, China*