长三角国际智能制造精准对接活动暨
第40届MATADOR智能制造与设计国际会议

40th MATADOR International Conference on Advanced Manufacturing and Design
Yangtze River Delta International Intelligent Manufacturing Summit Forum

会议指南

Conference Programme

2019年7月8日-10日 / July 8-10, 2019

中国 · 杭州 / Hangzhou, China

主办单位：

长三角区域创新体系建设联席会议办公室

浙江省科学技术厅

The University of Manchester, UK

承办单位：

浙江工业大学

北京工业大学

协办单位：

中国光学学会激光加工专业委员会

中国机械工程学会特种加工分会

浙江科技学院

浙江工业大学新昌研究院

浙江工业大学湖州物流装备与技术研究院

赞助单位：

大族激光智能装备集团有限公司

奔腾激光（温州）有限公司

Organizers:

The Yangtze River Delta Association

Science Technology Department of Zhejiang Province

The University of Manchester, UK

Zhejiang University of Technology

Beijing University of Technology

Co-organizers:

Laser Processing Committee of Chinese Optical Society

Non-Traditional Machining Institution of the Chinese Mechanical Engineering Society

Zhejiang University of Science & Technology

Xinchang Research Institute of Zhejiang University of Technology

Huzhou Institute of Logistics Equipment and Technology, Zhejiang University of Technology

Sponsors:

Han’ s Laser Smart Equipment Group Co., Ltd

Penta Laser (Wenzhou) Co., Ltd

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会议程序册
Conference Programme Schedule

第一天(星期一, 2019.07.08)
Day 1 (Monday, 8 July 2019)

8:00-8:30	注册 Registration
8:30-9:00	开幕式 Welcome and Opening 地点:C幢一楼启航厅 Location: **Qihang Hall (Building C, 1st Floor)**
9:00-9:20	合影+茶歇 Photograph and Tea break
9:20-11:50	大会报告 Plenary Keynote Session 地点:C幢一楼启航厅 Location: **Qihang Hall (Building C, 1st Floor)**
12:00-13:30	午餐 Lunch and break 地点:A幢1楼浣纱A厅或B幢1楼月亮湾餐厅 Location :**Huansha Room-A (Building A,1st floor)** Or **Moon Bay Restaurant (Building B,1st floor)**
13:30-16:40	大会报告 Plenary Keynote Session 地点:C幢一楼启航厅 Location: **Qihang Hall (Building C, 1st Floor)**
13:30-15:00	长三角国际智能制造精准对接活动 The Yangtze River Delta International Intelligent Manufacturing Summit Forum 地点:A幢2楼启明厅 Location: **Qiming Room (Building A, 2nd Floor)**
18:30-20:30	晚宴 Banquet 地点:C幢1楼启航厅 Location:**Qihang Hall (Building C, 1st Floor)**

第二天(星期二, 2019.07.09)
Day 2 (Tuesday, 9 July 2019)

LPAM: 激光加工与增材制造 **LPAM:** Laser Processing and Additive Manufacturing
MPT: 制造工艺与技术 **MPT:** Machining Processes and Technologies
WJ:焊接与连接 **WJ:** Welding and Joining
DC: 设计与控制 **DC:** Design and Control

FALM: 第六届激光先进制造技术应用研讨会 **FALM:** The 6th Forum of Advanced Laser Manufacturing
分会场1(R-1): C幢1楼启航厅 Parallel Session Room 1 **(R-1):** Qihang Hall (Building C, 1st Floor)
分会场2(R-2): A幢2楼启明厅 Parallel Session Room 2 **(R-2):** Qiming Room (Building A, 2nd Floor)
分会场3(R-3): A幢3楼启缘厅 Parallel Session Room 3 **(R-3):** Qiyuan Room (Building A, 3rd Floor)
分会场4(R-4): A幢1楼浣纱B厅 Parallel Session Room 4 **(R-4)**: Huansha Room-B (Building A, 1st Floor)
茶歇地点:C幢1楼启航厅 **Tea break location: Qihang Hall (Building C, 1st Floor)**

分会场主题报告
Parallel Sessions:

8:30-10:10	**第六届激光先进制造技术应用研讨会1** **FALM -1** 地点: **R-1** Location: **R-1**	**激光加工与增材制造1** **LPAM-1** 地点: **R-2** Location: **R-2** **(8:50-10:10)**	**制造工艺与技术1** **MPT-1** 地点: **R-3** Location: **R-3**	**设计与控制1** **DC-1** 地点: **R-4** Location: **R-4**
10:10-10:30	茶歇 Tea break			
10:30-12:00	**第六届激光先进制造技术应用研讨会2** **FALM -2** 地点: **R-1** Location: **R-1**	激光加工与增材制造2 **LPAM-2** 地点: **R-2** Location: **R-2**	**制造工艺与技术2** **MPT-2** 地点: **R-3** Location: **R-3**	**设计与控制2** **DC-2** 地点: **R-4** Location: **R-4**
12:00-13:30	午餐 Lunch and break 地点:A幢1楼浣纱A厅或B幢1楼月亮湾餐厅 **Location:Huansha Room-A (Building A,1st floor)** Or **Moon Bay Restaurant (Building B,1st floor)**			
13:30-15:10	**第六届激光先进制造技术应用研讨会3** **FALM -3** 地点: **R-1** Location: **R-1**	**激光加工与增材制造3** **LPAM-3** 地点: **R-2** Location: **R-2**	**制造工艺与技术3** **MPT-3** 地点: **R-3** Location: **R-3**	**焊接与连接1** **WJ-1** 地点: **R-4** Location: **R-4**
15:10-15:30	茶歇 Tea break			
15:30-17:00	**第六届激光先进制造技术应用研讨会4** **FALM -4** 地点: **R-1** Location: **R-1**	**激光加工与增材制造4** **LPAM-4** 地点: **R-2** Location: **R-2**	**制造工艺与技术4** **MPT-4** 地点: **R-3** Location: **R-3**	**焊接与连接2** **WJ-2** 地点: **R-4** Location: **R-4**
17:30-18:30	晚餐 Dinner 地点:A幢1楼浣纱A厅或B幢1楼月亮湾餐厅 Location: **Huansha Room-A (Building A,1st floor)** Or **Moon Bay Restaurant (Building B,1st floor)**			

第三天(星期三, 2019.07.10)
Day 3 (Wednesday, 10 July 2019)

8:30-10:10	**第六届激光先进制造技术应用研讨会5** **FALM -5** 地点: **R-1** Location: **R-1**	**激光加工与增材制造5** **LPAM -5** 地点: **R-2** Location: **R-2**	**制造工艺与技术5** **MPT-5** 地点: **R-3** Location: **R-3**	**焊接与连接3** **WJ-3** 地点: **R-4** Location: **R-4**
10:10-10:30	茶歇 Tea break			
10:30-12:10	**第六届激光先进制造技术应用研讨会6** **FALM -6** 地点: **R-1** Location: **R-1**	**激光加工与增材制造6** **LPAM -6** 地点: **R-2** Location: **R-2**	**曼彻斯特大学LPRC校友研讨会** **The University of ManchesterLPRC Alumni Forum** 地点:**R-3(10:00-12:00)** Location: **R-3** **From 10:00 to 12:00**	
12:00-13:30	午餐 Lunch and break 地点:A幢1楼浣纱A厅或B幢1楼月亮湾餐厅 Location: **Huansha Room-A (Building A,1st floor)** Or **Moon Bay Restaurant (Building B,1st floor)**			
14:00-16:00	大会报告 Plenary Keynote Session 地点:C幢一楼启航厅 Location: **Qihang Hall (Building C, 1st Floor)**			
16:00–16:20	茶歇 Tea break			
16:20–17:00	闭幕式 Closing Ceremony 地点:C幢一楼启航厅 Location: **Qihang Hall (Building C, 1st Floor)**			
17:30-18:30	晚餐 Dinner 地点:A幢1楼浣纱A厅或B幢1楼月亮湾餐厅 Location: **Huansha Room-A (Building A,1st floor)** Or **Moon Bay Restaurant (Building B,1st floor)**			

会场分布图
Map of the Conference Rooms

第一天, 星期一, 2019.7.8
Day 1 (Monday, 8 July 2019)

8:00-8:30	注册 Registration
8:30-9:00	开幕式 Welcome and Opening (Chair: **Professor Jianhua Yao**) 地点：C幢1楼启航厅 Location: **Qihang Hall (Building C, 1st Floor)** 1. **Paulo Bartolo 教授** 40th MATADOR 大会主席 **Professor Paulo Bartolo** General Chair of 40th MATADOR Conference 2. **蔡袁强 教授** 浙江工业大学党委书记 **Professor Yuanqiang Cai** Chancellor of Zhejiang University of Technology 3. **王又良 教授** 中国光学学会激光加工专业委员会主任 **Professor Youliang Wang** Director of Laser Processing Committee of Chinese Optical Society 4. **罗平 女士** 长三角区域创新体系建设联席会议办公室轮值主席 安徽省科学技术厅副厅长 **Mrs. Ping Luo** Chair of The Yangtze River Delta Association Deputy Director of Science Technology Department of Anhui Province 5. **高鹰忠 先生** 浙江省科学技术厅厅长 **Mr. Yingzhong Gao** Director of Science Technology Department of Zhejiang Province 6. **蔡秀军 教授** 浙江省政协副主席 **Professor Xiujun Cai** Vice Chair of Zhejiang Provincial Committee of the Chinese People' s Political Consultative Conference
9:00-9:20	合影+茶歇 Photograph and Tea break
9:20-11:50	大会报告 第1场 Plenary Keynote Session 1 主持人：**Paulo Bartolo 教授** Chair: **Professor Paulo Bartolo**
9:20-9:50	大会报告 1：**谭建荣** 教授 中国工程院院士 浙江大学 **面向复杂装备的数字孪生关键技术及应用** Keynote 1: Professor Jianrong Tan Member of Chinese Academy of Engineering, Zhejiang University, China **Key Technologies and Applications of Digital Twin for Complex Equipment**

9:50-10:20	大会报告 2：**Paul Shore** 教授 英国皇家工程院院士 英国国家物理实验室工程部主任 **第四次工业革命的先进创新机械** 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	大会报告 3：**Jyoti Mazumdar** 教授 美国工程院院士 美国密歇根大学 **质量可信智能增材制造** Keynote 3: Professor Jyoti Mazumdar Member of National Academy of Engineering, **Quality Assured Smart Additive Manufacturing**
10:50-11:20	大会报告 4：**李琳 教授** 英国皇家工程院院士 英国曼彻斯特大学激光加工研究中心主任 **基于激光粉床选区熔化与定点送粉结合3D多材料一体及功能渐变构件增材制造** 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	大会报告 5：**Volodymyr Kovalenko** 教授 乌克兰国家工程院院士 乌克兰国立技术大学 浙江工业大学 **激光智能制造的历史与发展** 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 午餐

13:30-15:30	大会报告 第2场 Plenary Keynote Session 2 主持人：**Paul Mativenga** 教授 Chair: **Professor Paul Mativenga**

13:30-14:00	大会报告 6：**Paulo Bartolo** 教授 CIRP会士 英国曼彻斯特大学生物制造中心主任 **个性化医学中的增材制造** 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	大会报告 7：**觉文郁** 教授 中国台湾国立虎尾科技大学校长 **面向机床OT层的物联网技术及实现** Keynote 7: Professor Wen-Yuh Jywe President of National Formosa University, Taiwan **Implementation of "Internet of Things" Technology on Machine Tools from OT Layers**
14:30-15:00	大会报告 8：**王军** 教授 澳大利亚新南威尔士大学 **磨粒水射流加工技术探新** Keynote 8: Professor Jun Wang The University of New South Wales, Australia **A New Look into Abrasive Waterjet Machining Technologies**
15:00-15:30	大会报告 9：**姚建华** 教授 浙江工业大学机械工程学院院长，激光先进制造研究院院长 **激光表面工程技术研究进展与发展前景** Keynote 9: Professor Jianhua Yao Dean of College of Mechanical Engineering, Dean of Institute of Laser Advanced Manufacturing, Zhejiang University of Technology, China **Progress and Future Prospect of Laser Surface Engineering Research**
15:30-15:40	茶歇 Tea break
15:40-16:40	大会报告 第3场 Plenary Keynote Session 3 主持人：**陆永枫** 教授 Chair: **Professor Yongfeng Lu**
15:40-16:10	大会报告 10：**陈焱** 教授 大族激光智能装备集团总经理 **大族激光智能装备的创新与应用** Keynote10: Professor Yan Chen General Manager of Han' s Laser Smart Equipment Group Co., Ltd, China **Innovation and Application in Han' s Laser Smart Equipment**
16:10-16:40	大会报告 11：**叶健松** 教授 浙江省机电集团有限公司 **智能制造背景下人才培养方式的思考** Keynote 11: Professor Jiansong Ye Zhejiang Machinery and Electrical Group Co., Ltd, China **Thinking on talent training mode under the background of intelligent manufacturing**

13:30-15:00	长三角智能制造产学研精准对接 The Yangtze River Delta International Intelligent Manufacturing Summit Forum 地点：A幢2楼启明厅 Location: **Qiming Room** (Building A, 2nd Floor)
18:30-20:30	晚宴 Banquet 地点：C幢1楼启航厅 Location: **Qihang Hall (Building C, 1st Floor)**

第二天, 星期二, 2019.7.9
Day 2 (Tuesday, 9 July 2019)

分会场-1：C幢1楼启航厅
Parallel Session Room 1 (R-1): Qihang Hall (Building C, 1st Floor)

8:30-8:50	第六届先进激光制造论坛 The 6th Forum of Advanced Laser Manufacturing 开幕式 Opening Ceremony 主持人：**肖荣诗** 教授 Chair: **Professor Rongshi Xiao**
8:50-10:10	分会场FALM-1 Parallel Session **FALM-1** 地点：**R-1** Location: **R-1** 分会场主持人：**石世宏** 教授 Session chair: **Professor Shihong Shi** **苏州大学** **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** **激光-电弧复合热源焊接过程中两种热源相互作用规律的探索**
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** **激光熔覆CoCrFeNiTi高熵合金涂层的组织及性能**
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** **激光增材再制造用交变磁场同步耦合装置设计**
9:40-9:55	F20-**Hao Su** Soochow University, China **Algorithm and Implementation of Consistent Overlap Ratio of Free-form Surface Laser Cladding** **自由曲面激光熔覆熔道搭接率一致性算法及实现**
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** **GH3128薄板光纤激光密集焊接变形规律模拟与试验研究**

10:10-10:30	茶歇 Tea break
10:30-12:05	分会场FALM-2 Parallel Session **FALM-2** 地点：**R-1** Location: **R-1** 分会场主持人：**张群莉** 教授 Session chair: **Professor Qunli Zhang** 浙江工业大学 **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** **镍基合金箔片激光焊接头热裂纹分析**
10:50-11:05	F10-**Huan Li** Jiangnan University, China **Wear Performance of Laser Induced Arc Welding of High Boron and High Carbon Steel** **高硼高碳激光诱导电弧堆焊层的磨损性能研究**
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** **开放环境Ti-6Al-4V合金激光熔覆的气体保护特性研究**
11:20-11:35	F04-**Weizhe Du** Beijing University of Technology, China **304 Stainless Steel Foil Laser Micro Welding with Argon Gas Protection** **氩气保护304不锈钢箔激光微焊接工艺**
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** **316L超薄板激光焊接屈曲变形的数值模拟研究**
11:50-12:05	F11-**Yuke Huang** Nanjing Agricultural University, China **Experimental Investigation on Picosecond Laser Induced Plasma Micromachining** **皮秒激光诱导等离子体微加工工艺研究**

分会场-2：A幢2楼启明厅
Parallel Session Room 2 (**R-2**): Qiming Room (Building A, 2nd Floor)

8:50-10:15	分会场LPAM-1 Parallel Session **LPAM-1** 地点：**R-2** Location: **R-2** 主持人：**Volodymyr Kovalenko 教授** Session chair: **Professor Volodymyr Kovalenko** **乌克兰国立科技大学** **浙江工业大学** **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** **基于不同波长、脉冲时间和方法的丁腈橡胶激光钻孔试验研究**
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** **先进Stellite合金硬面材料的耐磨损性能研究**
9:30-9:45	25-**Mengya Cui** Beijing University of Technology, China **Three-Dimensional Mn/MnOx Electrode for Supercapacitor** **用于超级电容的三维Mn/MnOx电极**
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** **纳秒光纤激光制备高质量钛金属微通道的工艺优化及冶金特性表征**
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** **激光表面重熔和去合金化制备用于SERS平台的多孔Si结构**
10:15-10:30	茶歇 Tea break
10:30-12:05	分会场LPAM-2 Parallel Session **LPAM-2** 地点：**R-2** Location: **R-2** 主持人：**叶云霞** 教授 Session chair: **Professor Yunxia Ye** **江苏大学** **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** **准连续波长激光增材制造微观结构调控研究**
10:50-11:05	Invited speaker (137): **Professor Guangyi Ma** Dalian University of Technology, China **Effect of Graphite Addition on Mechanical Properties of Direct Laser Deposited Al2O3 Ceramics** **石墨添加对激光直接沉积Al2O3陶瓷力学性能的影响**
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** **激光复合制造Inconel 718合金的双晶结构及力学性能调控**
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** **超音速激光沉积Ti-6Al-4V合金的结合机制及数值模拟**
11:35-11:50	130-**Hui Chen** Beijing Institute of Technology, China **Research on Force Measurement Intelligent Boring Bar system for Boring Process** **用于钻孔工艺的测力智能镗杆系统研究**
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** **激光固溶强化17-4PH沉淀硬化不锈钢的抗汽蚀性能研究**

分会场-3：A幢3楼启缘厅
Parallel Session Room 3 (R-3): Qiyuan Room (Building A, 3rd Floor)

8:30-10:20	分会场MPT-1 Parallel Session **MPT-1** 地点：**R-3** Location: **R-3** 分会场主持人：**曾晰** 教授 Session chair: **Professor Xi Zeng** **浙江工业大学** **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** **SLM718铬镍铁合金高剪切低压力磨削工艺试验研究**

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** **脉冲鉴别和声发射信号的微细电火花加工过程控制**
9:05-9:20	92-**Gengzhuo Li** Southern University of Science and Technology, China **Elliptic Ultrasonic Assisted Fixed-Abrasive CMP of Si Wafer** **椭圆超声辅助的硅片固定研磨CMP**
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** **采用溶胶-凝胶和氧化铝砂轮进行热机加工的先进高强度钢的易磨性研究**
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** **CFRP/Ti叠层钻孔过程中的加工表面完整性**
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** **加工工艺参数对高导电新一代铝合金线切割的影响研究**
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** **高速铣削中主轴转速变化对颤振稳定性限制的影响**
10:20-10:30	茶歇 Tea break
10:30-12:00	分会场MPT-2 Parallel Session **MPT-2** 地点：**R-3** Location: **R-3** 分会场主持人：**田业冰** 教授 Session chair: **Professor Yebing Tian** 山东理工大学 **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** **整体叶盘制造的电弧扫描加工与现有技术的比较**
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** **用新设计的磁流变精加工工具对半球形盲孔表面进行纳米精加工**

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** **工件表面软质磨料流动的发生率及其加工特性的研究**
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** **利用植物油的少量润滑技术的铝合金高速加工**
11:30-11:45	199- Tai-Wei Chiu Institute For Information Industry, Taichung, Taiwan **Implementation of Communication Protocol for Machine Tool in Reference Architecture of Fog Computing** **机床通信协议在雾计算参考体系结构中的实现**
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** **机器学习在预测铣削过程稳定波瓣图和表面定位误差中的应用**

分会场-4：A幢1楼浣纱厅B
Parallel Session Room 4 (R-4): Huansha Room-B (Building A, 1st Floor)

8:30-10:05	分会场DC-1 Parallel Session **DC-1** 地点：**R-4** Location: **R-4** 分会场主持人：**朴钟宇 教授** Session chair: **Professor Zhongyu Piao** 浙江工业大学 **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** **钢包浇筑过程中自由下沉涡流多物理场模型构建及振动特性分析**
8:50-9:05	19-Chao Chen Zhejiang University of Technology, China **Digital Technologies in Accurate Soft Tissue Reconstruc-tionfor Head and Neck Tumor Resection** **头颈部肿瘤切除手术中软组织重构的数字化技术**
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** **基于层次控制的分布式驱动电动汽车扭矩协调控制**

9:20-9:35	30-Xiangqi Ni Zhejiang University of Technology, China **Pneumatic Soft Robotic Gripper Embedded with Multi-stable Structure** **嵌入式多稳定结构的气动柔性机器人夹具**
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** **基于分形维数分析的Ti-6Al-4V熔粉体表面结构表征**
9:50-10:05	59-Yongli Huang Zhejiang University of Science and Technology, China **Intelligent Monitoring System for Water leakage prevention of Public Facilities** **公共设施防漏智能监控系统**
10:05-10:30	茶歇 Tea break
10:30-11:20	分会场DC-2 Parallel Session **DC-2** 地点：**R-4** Location: **R-4** 分会场主持人：**谭大鹏 教授** Session chair: **Professor Dapeng Tan** **浙江工业大学** **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** **变刚度多稳态复合结构的系统分析及其在人体外骨骼中的应用前景**
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** **新型集成多稳态结构与有机太阳能电池的太阳能跟踪模型**
11:05-11:20	38-Taotao Xu Zhejiang University of Technology, China **Error Analysis of 5-PSS/UPU Parallel Mechanism Considering Ball Joint Clearance** **考虑球头间隙的5-PSS/UPU并联机构误差分析**

12:00-13.30
Lunch and break 午餐

分会场-1：C幢1楼启航厅
Parallel Session Room 1 (R-1): Qihang Hall (Building C, 1st Floor)

13:30-15:20	分会场FAML-3 Parallel Session **FALM-3** 地点：**R-1** Location: **R-1** 分会场主席：**张冬云 教授** Session chair: **Professor Dongyun Zhang** **北京工业大学** **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** **金属丝材3D打印与工程化**
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** **高精度激光冲击压印成型数值仿真及实验研究**
14:05-14:20	F12-Rui Xiao Shanghai University of Engineering Science, China **Joining Mechanism of Dissimilar Aluminum/steel Joints by Laser Spot Welding** **铝/钢异种金属激光点焊连接机理研究**
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** **激光熔覆时基材倾角对熔覆层形貌的影响**
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** **激光内送粉高速熔覆Cr50Ni合金稀释率及单道形貌影响分析**
14:50-15:05	F05-Xue Han Beijing University of Technology, China **The Study on Plume Characteristics of 10 kW level Fiber Laser Welding** **万瓦级光纤激光焊接羽辉特性研究**
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** **三光束光内送丝激光熔覆温度场仿真分析与工艺优化**
15:20-15:30	茶歇 Tea break

15:30-16:50	分会场FALM-4 Parallel Session **FALM-4** 地点：**R-1** Location: **R-1** 分会场主持人：**石岩 教授** Session chair: **Professor Yan Shi** 长春理工大学 **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** **激光选区熔化(SLM)技术研究进展**
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** **光粉耦合模式对激光熔覆成形表面粗糙度影响研究**
16:05-16:20	F06-Lin Luan Beijing University of Technology, China **Effect of Laser Remelting on Al/Cu Diffusion Bonding Interface** **激光重熔对铝/铜扩散连接界面的影响**
16:20-16:35	F19-Cheng Peng Soochow University, China **Study on Temperature Control of Powdered Pool in Hollow Laser Light** **中空激光光内送粉熔池温度控制研究**
16:35-16:50	F27-Guangtian Han Shenyang Jianzhu University, China **Study on the Surface Quality of ZrO2 Ceramics Bearing by Diamond Grinding Wheel** **金刚石砂轮磨削轴承用ZrO2陶瓷表面质量研究**

分会场-2：A幢2楼启明厅
Parallel Session Room 2 (R-2): Qiming Room (Building A, 2nd Floor)

13:30-15:20	分会场LPAM-3 Parallel Session **LPAM-3** 地点：**R-2** Location: **R-2** 分会场主持人：**董世运 教授** Session chair: **Professor Shiyun Dong** **装备再制造技术国家重点实验室** **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** **激光微熔覆和去合金化制备用于锂离子电池的多孔Si/Cu结构**

13:50-14:05	107-Ahmed Alghamdi The University of Manchester, Manchester, UK **Optimisation of Laser Micromachining of multilayer coated cutting tools** **多层涂覆切削工具的激光微细加工工艺优化**
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** **飞秒激光加工Si材料的结构响应研究**
14:35-14:50	201-Boyang Huang The University of Manchester, Manchester, UK **Electro-active scaffolds for bone tissue regerenation** **用于骨组织再分化的电活性支架**
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** **高功率脉冲激光与传统金刚石CAD/CAM铣削制备牙科陶瓷效率的比较研究**
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** **激光熔覆碳纳米管增强IN718合金的元素偏析和Laves相形成研究**
15:20-15:30	茶歇 Tea break
15:30-17:20	分会场LPAM-4 Parallel Session **LPAM-4** 地点：**R-2** Location: **R-2** 分会场主持人：**黄婷 教授** Session chair: Professor Ting Huang **北京工业大学** **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** **激光熔敷Inconel 718合金在不同热处理条件下的热腐蚀行为**
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** **低成本、易组装、生物兼容性好的爆炸伤骨科治疗**

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.** **纳秒脉冲激光在反应键合的SiC表面制备高密度自组织微体**
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** **添加锯切策略对低功率脉冲光纤激光微钻Monel k500高温合金的孔特性研究**
16:35-16:50	140-Ye Wang Zhejiang University of Technology, China **Effect of LSM Pretreatment with Different Energy Density on MAO-treated Ti-6Al-4V Alloy and Corrosion Resistance** **不同能量密度激光熔凝预处理对Ti6Al4V合金微弧氧化成膜影响及耐蚀性研究**
16:50-17:05	173-Wangfan Zhou Jiangsu University, China **Modelling Plastic Deformation Induced by Laser Shock using 3D Discrete Dislocation Dynamics** **基于三维离散位错动力学的激光冲击塑性变形模拟**
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** **超音速激光沉积WC/Cu复合涂层的微观结构表征及性能评估**

分会场-3：A幢3楼启缘厅
Parallel Session Room 3 (R-3): Qiyuan Room (Building A, 3rd Floor)

13:30-15:05	分会场MPT-3 Parallel Session **MPT-3** 地点：**R-3** Location: **R-3** 分会场主持人：**裴植 教授** Session chair: **Professor Zhi Pei** **浙江工业大学** **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** **人工下颌种植体的拓扑优化设计与3D打印**
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** **基于最小成本和能量的切削条件选择**

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** **一个利用大数据分析提高加工性能的框架**
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** **高体积分数SiCP/Al复合材料超声钻削的试验研究**
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** **不同电介质在高纵横比微电极制造中的影响**
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** **监控超精密加工铣削过程的智能铣刀架的设计和分析**
15:05-15:30	茶歇 Tea break
15:30-16:45	分会场MPT-4 Parallel Session **MPT-4** 地点：**R-3** Location: **R-3** 分会场主持人：**刘云峰 教授** Session chair: **Professor Yunfeng Liu** **浙江工业大学** **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** **新型钻具加工混合微尺度织构的切削力和温度的实验和理论研究**
15:45-16:00	160-Shuyao Liu Beijing Institute of Technology, China **A Smart Boring Bar for Compensation of Radial Deformation during Machining** **用于补偿加工过程中径向变形的智能镗杆**
16:00-16:15	170-Koushik Mishra Jadavpur University, Kolkata, India **Influence of Different Featured Tools on Machining Accuracy in Electrochemical Milling** **不同特征刀具对电化学铣削加工精度的影响**
16:15-16:30	172-Tatsuya Shitara Keio University, Japan **Direct Observation of Discharging Phenomena in Vibration-assisted Micro Electrical Discharge Machining** **振动辅助微细电火花加工中放电现象的直接观**

16:30-16:45	174-Talwinder Singh Bedi Indian Institute of Technology Ropar, Rupnagar, India **Magnetorheological Methods for Internal Cylindrical Surface Finishing - A review** **内圆柱表面精加工的磁流变方法-综述**

分会场-4：A幢1楼浣纱厅B
Parallel Session Room 4 (R-4): Huansha Room-B (Building A, 1st Floor)

13:30-15:05	分会场WJ-1 Parallel Session **WJ-1** 地点：**R-4** Location: **R-4** 分会场主持人：**肖荣诗 教授** Session chair: **Professor Rongshi Xiao** **北京工业大学** **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** **铝合金焊接熔池的初始非稳定性研究**
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** **基于515nm碟片式激光器的铜合金高效微焊接技术研究**
14:05-14:20	16-Qiang Wu Beijing University of Technology, China **Research on GH3128 Spot Welding by Fiber Laser Focus Point Rotation Process** **基于光纤激光焦点转动的GH3128点焊研究**
14:20-14:35	61- Susmita Datta Institute of Technology Kharagpur, Kharagpur, India **Effect of Welding on Mechanical Performance of Laser Welded NiTinol Samples** **焊接过程对于NiTinol激光焊接试件力学性能的影响研究**
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** **AA6061-T6 和 AISI304搅拌摩擦焊中金属间化合物的纳米压痕研究**
14:50-15:05	184-Dhira Kumar Jadavpur University, Kolkata, India **Experimental Investigation on Low Power Laser Transmission Welding of Transparent Polypropylene** **透明聚丙烯低能量激光透射焊接试验研究**
15:20-15:30	茶歇 Tea break

15:30-16:45	分会场WJ-2 Parallel Session **WJ-2** 地点：**R-4** Location: **R-4** 分会场主持人：**杨建国 教授** Session chair: **Professor Jianguo Yang** **浙江工业大学** **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** **316L奥氏体不锈钢和409铁素体不锈钢异种材料连接的试验、分析及优化**
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** **摩擦头速度对于摩擦烧结制备大尺寸泡沫铜影响的研究**
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** **基于无损检测技术的铜-铝搅拌摩擦焊接头表面质量研究**
16:15-16:30	206-Dr. 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** **高温热处理对于熔盐堆用石墨-镍基高温合金钎焊接头组织及性能影响研究**
16:30-16:45	211-Sai Wang Zhejiang University of Technology, China **Welding Distortion Straightening Technique by TIG Method** **焊接变形的TIG热矫正技术研究**

第三天(星期三, 2019.07.10)
Day 3 (Wednesday, 10 July 2019)

分会场-1：C幢1楼启航厅
Parallel Session Room 1 (R-1): Qihang Hall (Building C, 1st Floor)

8:30-10:20	分会场FALM-5 Parallel Session **FALM-5** 地点：**R-1** Location: **R-1** 分会场主持人：**季凌飞 教授** Session chair: **Professor Lingfei Ji** **北京工业大学** **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** **国产激光装备发展现状及典型应用**

8:50-9:05	F14-Yinfen Cheng Southwest Jiaotong University, China **Effect of Narrow Pulse Width Laser Cleaning on Corrosion Performance of Aluminum Alloy** **窄脉宽激光清洗对铝合金腐蚀性能的影响**
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** **高性能组合增材制造工艺诱导的Ti6Al4V合金构件的微观结构演变和机械性能改善**
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** **超音速激光沉积WC/Stellite-6 复合涂层粒子结合行为和结合强度分析**
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** **H13钢表面激光熔覆铁基复合涂层的机械和电化学腐蚀性能**
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 激光熔覆IN939高温合金热处理组织演变机制研究
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** **电磁感应耦合对42CrMo轴承钢激光深层淬火淬硬深度的影响**
10:20-10:30	茶歇 Tea break
10:30-12:00	分会场FALM-6 Parallel Session **FALM-6** 地点：**R-1** Location: **R-1** 分会场主持人：**马广义 教授** Session chair: **Professor Guangyi Ma** **大连理工大学** **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** **飞秒激光微焊接玻璃工艺研究**
10:45-11:00	F09-Le Zhao Beijing University of Technology, China **Study on Formation of Key Hold of High Power Fiber Laser** **高功率光纤激光深熔焊接小孔形成过程研究**

11:00-11:15	F32-Zhongyao Cai Zhejiang University of Technology, China **Study on Process and Properties of Laser Cladded Fe-based Wear Resistant Coatings on Inner Wall of Barrel** **机筒内壁激光熔覆铁基耐磨涂层的工艺与性能研究**
11:15-11:30	F26-Weiwei Jiang Soochow University, China **Prediction of Geometrical Shape of Coaxial Wire Feeding Cladding in Three Beam** **三分光束光内同轴送丝熔覆层几何形貌预测**
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** **大气环境下氩气流量对激光熔覆TC4钛合金氧化敏感性的影响**
11:45-12:00	F02-Mingyu Cheng Beijing University of Technology, China **Fabrication of Dye-sensitized Solar Cell TiO2 Photocathode by Femtosecond Laser Etching Combined Hydrothermal Method** **飞秒激光刻蚀复合水热法制造染料敏化太阳能电池TiO2光阳极**

分会场-2：A幢2楼启明厅
Parallel Session Room 2 (R-2): Qiming Room (Building A, 2nd Floor)

8:30-10:15	分会场LPAM-5 Parallel Session **LPAM-5** 地点：**R-2** Location: **R-2** 分会场主持人：**姚喆赫 教授** Session chair: **Professor Zhehe Yao** **浙江工业大学** **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** **超精密机床用液膜轴承导轨**
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** **基于金属粉末床熔融成形零件的力学性能表征方法**
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** **基于SLM和LW的个性化语言支架的数字化设计与制造**
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** **激光沉积增材制造残余应力的数值模拟及尺寸效应研究**

9:30-9:45	66-Lu Yao Shenzhen Technology University, China **Study on the Performance of 3D Printing in Oral Cavity** **口腔三维打印的性能研究**
9:45-10:00	73-XiaoqingTian Hefei University of Technology, China **Tensile Properties in Adaptive Sliced Additive Manufacturing of Silicone Elastomer** **自适应切片增材制造Si弹性体的拉伸性能**
10:00-10:15	23-Wenhao Wang Beijing University of Technology, China **Processing of Submicron Spiral Grooves on Spherical Surface by Picosecond Laser** **皮秒激光加工球面亚微米螺旋槽**
10:15-10:30	茶歇 Tea break
10:30-12:20	分会场LPAM-6 Parallel Session **LPAM-6** 地点：**R-2** Location: **R-2** 分会场主持人：**宋立军 教授** Session chair: **Professor Lijun Song** **湖南大学** **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** **超声振动对激光金属成形的影响**
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** **SMD工艺对316L不锈钢粉末原料的比较研究**
11:05-11:20	157-Weiguang Wang The University of Manchester, Manchester, UK **Engineering the PCL/grapheme Scaffold with Additive Manufacturing for Bone Regeneration** **用于骨再生的PCL/石墨烯支架增材制造研究**
11:20-11:35	64-Mohammad Shahid Raza Indian Institute of Technology Kharagpur, Kharagpur, India **Thermo–mechanical Monitoring and Analysis of Multipass-Laser Forming of Stainless Steel** **不锈钢多道激光成形的热-力监测与分析**
11:35-11:50	144-Rajkumar Velu 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** **基于机器人的模具3D打印用高性能热塑性工程塑料的评价：支持自动纤维放置过程的关键因素**
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** **基于灵敏度分析法的不同环境下激光切割Inconel合金的质量对比研究**
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** **IR辅助PA-6/碳纤维自动预置速度对3D打印PEI模具的影响研究**

分会场-3：A幢3楼启缘厅
Parallel Session Room 3 (R-3): Qiyuan Room (Building A, 3rd Floor)

8:30-9:20	分会场MPT-5 Parallel Session **MPT-5** 地点：**R-3** Location: **R-3** 分会场主持人：**李吉泉 教授** Session chair: **Professor Jiquan Li** **浙江工业大学** **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** **磨粒精密加工技术研究**
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** **微细电火花加工中各种制造方法制备的微型工具最终形状的演变**
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** **机器学习技术在预测使用金属陶瓷刀尖电火花加工硬化EN31钢的表面粗糙度方面的应用**
9:20-9:35	150-Syuhei Kurokawa Kyushu University, Japan **Acceleration of CO_2 Absorption Rate of Temperature-responsive Hydrogels by Precision Machining and Spray Coating Process** **利用精密加工和喷涂工艺加速温度响应水凝胶的CO_2吸收速率**
9:35-10:00	茶歇 Tea break
10:00-12:00	**曼彻斯特大学LPRC校友研讨会** **The University of Manchester LPRC Alumni Forum** **地点：R-3** Location: **R-3** 分会场主持人：**李琳 教授** Session chair: **Professor Lin Li** **英国曼彻斯特大学** **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** **黑色金属部件的激光增材制造与再制造**
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** **脉冲宽度对激光钻孔碳纤维增强塑料(CFRP)的影响及增强钻孔质量的策略研究**
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** **激光填丝焊6082铝合金的熔滴迁移行为研究**
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** **HR-2抗氢脆不锈钢的选择性激光熔化成形微观结构及力学性能**
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** **激光冲击对激光增材制造熔覆层残余应力影响的数值模拟研究**
11:40-12:00	Invited speaker: Dr. Yanqun Tong Zhenjiang University, China **Laser cleaning and surface modification of CFRP** **CFRP的激光清洗和表面改性**

分会场-4：A幢1楼浣纱厅B
Parallel Session Room 4 (R-4): Huansha Room-B (Building A, 1st Floor)

8:30-9:50	分会场WJ-3 Parallel Session **WJ-3** 地点：**R-4** Location: **R-4** 分会场主持人：**李福泉 教授** Session chair: **Professor Fuquan Li** **哈尔滨工业大学** **Harbin Institute of Technology, China**
8:30-8:50	Invited Speaker (210)-Dr. Yinghe Ma Zhejiang University of Technology, China **High Energy Deposition of TiN Coating with Pulse Enhanced Vacuum Arc Evaporation** **基于脉冲电弧沉积的高能TiN膜沉积技术**
8:50-9:05	142-Md Perwej Iqbal Indian Institute of Technology, Kharagpur, India **A Study on Welding Force, Torque and Temperature Evolution during Friction Stir Welding of Aluminum Pipes** **铝合金管搅拌摩擦焊过程中压力、扭矩及温度演变行为研究**
9:05-9:20	40-Shihui Guo Beijing University of Technology, China **Characteristics of Welding Mode Transition Induced during 1-μm and 10-μm Laser Welding** **1-μm和10-μm激光切换所导致的激光焊接模式转变特性研究**
9:20-9:35	45-Jingquan Zhang Beijing University of Technology, China **Weld Formation Mechanism of Laser Pressure Welding** **激光压力焊的焊接接头形成机理研究**
9:35-9:50	68-Zhenyu Zhou Zhejiang University of Technology **Wear Behavior of 7075-Aluminum After Ultrasonic-assisted Surface Burnishing** **7075铝合金超声辅助表面辊压之后磨损特性研究**
9:50-10:05	128-Wenhua Tong Zhejiang University of Technology, China **Temperature Field Evolution and Analysis of Laser Deep Quenching of 42CrMo Steel** **42CrMo钢激光深层淬火的温度场演化及分析**

12:00-13:30
Lunch and break 午餐

14:00-17:00	大会报告 第4场 Plenary Keynote Session 4 主持人：**Paulo Bartolo教授** Chair: **Professor Paulo Bartolo** 地点：C幢一楼启航厅 Location: Qihang Conference Hall (Building C, 1st Floor)
14:00-14:30	大会报告 12：陆永枫 教授 美国内布拉斯加州大学林肯分校 **基于混合树脂的纳米级功能结构3D打印** Keynote12: Professor Yongfeng Lu University of Nebraska-Lincoln, USA **Nano-scale 3D Printing of Functional Structures using Blended Resin Mixtures**
14:30-15:00	大会报告 13：**阎纪旺 教授** 日本庆应义塾大学 **制造研发文化效应—日本、美国、中国、欧洲之对比** 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	大会报告 14：**Paul Mativenga 教授** 英国曼彻斯特大学 **绿色制造重大挑战—创造未来** Keynote14: Professor Paul Mativenga The University of Manchester, UK **Engineers and the Grand Challenge of Waste :Engineering the Future**
15:30-16:00	大会报告 15：**李其朋 教授** 浙江科技学院 **杭叉集团工业车辆的智能制造实践** Keynote15: Professor Qipeng Li Zhejiang University of Science & Technology, China **Intelligent Manufacturing Practice of Industrial Vehicles of Hangcha Group**
16:00-16:20	茶歇 Tea break
16:20-17:00	闭幕式 Closing Ceremony 主持人：**Rongshi Xiao 教授/ Paulo Bartolo 教授** Chair: **Professor Rongshi Xiao/Professor Paulo Bartolo**

大会报告演讲人简介
Plenary Keynote Speaker Biographies


谭建荣

面向复杂装备的数字孪生关键技术及应用
Key Technologies and Applications of Digital Twin for Complex Equipment

谭建荣，中国工程院院士，浙江大学求是特聘教授，担任浙江大学机械工程学院设计工程及自动化系系主任，浙江大学流体动力与机电系统国家重点实验室学术委员会副主任、浙江大学CAD&CG国家重点实验室学术委员会委员，中国机械工程学会副理事长、中国图学学会副理事长、教育部工程图学教学指导委员会主任，先后获首届“国家杰出青年科学基金”、“中青年图形科技跨世纪人才”、国务院政府特殊津贴、国家863计划自动化领域CIMS主题设计自动化专题专家、国家“百千万人才第一二层次”、“科技部十一五国家科技计划执行突出贡献奖”等荣誉和称号。提出了多品种大批量定制设计技术、多性能数字化样机设计技术和多参数分析与匹配设计技术，研究成果获国家科技进步二等奖4项，省部级科技进步一等奖7项，教学成果获国家级优秀教学成果奖3项，其中一等奖1项，二等奖2项。近年来在国内外重要学术期刊发表的高水平论文185篇，其中SCI/EI检索142篇，引用1600多次，出版学术专著9本。2007年当选中国工程院院士。

Professor Jianrong Tan, Academician of Chinese Academy of Engineering, Zhejiang University, China. Professor Tan’s research field is in mechanical design and digital manufacturing. He has put forward the combination of batch and custom mass customization design technology, engineering transition state with fuzzy state, random state model and digital prototype integrated simulation technology, and integrated numerical and geometric complicated equipment multi-unit association, with multi-level configuration and parameter matching analysis technology. He has won 7 national awards, and 7 provincial awards. He has 12 computer software copyrights, which have been successfully applied in a number of manufacturing enterprises. He has published 8 books, 142 papers in SCI/EI journals. In 2007, was elected to the Chinese Academy of Engineering.


Paul Shore

第四次工业革命的先进创新机械
“Creating Advanced Machinery for the 4th Industrial Revolution”

Paul Shore教授，英国皇家工程院院士，国家物理实验室工程部主任，该实验室是英国最大的应用物理组织。Paul Shore教授曾任Cranfield University精密工程系教授，并于2002年至2015年作为精密工程学院院长。同时，Paul Shore教授还在国际SKF集团担任多项技术职务，他曾经在荷兰和瑞典工作过，引进了关键的新生产系统和工艺，开拓了新的市场，主要用于风力涡轮机的大型轴承制造。2011-2013年间，Paul Shore教授担任欧洲精密工程和纳米技术协会（EUSPEN）主席。

Professor Paul Shore, Fellow of Royal Academy of Engineering, UK, Director of Engineering, National Physical Laboratory, which is the national measurement standards laboratory for the United Kingdom and is the largest applied physics organization in the UK. Paul was Professor of Precision Engineering at Cranfield University and led it’s Precision Engineering Institute from 2002- 2015. Paul also held a number of technical positions at the International SKF Group. He worked in the Netherlands and Sweden, introducing pivotal new production systems and processes that opened up new markets such as large scale bearings applied to wind turbines. Paul was the President of the European Society for Precision Engineering and Nanotechnology (EUSPEN) from 2011-2013.

Jyoti Mazumder

质量可信智能增材制造
“Quality Assured Smart Additive Manufacturing”

Jyoti Mazumder 教授, 美国工程院院士, 美国密歇根大学机械工程学院终身教授, 密歇根大学激光辅助智能制造中心主任。已发表400多篇论文和书籍, 主要研究包括激光化学气相沉积和激光材料加工。同时, 还拥有23项美国专利, 其中一些激光焊接专利已经授权给福特汽车公司。2003年获得美国激光学会(Laser Institute of America)的Schowlow奖, 2006年获得美国机械工程师协会(ASME)的William T Ennor制造奖, 2010年获得ASME的Thomas A Edison专利奖, 发明了第一个闭环直接金属沉积系统, 1986年获得美国机械工程师协会的制造工程师奖。曾任美国激光学会主席和《Journal of Laser Applications》主编。

Professor Jyoti Mazumder, Member of National Academy of Engineering, University of Michigan, USA, a Robert H. Lurie Professor of Engineering in the Department of Mechanical Engineering and Materials Science and Director of Center for Laser Aided Intelligent Manufacturing. He has published more than 400 papers, co-authored books on Laser Chemical Vapor Deposition and Laser Materials Processing. He holds 23 U.S patents. Some of his laser-welding patents have been licensed to Ford Motor Company. He has received Schawlow Award for seminal contribution to Laser application research from Laser Institute of America in 2003, William T Ennor Award for manufacturing from ASME in 2006, Thomas A Edison Patent Award from ASME in 2010 for inventing the first closed loop Direct Metal Deposition system, Manufacturing Engineer of the Year (1986) from Society of Manufacturing Engineer. He had served as the President of Laser Institute of America and Editor-in-Chief of Journal of Laser Applications.

李　琳

基于激光粉床选区熔化与定点送粉结合3D多材料一体及功能渐变构件增材制造
“Additive Manufacture of 3D Multi-Material and Functionally Graded Components using Innovative Multiple Jet Laser Powder Bed Fusion”

李琳教授, 英国皇家工程院院士, 英国曼彻斯特大学激光加工研究中心主任、工程及物理学部副部长, 曾任美国激光学会主席, 英国工业激光协会副主席, 国际光子科学及激光工程学会主席。在激光加工和创新制造方面已经发表380多篇论文, 并拥有60多项专利。2013年, 李琳教授获得了英国皇家工程院颁发的Frank Whittle 爵士勋章(英国工程最高成就奖之一), 以表彰其在创新制造技术领域中的杰出成就及产生的经济社会效益。他因在微/纳米光子科学方面的研究而于2014年获得英国皇家学会的Wolfson研究奖, 并获得英国机械工程师学会的Charles Main奖。李琳教授是本届大会的共同主席。

Professor Lin Li, Fellow of Royal Academy of Engineering, UK, is the Director of Laser Processing Research Centre and Associate Dean of Faculty of Science and Engineering at The University of Manchester. He is the author or co-author of 380 publications in peer-reviewed journals and 60 patents related to laser processing and innovative manufacturing. He served as the President of Laser Institute of America, President of International Academy of Photonics and Laser Engineering, and President of Association of Industrial Laser Users (UK). He received Sir Frank Whittle Medal from the Royal Academy of Engineering, 2013 for his innovative manufacturing that has led to wide commercial applications. He received the Wolfson Research Merit Award from the Royal Society in 2014 for his research in micro/nano photonic science. He received Charles Main Award from the UK Institution of Mechanical Engineers for his work in laser based nuclear decommissioning. He is the co-chairman of the 40th MATADOR conference.


Volodymyr Kovalenko

激光智能制造技术的历史与进展
"History and Progress of Laser Intelligent Manufacturing"

弗拉季米尔·科瓦连柯（Volodymyr Kovalenko），科学博士，教授，乌克兰国家工程院院士，乌克兰国立科技大学激光技术研究所所长，中国国家特聘专家，曾任乌克兰国家工程院副院长。2011年，获得中国政府国家友谊奖和浙江省西湖友谊奖。国际生产工程研究学会（CIRP）会士，美国激光学会（LIA）会士、美国传记研究协会顾问委员会顾问等。1964年开始从事激光加工技术的研究，在激光技术领域享誉全球，其研究水平被国际同行认可，共发表论文论著700余篇，其中论著33部，在乌克兰、俄罗斯、美国、保加利亚、中国等国出版，申请发明专利140余项。主要研究方向包括激光设备研制，激光测量、光源、光学聚焦系统研究，激光焊接、激光切割、激光熔覆、激光强化工艺及新型材料加工技术研究。Volodymyr Kovalenko院士于2004年开始与浙江工业大学开展合作，联合开展激光制造关键单元装备与成套装备集成技术研究，合作研究成果"激光表面复合强化与再制造关键技术与装备应用"作为庆祝改革开放40周年引才引智成果，在第十六届中国国际人才交流大会现场展出。

Prof. Volodymyr Kovalenko is the Academician of the Ukrainian National Academy of Engineering, the Director of the Institute of Laser Technology of the Ukrainian National University of Science and Technology, National Distinguished Expert of China, and the former vice-president of the Ukrainian National Academy of Engineering. In 2011, He won the National Friendship Award of the Chinese government and the West Lake Friendship Award of Zhejiang province. He is the Fellow of the International Academy for Production Engineering (CIRP), the Fellow of American Laser Society (LIA) and the Advisory Committee of the American Biographical Research Association. Since 1964, he has been engaged in the research of laser processing technology. He has published more than 700 publications, among which, 33 books have been published in Ukraine, Russia, the United States, Bulgaria, China and other countries. He has applied for more than 140 invention patents. The main research areas include laser equipment development, laser measurement, light source, optical focusing system research, laser welding, laser cutting, laser cladding, laser strengthening technology etc. In 2004, Prof. Kovalenko began to cooperate with Zhejiang University of Technology.


Paulo Bartolo

个性化医学中的增材制造
"Personalised Medicine through Additive Manufacturing"

Paulo Bartolo教授，英国曼彻斯特大学生物制造中心主任，国际生产工程协会（CIRP）会士。他于2001年在University of Reading，UK获得高分子物理博士学位，1996年在Technical University of Lisbon获得机械工程硕士学位。Paulo Bartolo教授是CIRP中STC E分会的主席。1996.10-1997.10，他曾担任Mechanical and Civil Engineering Department (ESTG/IPL), University of Leiria的院长，葡萄牙增材制造中心主任。目前担任国际期刊《Journal of Rapid and Virtual Prototyping》和《Biomanufacturing Reviews》的主编。Paulo Bartolo教授是本届大会的主席。

Professor Paulo Bartolo, Fellow of CIRP (International Academy of Production Engineering), Director of Bio-manufacturing Centre, at The University of Manchester, UK. He holds a PhD degree in Polymer Physics from the University of Reading (UK, 2001), a MSc degree in Mechanical Engineering (1996) from the Technical University of Lisbon (Portugal). Paul is the Chairman of the CIRP Scientific Technical Committee on Electro-Physical and Chemical Processes (STC E). From Oct. 1996 to Oct. 1997, he was the Head of the Mechanical and Civil Engineering Department (ESTG/IPL), University of Leiria, Director of PAMI, a Portuguese Initiative for Additive Manufacturing. He is the Editor-in-Chief of Journal of Rapid and Virtual Prototyping, and Biomanufacturing Reviews. He is the general chair of the 40th MATADOR conference.

王　军

磨粒水射流加工技术探新

“A New Look into the Abrasive Waterjet Machining Technologies”

王军教授，澳大利亚南威尔士大学终身教授。曾任澳大利亚科学技术协会主席和国际磨料技术委员会主席。他是《International Journal of Abrasive Technology》国际杂志的创刊主编，于2015年获得英国机械工程师协会颁发的Bros Prize奖和澳大利亚科学技术协会颁发的终身成就奖。王军教授1982年获大连理工大学学士学位，1993年获墨尔本大学博士学位。研究方向为利用复合加工技术，如激光-水射流和激光-机械复合加工等，进行多尺度结构的制造，并在该领域发表500多篇论文，Elsevier于2018年将其评为磨料水射流研究领域最具影响力和最活跃的研究员。

Professor Jun Wang, University of South Wales, Australia. He served as the President of Australian Science and Technology Society, Chairman of International Committee for Abrasive Technology. He is the Founding Editor-in-Chief of International Journal of Abrasive Technology. He received Thatcher Bros Prize from the Institute of Mechanical Engineers, London in 2015 and Life Time Achievement Award from Australian Science and Technology Society. He received a bachelor’ s degree from Dalian University of Technology in 1982, and a PhD from The University of Melbourne in 1993. His current research is primarily in the development of manufacturing technologies for fabricating multi-length scale structures using advanced (such as abrasive jets and high energy beams) and hybrid (e.g. laser-water jet, and laser-mechanical) approaches. He has 500 journal publications. Elsevier rated him the most influential and active researcher in abrasive water jet research in 2018.

觉文郁

面向机床OT层的物联网技术及实现

“Implementation of ‘Internet of Things’ Technology on Machine Tools from OT Layers”

觉文郁教授，中国台湾国立虎尾科技大学校长，长期从事光学精密测量、机床校准测量和精密定位机构的设计。在曼彻斯特理工大学（University of Manchester Institute of Science and Technology，UMIST）攻读博士学位期间，他完成了机床的球杆仪测试系统，并在全球范围内销售。2003年，他建立了NFU精密机械中心，并担任主任，同时他还组建了一个由10多名具有设计、制造、控制、固体力学、光学、电子等专业知识的教授组成的研究团队。觉文郁教授目前是两个基金会的独立董事，正在运行一个智能机器旗舰计划。

Professor Wen-Yuh Jywe, President of National Formosa University, Taiwan, is a specialist in optical precision measurement, machine tool calibration measurement and precise positioning stage design. During his doctoral study at University of Manchester Institute of Science and Technology (UMIST), he finished a measurement system for Ball Bar CNC machine tool, which was marketed worldwide. In 2003, he established the Precision Machine Center of NFU and served as the director. He organized a research team in which members were composed of over 10 professors with expertise including design, manufacturing, control, solid mechanics, optics, electronics and etc. He is also the independent directors of two foundations and is currently running an intelligent machine flagship-type plan.


姚建华

激光表面工程技术研究进展与发展前景
“Progress and Future Prospect of Laser Surface Engineering Research”

姚建华教授，浙江工业大学机械工程学院院长和激光先进制造研究院院长。兼任美国激光学会会员，中国光学学会激光加工专业委员会常务委员，中国机械工程学会特种加工分会常务委员，中国机械工程学会热处理分会常务理事等职。入选国家百千万人才工程、浙江省万人计划杰出人才、浙江省151人才工程第一层次，获得“国家有突出贡献中青年专家”、“浙江省高校优秀教师”等称号，享受政府特殊津贴。主持国家和企业项目120余项，发表论文300余篇，授权专利40余项。作为第一完成人，获得国家科技进步奖二等奖1项，省部级科学技术奖一等奖3项、二等奖2项、三等奖1项。研究成果已大量应用于轮机装备、化工装备以及工模具等高端装备领域易损易耗零部件的制造与修复中。姚建华教授是本届大会的共同主席。

Professor Jianhua Yao, is the Dean of Institute of Laser Advanced Manufacturing, Dean of College of Mechanical Engineering, Zhejiang University of Technology, China. He has published more than 400 papers and completed more than 120 research projects. He is a Member of Laser Institute of America, Presidium Member of Laser Processing Committee of Chinese Optical Society, Vice-chairman of High Energy Heat Treatment Committee of Chinese Mechanical Engineering Society, Vice-Director of Engineering Research Center of Process Equipment and Remanufacturing, Ministry of Education. He has won the national technical innovation 2nd prize for his successful application of laser surface engineering in the turbine blade manufacture industry. He is a co-chairman of the 40th MATADOR conference.


陈　焱

大族激光智能装备的创新与应用
“Innovation and Application in Han’ s Laser Smart Equipment”

陈焱，现任大族激光智能装备集团总经理，中国光学学会常务理事，美国激光学会理事，全国光辐射安全和激光设备标准化技术委员会激光材料加工和激光设备分技术委员会（TC284/SC1）副主任委员；激光产业与智能制造领域应用专家，中国光纤激光切割机创始人，国家科技重大专项课题组组长，工信部智能制造新模式应用项目技术负责人。

Mr. Yan Chen is the General manager of Han’ s Laser Smart Equipment Group Co.,Ltd., Amecican LIA board member, Executive director of Chinese Optical Society, Vice President of National Technical Committee on Optical Radiation Safety and Laser Equipment Standardization Technical Committee on Laser Materials Processing and Laser Equipment in China(TC284/SC1), Expert in laser industry and smart manufacturing applications, Founder of fiber laser cutting machine in China, Leader of National Science and Technology Major Project Research Team, Technical leader of Smart Manufacturing New Model Application Project of MIIT (Ministry of Industry and Information Technology of China).


叶健松

智能制造背景下人才培养方式的思考
“Thinking on talent training mode under the background of intelligent manufacturing”

叶健松，博士、研究员、正高级高工，浙江大学兼职教授，国务院政府特殊津贴专家。浙江省机电集团总经理助理，浙江省职教集团秘书长，中国职业技术教育学会常务理事，浙江省机械工业联合会副会长，浙江省新世纪151人才，浙江省五四青年奖章获得者，浙江省优秀科技工作者，全国优秀科技工作者。曾任浙江大学工程师学院副院长，浙江省冶金学会理事长，浙江省先进钢铁材料工程技术研究中心创始人。主要从事钢铁冶金、金属材料和职业教育集团化办学研究。

Professor Jiansong Ye, Zhejiang Machinery and Electrical Group Co., LTD


陆永枫

基于混合树脂的纳米级功能结构3D打印

“Nano-scale 3D Printing of Functional Structures using Blended Resin Mixtures”

陆永枫教授，美国内布拉斯加大学林肯分校（UNL）Lott大学杰出教授。1984年获清华大学学士学位，1988年、1991年获大阪大学电机工程硕士、博士学位。共发表期刊论文480余篇、会议论文440余篇，70余次被邀做国际会议主题报告，11部专著，30余项专利。现任国际光电子与激光工程学会主席，美国光学学会（OSA）、美国激光学会、SPIE会士，曾任美国激光学会(LIA)主席。2016年获得美国激光学会颁发的Schowlow奖（世界激光领域最重要的奖项），担任《Journal of Laser Applications》和《International Journal of Extreme Manufacturing》主编。

Professor Yongfeng Lu, University of Nebraska-Lincoln (UNL), USA, is the Lott Distinguished Professor of Engineering. He received bachelor degree from Tsinghua University (China) in 1984 and M.Sc. and Ph.D. degrees from Osaka University (Japan) in 1988 and 1991, in electrical engineering. Dr. Lu has authored or co-authored over 480 journal papers. He is currently the President of International Academy of Photonics and Laser Engineering (IAPLE). He served as the President of the Laser Institute of America in 2014. He is the recipient of a number of prestigious awards, including the Schawlow Award from Laser Institute of America in 2016. He is the Co-editor-in-Chief of Journal of Laser Applications, and International Journal of Extreme Manufacturing.


Jiwang Yan

制造研发文化效应—日本、美国、中国、欧洲之对比

“Cultural Effects on Manufacturing R&D in Japan - with Comparison with USA, China and Europe”

Jiwang Yan教授，日本庆应义塾大学终身教授。他于2000年获得日本东北大学博士学位，目前是庆应义塾大学精密加工和纳米加工部主任。他的研究领域包括：超精密加工、微纳米加工、纳米力学等。他已经主持超过20个国家级科研项目和超过60个企业合作项目。发表期刊论文200多篇，会议论文300多篇，被邀请在国际会议上进行大会报告100余次，同时他还是11个国际杂志的编委和书籍的主编，其中包括Springer的微/纳米制造技术。

Professor Jiwang Yan, Keio University, Japan, obtained his Ph.D. from Tohoku University, Japan in 2000. He is the Director of Laboratory for Precision Machining and Nano Processing at Keio University. His research areas include ultraprecision machining, micro/nanomanufacturing, nanomaterial processing, and nanomechanics. He has led more than 20 nationally funded projects and over 60 joint research projects with industry as a principal investigator. He has authored/co-authored 200+ peer-refereed journal papers, 300+ conference papers, and given 100+ keynote/invited talks at international conferences and research institutions. He has received 30+ awards for his contribution in the manufacturing area, and his research results have been featured by several major newspapers and media in Japan for 20+ times. He serves on editorial boards of 11 international journals, and serves as the Editor-in-Chief for a few book projects including the Springer Micro/nano Fabrication Technology.

Paul Mativenga

绿色制造重大挑战—创造未来
“Engineers and the Grand Challenge of Waste :Engineering the Future”

Paul Mativenga 教授，英国曼彻斯特大学工学院副院长，多尺度可持续制造系教授。Paul Mativenga教授毕业于University of Liverpool，获得了制造工程和先进制造系统与技术的博士和理学硕士学位，并于2002年正式加入曼彻斯特大学。研究领域涉及采用工程科学方法解决资源效率和工业可持续性的主要问题，已发表了100多篇论文，同时还是两个制造领域国际期刊的编委之一，他也是国际生产工程协会（CIRP）会员。Paul Mativenga教授是本届大会的共同主席。

Professor Paul Mativenga, Vice Dean (social responsibility), Faculty of Science and Engineering, The University of Manchester, UK. Paul is a Professor in Multi-scale & Sustainable Manufacturing at the university. He obtained a PhD and MSc in Manufacturing Engineering and Advanced Manufacturing Systems and Technology, from The University of Liverpool and joined The University of Manchester, formally in UMIST in 2002. Paul’ s research area in related to developing engineering science solutions to tackle the major challenges of resource efficiency and industrial sustainability. Paul has published over 100 peer review papers in scientific journals. Paul is subject Editor of two leading international journals in manufacturing and also serves on a number of editorial boards. He is a Member of the International Academy of Production Engineering (CIRP). He is the co-chairman of the 40th MATADOR conference.

李其朋

杭叉集团工业车辆的智能制造实践
“Intelligent Manufacturing Practice of Industrial Vehicles of Hangcha Group”

李其朋，博士，教授，浙江科技学院党委委员、机械与能源工程学院院长，杭叉集团股份有限公司特聘研究员。2000年毕业于浙江大学机械电子工程专业，获学士学位；2005年毕业于浙江大学流体传动与控制国家重点实验室，获博士学位。2013年-2014年德国弗劳恩霍夫新能源及系统研究院访问学者(国家留学基金委资助)。现任中国机械工程学会高级会员，浙江省机械工程学会常务理事，国家自然科学基金委员会通讯评议专家；入选浙江省新世纪“151人才工程”第二层次培养人员，浙江省青年科学家，浙江省高校中青年学科带头人。主要从事工业车辆，复杂机电装备，电液控制系统及关键零部件等方面的研究。承担科技部国家国际科技合作专项、国家自然科学基金、浙江省重点研发计划等国家、省部级和企业产学研合作项目30余项，发表学术论文50余篇（SCI/EI收录20余篇），授权国家发明专利30余项。

Professor Qipeng Li, Member of Party Committee, and Dean of School of Mechanical and Energy Engineering of Zhejiang University of Science and Technology, and also Distinguished researcher of Hangcha Group Co. Ltd. He got his bachelor and doctor degree in Zhejiang University in 2000 and 2005 respectively. And he has been a vsiting scholar of Fraunhofer Institute for Wind Energy Systems of German sponsored by China Scholarship Council .

Poster Session

张贴报告展示时间：7月9日-10日。集中交流与评审时间：7月9日下午15:30-16:30，请作者到现场讲解。

展示地点：C幢一楼启航厅

Poster session time:9th-10th July, 2019
Dedicated communication time:15:30-16:30, 9th July,2019, when authors should be on the spot.
Location: Qihang Hall (BuildingC,1st Floor)

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	**Performance of the High-speed Aerostatic Spindles with Modified Discharge Coefficients**	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 Rape Blackleg Early Detection Method with Low-frequency Ultrasonic Technology**	Xin Qiao[1], Hongli Chen[2], Guilin Tu[2]	[1]Zhejiang University of Technology, Hangzhou, China [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
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

ID	Titles	Authors	Affiliations
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 Measurement Method based on Sample Test Method**	Shengkai Mei	Shandong University of Technology, Zibo, China
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**	Lam, Xiong Yi, Audelia Gumarus Dharmawan, ShaohuiFoong, Gim Song Soh	Technology and Design, Singapore, Singapore
58	**Design and Optimization of Regional Split Header Structure in Plate-Fin Heat Exchanger**	Xiang Peng, Denghong Li, Shaofei Jiang, Jiquan Li	Zhejiang University of Technology, Hangzhou, China
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

ID	Titles	Authors	Affiliations
69	**Investigation of Mechanical Behavior of Pure Aluminum under Vibration-assisted Burnishing by Molecular Dynamics Simulation**	Zhong YuPiao[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 Aero-engine Blades based on Abrasive Belt Grinding**	Ge Man, JiShiming, Tan Dapeng, Qiu Lei	Zhejiang University of Technology, Hangzhou, China
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

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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 and Transmission System Design on the Precise Machine Tool Measurement**	WenYuh Jywe[1], CaoSang Tran[2], YungHoh Sheu[3], PoChieh Hong[4], JingChung Shen[4], HsiuChing Chang[4]	[1]Automation Engineering, National Formosa University, Yunlin, Taiwan [2]Power Mechanical Engineering, National Formosa University, Yunlin, Taiwan [3]Computer Science and Information Engineering, National Formosa University, Yunlin, Taiwan [4]National Formosa University, Yunlin,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

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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 Characteristics based on Galvanomeer Scanning**	Kaiye Chen[1,2], Guolong Wu[1,2], Ye Wang[1,2], Hao Wu[1,2], Tianliang Zhang[1,2], Danhua Lu[1,2], Jianhua Yao[1,2]	[1]Institute of Laser Advanced Manufacturing, Zhejiang University of Technology, Hangzhou, China [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, 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 andAlignment**	WenYuh Jywe[1,2], BorJeng Lin[1,2], HsuehLiangHuang[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, Taiwan [2]Smart Machine and Intelligent Manufacturing Research Center, National Formosa University, Yunlin, 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, Taiwan

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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 of Tungsten Carbide using Powder-mixed EDM**	SaiDuttaGattu, Jiwang Yan	Keio University, Yokohama, 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
196	**Study on Laser Beam Butt Welding of NiTinol Sheets and Optimization of Process Parameters Using Desirability Function Analysis and Metaheuristic Techniques**	Mohammad ShahidRaza, Amit Kumar Das, ParthaSaha, Dilip Kumar Pratihar	Indian Institute of Technology Kharagpur, Kharagpur, India
207	**Fluid Systems in Energy and Combustion Processes: A Lattice Boltzmann Method Based Literature Review**	Lin Li1,Hui Fang[2,3], Zichao Yin[1], Ronghui Wang[1], Tong Wang[1], Linjie Zhao1, Yanqi Wu[2,3], Jie Chen[2,3], Dapeng Tan[1], Yuehua Wan[2,3]	[1]Key Laboratory of E&M, Ministry of Education & Zhejiang 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

ID	Titles	Authors	Affiliations
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
F35	**Study of Coating Technology of Laser Cladding Single Layer of 42CrMo Bearing Steel with Large Thickness and Low Dilution Rate**	Jiyu Du, Yifan Zhuang, Mingwen Gai, Wenhua Tong, Weiwei Jin, Jian Lin, Tang Zhou, 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

浙江工业大学
ZHEJIANG UNIVERSITY OF TECHNOLOGY

浙江工业大学正式创建于1953年，前身可以追溯到1910年的浙江中等工业学堂，现已发展成为国内有一定影响力的综合性教学研究型大学，综合实力稳居全国高校百强行列。

2009年，学校成为浙江省人民政府和教育部共建高校，是东部沿海地区第一所省部共建高校。2013年，由学校牵头建设的“长三角绿色制药协同创新中心”入选首批14家国家级“2011协同创新中心”。2015年，入选浙江省首批重点建设高校之一。2016和2017年，学校激光绿色制造技术创新引智基地、绿色制药学科创新引智基地相继入选国家地方高校“111”计划。

学校现有3个校区，占地面积3000余亩。现有教职工3000余人，其中全职中国工程院院士3人，专任教师2200余人，具有高级职称教师1400余人。现有66个本科招生专业，6个博士后流动站，9个一级学科博士学位授权点，29个一级学科硕士学位授权点，学科涵盖11大门类，其中化学、工程学、材料科学、环境科学与生态学、农业科学五个学科进入ESI全球排名前1%。在校普通全日制本科学生19000余人，各类研究生近10000人（含博士研究生800余人），留学生1000余人。2014年，作为中国大陆两所高校代表之一，通过首批《华盛顿协议》工程教育专业现场认证。

作为省属高校的排头兵，学校始终坚持“以浙江精神办学、与区域发展互动”的办学特色，“立足浙江、服务区域，走向全国、对接国际”的办学宗旨，发扬“艰苦创业、开拓创新、争创一流”的“三创”精神，主动对接和服务国家重大战略和区域发展需求，努力成为浙江经济社会发展的“人才泵”“创新源”“思想库”。学校先后有近500项科研成果获国家、省部级科研成果奖，其中国家科学技术奖23项，教育部人文社科优秀成果奖6项。近年来，学校科研经费、项目、论文、专利、平台等方面继续保持良好的发展态势，获国家重点研发计划项目3项，签订1000万以上重大横向项目12项。2018年，学校科研经费达6.32亿元。学校有效发明专利拥有量位居全国高校第10位。在2016-2017年中国大学科技创新竞争力排行榜上，学校位居全国高校第49位。

学校先后与省内外60多个市、县（区）建立了全面合作或科技合作关系，建立了18个地方实体研究院、44个技术转移中心，服务企事业单位6000多家，为区域经济社会发展提供了有力支撑。

ZHEJIANG UNIVERSITY OF TECHNOLOGY

Approach to Excellence

A Beautiful Garden University in Hangzhou, Zhejiang Province, China

A Comprehensive University formally

established in 1953, with the history can be traced back to the year of 1910 when it was named Zhejiang Secondary Industrial School

A Key University co-supportedby Zhejiang Province and MOE(Ministry of Education)

A TOP 100 University among 2,900 universities in China

GLANCE AT ZJUT

SCHOOLS: 27

FACULTY AND STAFF:3,045

2,137 Academic faculties	**3** Fellows of CAE (Chinese Academy of Engineering)	**250+** International faculty and staff

STUDENTS:

Undergraduates	18,965
International Students	1,000+
Master	6,811
Phd	825

PROGRAMS:

- Undergraduates
- Master
- Phd

RESEARCH INSTITUTES	31
INTERNATIONAL RESEARCH PLATFORMS	54
INTERNATIONAL PARTNERS	180+
Programs of Chinese-Foreign Cooperation in Running Schools	4
PROGRAMS FOR STUDENTS EXCHANGE	90+

浙江工业大学机械工程学院

机械工程学院始建于1953年，是浙江工业大学历史最悠久、规模最大的学院之一。学院现有教职工270余名，其中正高职称教师50余名，副高职称教师90余名，具有博士学位教师180余名。拥有国家级有突出贡献中青年专家1名、人事部百千万人才工程入选者2名、国家杰出青年基金获得者1名、国家“千人计划”（外专前任）专家2名、浙江省特级专家1名、浙江省“钱江学者”特聘教授3名、浙江省“千人计划”专家7名（浙江省外专千人5名）、浙江省“万人计划”杰出人才1名、浙江省高等学校教学名师1名，浙江省151人才、高校中青年学科带头人等40余名。

拥有机械工程、动力工程及工程热物理博士后科研流动站；拥有机械工程一级学科博士学位授权点、化工过程机械二级学科博士学位点；拥有机械工程、动力工程及工程热物理2个一级学科硕士学位授权点；拥有机械工程、动力工程、工业工程、工业设计工程等4个工程硕士领域专业学位授权点；设有机械工程、过程装备与控制工程、车辆工程、工业工程、物流工程、能源与环境系统工程共6个本科专业。现有在读博士研究生200余名、硕士研究生1400余名、本科生1800余名、学历留学生100余名。

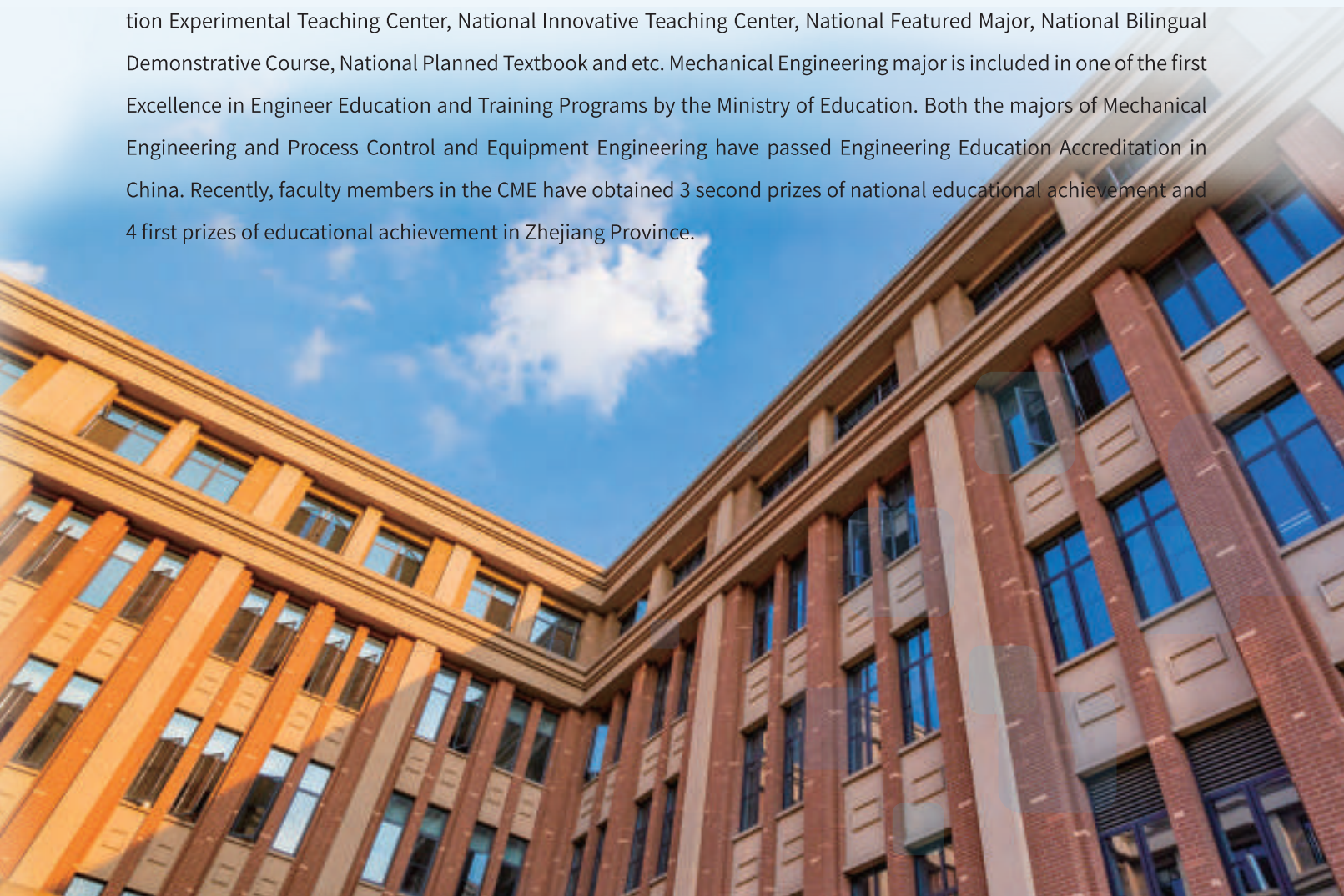
拥有机械工程、动力工程及工程热物理两个一级学科。机械工程学科是浙江省一流学科A类、浙江省重中之重一级学科、浙江工业大学一流高峰学科，第四轮学科评估排名“B+”；动力工程及工程热物理学科是浙江省一流学科A类，第四轮学科评估排名“C+”。

拥有国家级特种装备制造与先进加工技术国际联合研究中心、激光绿色制造技术创新引智基地(国家“111”计划)等科研(国际合作)平台。近十年，获国家技术发明二等奖1项、国家科技进步一等奖1项、国家科技进步二等奖4项、省部级科学技术奖一等奖11项，省部级科技奖励50余项；获授权发明专利860余件，发表论文3500余篇，SCI和EI收录1500余篇；近五年来，承担国家级和重大项目(含军工)150余项，其中国家重点研发计划项目1项、国家自然科学基金项目(含重点项目、重大仪器专项、两化融合重点项目)100余项，省部级以上科研项目370余项；科研经费3.5亿元。

ZHEJIANG UNIVERSITY OF TECHNOLOGY
COLLEGE OF MECHANICAL ENGINEERING

Founded in 1953, College of Mechanical Engineering (CME) is one of the oldest as well as largest colleges in Zhejiang University of Technology. Over 1, 880 undergraduate students, 1400 graduate students and 100 international students registered in CME. In the past 60 years, more than 16, 000 students have graduated from CME. Currently, over50 full professors, 90 associate professors and 170 teachers with the Ph.D. degree are employed in CME, including 1 academician of the Chinese Academy of Sciences, 2 experts of National "Thousand Talents Program", 1 winner of National Fund for Distinguished Young Scholars, 1 National Young and Middle-aged Expert with Outstanding Contributions, 2 members of " Million Talents Project" and 1 Prestigious Professor in Teaching.

The CME has set up 2 post-doctor research stations, 1 first-level discipline of doctoral authorization, 8 second-level disciplines of doctoral degree authorization, 2 first-level disciplines of master' s degree authorization, 10 second-level disciplines of master' s degree authorization, 4 master degree authorization in engineering. Moreover, there are 6 undergraduate majors and several national and provincial educational programs including a National Virtual Simulation Experimental Teaching Center, National Innovative Teaching Center, National Featured Major, National Bilingual Demonstrative Course, National Planned Textbook and etc. Mechanical Engineering major is included in one of the first Excellence in Engineer Education and Training Programs by the Ministry of Education. Both the majors of Mechanical Engineering and Process Control and Equipment Engineering have passed Engineering Education Accreditation in China. Recently, faculty members in the CME have obtained 3 second prizes of national educational achievement and 4 first prizes of educational achievement in Zhejiang Province.



浙江工业大学激光先进制造研究院

浙江工业大学激光先进制造研究院（以下简称“研究院”）坐落于中国历史文化名城、世界著名的风景游览胜地、素有“人间天堂”之誉的浙江省杭州市，是独立建制、实体运作的校级直属研究机构，依托机械工程、材料科学与工程、光学工程及控制科学与工程等学科，围绕“中国制造2025”、“两化融合”等主题，立足浙江及周边区域市场需求，以基于多能量场的复合制造技术、激光制造控形控性关键工艺技术、激光制造装备技术等激光先进制造技术作为主要研究方向，集基础理论研究、关键技术开发和产业化应用推广等功能于一体，开发面向工业应用的激光先进制造技术，致力于传统制造技术的改造并实现自主创新。

通过多年积累，已形成一支高凝聚力的国际化创新团队，发展成为国内装备最齐全的激光表面改性与激光制造的重要研究机构之一。研究院现有教职工20余人，其中教授9人。在读硕博研究生70余人，国家千人计划专家、国家百千万人才各1名，建有5个国际合作联合实验室、8个地方企业合作研究院及多个企业联合研发中心。承担和完成国家重点研发计划项目、NSFC-浙江两化融合联合基金、国家重点国际科技合作项目等国家、省部级科研项目40余项，企业委托项目100余项，公开发表学术论文专著300余篇(部)，授权专利40余项；以第一完成单位，获得国家科技进步奖二等奖1项，省部级科学技术奖一等奖3项、二等奖2项、三等奖1项，中国专利优秀奖、浙江省专利金奖各1项。技术成果已经广泛应用于能源、模具、汽车、五金、纺织、冶金、电子、化工等领域，在提升我国基础关键件制造水平、替代传统技术实现转型升级、减少重大装备损失方面为行业做出了重要贡献。

依托科研平台

国家级	激光绿色制造技术创新引智基地（“111基地”）
	特种装备制造与先进加工技术国家级国际联合研究中心
	科技部能源材料及应用国际科技合作基地
教育部	特种装备制造与先进加工技术教育部重点实验室
	过程装备及其再制造教育部工程研究中心
浙江省	浙江省高端激光制造装备协同创新中心（省2011计划）
	高端装备激光再制造浙江省工程研究中心
	浙江省高端装备激光制造技术国际合作联合实验室
	浙江省激光绿色制造技术国际科技合作基地
	浙江省特种装备制造与先进加工技术重点实验室
	浙江省重大装备（造平机械）激光技术开发中心
	浙江省燃气涡轮机械制造业创新中心
学校	浙江工业大学激光加工技术工程研究中心
	浙江工业大学“创新团队支持计划”重点创新团队
国际联合实验室	剑桥大学-浙江工业大学激光技术联合研究实验室
	乌克兰国立科技大学-浙江工业大学激光技术联合研究实验室
	美国内布拉斯加林肯大学-浙江工业大学激光技术联合研究实验室
	加拿大卡尔顿大学-浙江工业大学激光技术联合研究实验室
	浙江工业大学-美国先进光波科技有限公司激光制造国际合作联合实验室

主要科技获奖

序号	成果名称	获奖项目	等级	获奖时间
1	激光表面复合强化与再制造关键技术及其应用	国家科学技术进步奖	二等奖	2012 年
2	磁场复合激光表面改性关键技术及应用	中国机械工业科学技术奖	一等奖	2018 年
3	激光表面强化关键技术与装备研发及产业化应用	中国机械工业科学技术奖	一等奖	2010 年
4	激光表面强化与再制造关键技术与装备及其产业化应用	浙江省科学技术奖	一等奖	2010 年
5	金属叶片激光强化工艺用合金吸光涂料及其激光强化工艺	中国专利奖	优秀奖	2017 年
6	金属叶片激光强化工艺用合金吸光涂料及其激光强化工艺	浙江省专利奖	金奖	2016 年
7	轮机部件激光熔覆 Al-Si 等复合强化涂层关键技术研究与应用开发	中国机械工业科学技术奖	二等奖	2009 年
8	100 万吨/年乙烯装置驱动用工业汽轮机国产化创新研制	中国机械工业科学技术奖	二等奖	2013 年
9	工业动力机组关键部件的激光合金强化技术开发	浙江省科学技术奖	二等奖	2006 年
10	激光熔覆高耐磨合金钻刀具的研制与开发	浙江省科学技术奖	三等奖	2002 年

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Institute of Laser Advanced Manufacturing , Zhejiang University of Technology

Institute of Laser Advanced Manufacturing , Zhejiang University of Technology is located in Hangzhou, Zhejiang Province, a famous historical and cultural city in China, a world-renowned scenic resort and known as "paradise on earth". It is an independent, entity-operated, directly affiliated research institution at the University level, relying on mechanical engineering, material science and engineering.It focused on the topic of "Made in China 2025" and "Integration of informatization and industrialization", based on the market demand of Zhejiang and its surrounding areas, and centered on the Research of multi-energy field based composite manufacturing technology, key technology of shape control in laser manufacturing and laser manufacturing equipment technology.As the main research direction, it integrates basic theory research, key technology development and industrial application promotion. It develops advanced laser manufacturing technology for industrial application, devotes itself to the transformation of traditional manufacturing technology and realizes independent innovation.

The Institute has established many international science and technology cooperation bases such asLaser Green Manufacturing Technology Innovation and Intelligence Base ("National 111 Plan"), Process Equipment and its Remanufacturing Engineering Research Center of the Ministry of Education, Ministry of Special Equipment Manufacturing and Advanced Processing Technology Education/Zhejiang Key Laboratory, Zhejiang Provincial CollaborativeInnovation Centerof High-end Laser Manufacturing Equipment, Zhejiang Laser Green Manufacturing Technology International Science and Technology Cooperation Base.

Through years of accumulation, a highly cohesive international innovative team has been formed and developed into one of the most well-equipped research institutes for laser surface modification and laser manufacturing in China. The Institute has over 40 faculty members, including 9 professors. It also have more than 70 Ph.D. and Master's degree students, 1 National Thousand-Person Plan Expert and 1 National Million-Person Talent respectively. It have established 5 international cooperation joint laboratories, 8 local enterprise cooperation research institutes and several joint R&D centers. It undertakes more than 40 national and provincial scientific research projects, such as National Key Research and Development Program of China, National key international scientific and technological cooperation projects, National fund-integration fund et al, and more than 100 projects entrusted by enterprises, publishes more than 300 academic papers, and authorizes more than 40 patents. As the first completion unit, it also haveobtains 1Second prize of National Scientific and Technological Progress , 1 second prize, 2 first prize, 2 second prize and 1 third prize of provincial and ministerial science and technology prize, 1 excellent Chinese patent prize and 1 patent gold prize of Zhejiang province. Those technical achievements have been widely used in energy, molds, automobiles, hardware, textiles, metallurgy, electronics, chemical industry and other fields. It have made important contributions to the industry in upgrading the manufacturing level of basic key components, replacing traditional technology to achieve transformation and upgrading, and reducing major equipment losses.

浙江科技学院简介

浙江科技学院的前身由浙江大学于1980年创办。经过近40年的建设，学校已发展成为一所具有硕士、学士学位授予权和外国留学生、港澳台学生招生权的特色鲜明的应用型省属本科高校。

学校下设14个二级学院、1个教学部；现有56个本科专业；拥有5个学术型硕士学位授权一级学科、5个硕士专业学位授权点。学校面向全国24个省（区、市）招生；现有全日制本科生、研究生17000余名；留学生2100余名，其中学历生1400余名。教学科研仪器设备总值3.72多亿元，图书170余万册。

学校现有教职工1390余名，专任教师1070余名，高级职称510余名，具有博士学位教师占40%以上，具有6个月以上海外学术经历教师占30%以上，双师双能型教师占40%以上；享受国务院特殊津贴5人，全国优秀教师1人，全国教育系统职业道德建设标兵1人，国家级知名专家2人，教育部“新世纪优秀人才支持计划”2人，教育部高校教学指导委员会成员2人，省级知名专家2人，省万人计划1人，“钱江学者”特聘教授3人，省突出贡献中青年专家2人，省“151人才工程”培养人员73人，省高校中青年学科带头人38人，省优秀教师5人，省高校优秀教师4人，省高校教学名师6人，省级教学团队3个。

学校现有省级一流学科6个，省级“2011协同创新中心”1个，省级重点实验室3个，省级国际科技合作基地1个，省级工程实验室1个，省级人文社科研究基地2个，省级重点科技创新团队3个，省级高校高水平创新团队1个，省级高校创新团队1个，省级引进大院名校共建创新载体1个。近几年获得省部级及以上科研奖项30余项，其中国家级科学技术奖2项，与企业共建研发机构90余个，发表论文4300余篇，其中三大索引和人文社科权威级学术期刊论文1000余篇。

当前，学校正按照第四次党代会描绘的宏伟蓝图，以立德树人为根本，强化应用型办学，彰显国际化特色，实施“多院一体，四轮驱动”的开放强校主战略，以学科专业一体化建设为龙头，以产教融合、国际合作为两翼，以产业学院、产业行业研究院、国际化特色学院建设为主体，以大学治理现代化为动力，高水平建设特色鲜明的社会主义浙江科技大学。

Introduction To ZUST

Zhejiang University of Science and Technology (ZUST) is a multi-disciplinary full-time regular university under the direct guidance of Zhejiang Provincial Government, which focuses on engineering with additional disciplines in arts, management, science, and economics. Founded in 1980, it was initially known as Hangzhou Industrial School Attached to Zhejiang University. Combining the successful school-running experience of German Universities of Applied Sciences (FH) with Chinese Characteristics, ZUST explores to cultivate high quality internationalized talents with innovative spirits and applied skills.

This university was listed in the first pilot universities involved in Excellent Engineers Education and Training Plan from the Ministry of Education. It has 3 state-level key majors, 4 provincial-level dominant majors in the “12th Five-Plan”, 10 provincial level newly emerging (international) majors, 9 provincial-level key majors, 7 national level engineering practice centers, 1 national level off-school practice base for undergraduates, 5 provincial-level experimental teaching demonstration centers, and 1 provincial talents training mode experiment and innovation site; 1 state-levelYear second prize for Teaching Achievements in Higher Education has been won. In the past five years ZUST students won over 3300 prizes in various international and domestic disciplinary competitions, including over 50 international awards and more than 880 state-level awards. The initial employment rate of its graduates is maintained at more than

95%, one of the highest in the provincial colleges and universities, gaining itself the honor of “Model University with High Graduate Employment Rate” from the Ministry of Education.

So far the university has 8 provincial-level key disciplines in the “12th Five-Year Plan”, 3 provincial-level key technological innovation teams and 1 provincial university innovation team. In recent five years the university has won over 14 provincial and state-level awards including a second prize of state technological invention award (as the second unit), a second prize of the outstanding achievement award of scientific research from the Ministry of Education for two consecutive years; it has been granted RMB 220 million Yuan of research funding; over 3800 articles have been published, among which more than 800 papers are either indexed by SCI, EI, and ISTP or are authority level research papers in humanities and social sciences; and more than 50 Research and Development institutions have been established cooperatively with enterprises.

The university has more than 1200 staff members, 850 full-time teachers, among whom more than 100 are professors, those with master’ s or doctor’ s degrees account for 80%, and those with experiences of enterprise practice account for over 30%. 4 teachers were approved to receive the State Council special subsidy; 1 was chosen as national level Excellent Teacher; 1 won the honor of Model of Professional Ethics in national education system; 1 was selected into “New Century Excellent Talents Supporting Program” from the Ministry of Education, 1 enrolled for “1000 provincial talents plan”, 1 special professor of “Qianjiang Scholars”, 1 won the honor of “young and middle-aged provincial-level experts with outstanding contribution”; 66 as the provincial-level candidates for “151 Talents Program”, 27 as provincial young and middle-aged discipline leaders; 5 as provincial level Outstanding Teachers; 3 as provincial level Excellent University Teachers, 7 as provincial level Distinguished University Teachers; and 3 provincial level teaching teams were established.

According to the grand blueprint of the university’ s third CPC Representative Committee, the university will adhere to the motto of “Virtue and Truth, Creativity and Practicality”, strengthen moral education, pursue the dream of the University, and make great strides to develop itself into a distinctive and modern university oriented to application by intensifying reform.

浙江工业大学湖州物流装备与技术研究院（浙江汇智物流装备技术有限公司）简 介

浙江工业大学湖州物流装备与技术研究院（浙江汇智物流装备技术有限公司是研究院的实体公司）位于湖州南太湖高新技术产业园区，由浙江工业大学和湖州市共同出资1000万元组建，于2014年5月注册设立。研究院依托浙江工业大学的人才、学科和科技优势，汇联天下物流装备与技术界英才，智创物流装备与技术的未来。

研究院（公司）主要从事:1.物流系统规划、设计和系统集成，提供物流系统解决方案；2.RFID在智能物流、智能产品中应用；3.物流机器人研究与应用；4.工业工程、现代物流和精益生产等培训咨询；5.机电技术与装备等技术服务、产学研合作。

研究院（公司）是浙江省机械工程学会物流工程分会理事长单位、中国机械工程学会物流工程分会常务理事单位、浙江省企业经营管理人员培训基地、浙江省高校产学研联盟湖州中心、湖州市吴兴区智能装备产业知识产权联盟秘书长单位。公司通过ISO9001质量管理体系认证。

研究院（公司）成立以来，主动对接“中国制造2025”，主攻工厂智能物流关健技术与系统集成，为政府、工业园区和企业提供了各类服务和支撑。建立了自动化低温冷库联合实验室等服务、示范平台，与学校联合承接了浙江省重大招标项目《“智能一代”技术推广示范应用》（工厂智能存储与配送系统），与海康、新松、哥伦布、朗奥等知名企业开展合作研发，承接了博世、爱仕达、大东、巴贝等大型企业多项智能工厂规划、物流系统集成和咨询业务；承接浙江省人社厅、湖州市经信委等政府高级研修项目10多项。

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Huzhou Institute of Logistics Equipment and Technology, Zhejiang University of Technology (Zhejiang Huizhi Logistics Equipment Technology Co., Ltd.) Brief introduction

The Huzhou Institute of Logistics Equipment and Technology of Zhejiang University of Technology (Zhejiang Huizhi Logistics Equipment Technology Co., Ltd. is the entity company of the institute) is located in the South Taihu High-tech Industrial Park of Huzhou. It is set up by Zhejiang University of Technology and Huzhou with a joint investment of 10 million and registered in May 2014. Relying on the talents, disciplines and technological advantages of Zhejiang University of Technology, the Institute brings the logistics equipment and technological talents together to create the future of logistics equipment and technology.

The institute (Company) is mainly engaged in: 1. Logistics system planning, design and system integration, providing logistics system solutions; 2. Application of RFID in intelligent logistics and intelligent products; 3. Research and application of logistics robots; 4. Training and consultation of Industrial Engineering, Modern Logistics and Lean Production; 5. Technical services such as electromechanical technology and equipment, cooperation in production, education and research.

The institute (Company) is the chairman unit of Logistics Engineering Branch of Zhejiang Mechanical Engineering Society, the executive director unit of Logistics Engineering Branch of China Mechanical Engineering Society, the training base of enterprise managers in Zhejiang Province, the Huzhou Center of Zhejiang University Association of Industry, Education and Research, and the Secretary-General of Intellectual Property Alliance of Intelligent Equipment Industry in Wuxing District of Huzhou City. Secretariat-General Unit. The company has passed the ISO 9001 quality management system certification.Since the establishment of the institute (company), it has actively docked "Made in China 2025", focusing on the key technology and system integration of factory intelligent logistics, providing various services and support for the government, industrial parks and enterprises. It has established the service and demonstration platform of automated cryogenic cold storage joint laboratory, and jointly with a school to undertake the Zhejiang Province major bidding project "Intelligent Generation Technology Promotion and Demonstration Application" (Factory Intelligent Storage and Distribution System), cooperated with Haikang, Xinsong, Columbus, Lango and other well-known enterprises to carried out cooperative research and developmentt, and undertook a number of intelligent factory planning, logistics system integration and consulting services for large enterprises such as Bosch, ASD, Dadong and Babe; undertook more than 10 senior government training projects such as Zhejiang Provincial People's Social Security Office, Huzhou Economic and Information Committee.

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浙江工业大学新昌研究院

浙江工业大学新昌研究院由新昌县人民政府和浙江工业大学共同设立，拥有独立法人、自收自支的民办非企业实体研究机构。研究院将以切实解决新昌县现有产业发展中的技术、人才等需求为目标，重点围绕当地轴承及高端装备制备产业所面临的共性技术问题，开展高水平技术研发、人才培养及成果转化等服务，通过充分发挥浙江工业大学目前所拥有的各类科研平台及学科、人才优势，力争显著提升当地企业的自主创新水平，为新昌县轴承行业转型提升提供人才、技术支撑。

研究院现有员工22人，其中研究人员16人，专职工作人员6人，以及博士后、博士生、硕士生30多人。设有智能装备研究所、智能检测研究所等。主要的研究方向有精密与超精密加工技术与装备、精密与超精密加工智能控制技术、超精密光学非接触检测技术、生产过程智能自动化技术。目前已获国家、省部级科技奖7项，授权国家发明专利近100余项，在国内外发表高水平论文300余篇，出版著作5部。现已研发的超精密加工设备有智能型超精密平面抛光机，精密球体研磨/抛光机，超薄片双面抛光机，力流变曲面抛光机等。超精密检测设备有超光滑表面缺陷检测平台，球体（球面）精度高效检测平台，手机屏微缺陷智能检测仪等。

Xinchang Research Institute of Zhejiang University of Technology

Xinchang Research Institute of Zhejiang University of Technology is jointly established by the Xinchang County People's Government and Zhejiang University of Technology. It has an independent legal entity and a self-supporting private non-enterprise entity research institution. The research institute will aim at solving the needs of technology and talents in the existing industrial development of Xinchang County, focusing on the common technical problems faced by the local bearing and high-end equipment preparation industry, and carrying out high-level technology research and development, personnel training and results transformation. By making full use of the various scientific research platforms, disciplines and talents that Party B currently possesses, the company strives to significantly enhance the level of independent innovation of local enterprises and provide talent and technical support for the transformation and upgrading of the bearing industry in Xinchang County.

The institute has 22 employees including 16 researchers and 6 full-time staff and more than 30 post doctors, Ph.D. postgraduates and graduate students. The institute founds several sub-institutes including Institute of Intelligent Equipment and Institute of Intelligent Detection. The main research include precision and ultra-precision machining technology and equipment, precision and ultra-precision machining intelligent control technology, ultra-precision optical non-contact detection technology, and intelligent automation technology for production process. The institute has received 7 national, provincial and ministerial science and technology awards. Besides what mentioned above, it has owned nearly 100 national invention patents authorization, with more than 300 high-level papers and 5 books published in the world.

The Several ultra-precision processing equipments have been developed including intelligent ultra-precision planarization machine, precision sphere grinding/polishing machine, ultra-thin double-side polishing machine, and force rheology curved polishing machine, etc. In addition, the Ultra-precision testing equipments have also been developed, such as the super smooth surface defect detection platform, high precision and efficient detection platform for spherical surface and the intelligent detector for micro-defect of mobile phone screen.

奔腾激光（温州）有限公司

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奔腾激光（温州）有限公司

奔腾激光（温州）有限公司是温州市政府“一事一议”引进的重大产业化项目，总投入5亿元，年产能30亿元，是我国华东地区重要的的激光加工设备生产基地，也是我国高功率激光加工设备出口领军企业。

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奔腾激光秉承“做激光应用专家，为客户创造价值”的经营理念，研发生产了一批具有国际先进水平的激光加工设备。2018年初成功研发出15000W超高功率光纤激光切割机，同时研制开发智能激光切管机、机器人三维激光切割焊接机、自动上下料系统。这些先进的激光加工设备在国内广泛应用于钣金加工、机械制造、汽车机车船舶制造、航空航天等领域，并大量销往欧美及亚洲等16个国家和地区。

奔腾激光坚持“一丝不苟，持之以恒，质量至上，创新为魂，优质服务，规范守信”的质量方针，以创新为先导，以品质立命，以服务为本。在智能制造时代，期待与您一同领导激光应用技术变革！

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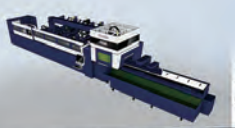
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浙江科技学院

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