

Symposia - G03
Additive Manufacturing of Advanced Materials

Oct 15 (Sunday), 2023

Conference Room: 7108, -1# floor

8:30-10:25 Session I

Chair: Bian huakang

8:30-9:00 (G03-01)

Sc、Zr 改性 Al-Mg 合金激光增材制造组织演化规律及强韧化机制 (Keynote)

Xin Lin, Northwestern Polytechnical University, China

9:00-9:25 (G03-02)

Unique solidification microstructure characteristics in 316L stainless steel fabricated by laser powder bed fusion (Invited)

Fei Sun, Nagoya University, Japan

9:25-9:45 (G03-03)

Superior strength and plasticity of 15-5PH stainless steel lattice structures fabricated by laser powder bed fusion (Oral)

Jiuyi Li, University of Science and Technology Beijing, China

9:45-10:05 (G03-04)

Anisotropic Ti-6Al-4V Cubic Structures with High Specific Yield Strength (Oral)

Chao Ding, Hangzhou City University, China

10:05-10:25 (G03-05)

Study on TC4 process technology of annular laser high speed additive manufacturing (Oral)

Kaixin Wang, Academy of Military Science of the People's Liberation Army National Innovation Institute of Defence Technology, China

10:25-10:35 Coffee Break

10:35-12:05 Session II

Chair: Xin Lin

10:35-11:00 (G03-06)

Processing parameters optimization in powder bed fusion electron beam melting (PB-EBM) using Machine learning (Invited)

Huakang Bian, Shanghai University, China

11:00-11:25 (G03-07)

Test on the failure modes and ultimate load-carrying capacities of wire and arc additively manufactured steel bolted connections (Invited)

Jun Ye, Zhejiang University, China

11:20-11:45 (G03-08)

Achieving high ductility in Fe₄₆Mn₃₄Co₁₀Cr₁₀ metastable high entropy alloy by constructing

heterogeneous microstructure with stacking fault energy differential (Oral)

Zhaowen Geng, Central South University, China

11:40-12:05 (G03-09)

On the size effects and build orientation in thin-walled Ti6Al4V parts manufactured via selective laser melting (Oral)

Zhaoyang Zhang, Hangzhou City University, China

12:05-14:00 Lunch

14:00-15:40 Session III

Chair: Shufeng Li

14:00-14:30 (G03-10)

Hybrid direct energy deposition process coupled with plastic deformation (Keynote)

Yunjie Bi, Ji Hua Laboratory, China

14:30-14:55 (G03-11)

Robust additive manufacturable Ni superalloys designed for reduced boron segregation (Invited)

Hao Yu, Northeastern University, China

14:55-15:20 (G03-12)

Alpha phase variant alchemy for improved mechanical properties of titanium alloys (Invited)

Shenglu Lu, Royal Melbourne Institute of Technology, Australia

15:20-15:40 (G03-13)

增材制造轻质熵控合金材料筛选 (Oral)

Xu Li, Academy of Military Science of the People's Liberation Army National Innovation Institute of Defence Technology, China

15:40-15:50 Coffee break

15:50-17:40 Session IV

Chair: Yunjie Bi

15:50-16:15 (G03-14)

Microstructure and mechanical properties of TiBw reinforced titanium matrix composites prepared by electron beam powder bed fusion technology using spherical titanium composite powders as feedstock (Invited)

Shufeng Li, Xi'an University of Technology, China

16:15-16:40 (G03-15)

电子束 3D 打印 H13 钢数值模拟、显微组织与力学性能 (Invited)

Xin Yang, Hangzhou City University, China

16:40-17:00 (G03-16)

Microstructure and properties of high-strength heat-resistant Al-Ce-Mg alloy with in-situ nano-network structure fabricated by laser powder bed fusion (Oral)

Haiyang Lv, Shanghai Jiao Tong University, China

17:00-17:20 (G03-17)

High strength and high conductivity CuCrZr alloy prepared by electron beam powder bed fusion (Oral)

Yunzhe Li, Xi'an University of Architecture and Technology, China

17:30 Dinner

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Oct 16 (Monday), 2023

8:30-10:25 Session I

Chair: Bin Liu

8:30-9:00 (G03-18)

Fatigue of AlSi10Mg Printed Using SLM (Keynote)

Xuming Su, Hangzhou City University, China

9:00-9:25 (G03-19)

Laser powder bed fusion of a Nb-based refractory alloy: Powder feedstock, microstructure and tensile properties (Invited)

Gang Chen, University of Science and Technology Beijing, China

9:25-9:45 (G03-20)

Effect of Overlap Scanning Strategies on Micro-characteristics and Mechanical Properties of Dual-laser Selective Laser Melted AlSi10Mg (Oral)

Yandong Shi, Hangzhou City University, China

9:45-10:05 (G03-21)

Effects of processing parameters on pore defects in blue laser directed energy deposition of aluminum by in and ex-situ observation (Oral)

An Wang, Shanghai Jiao Tong University, China

10:05-10:25 (G03-22)

Development of high strength and corrosion resistant FeCrNi MEAs via powder metallurgy and additive manufacturing (Oral)

Yuankui Cao, Central South University, China

10:25-10:35 Coffee Break

10:35-12:05 Session II

Chair: Xuming Su

10:35-11:00 (G03-23)

Additive manufacturing of high temperature oxide-dispersion-strengthened (ODS) ferritic steel (Invited)

Bin Liu, Central South University, China

11:00-11:25 (G03-24)

LPBF Haynes 230 superalloy with significantly improved ductility and crack inhibition by adjusting carbon content (Invited)

Danyang Lin, Harbin Institute of Technology, China

11:25-11:45 (G03-25)

The cracking behavior of Ni superalloys fabricated by direct energy deposition: the spatial distribution and formation mechanism (Oral)

Xingming Yang, Northeastern University, China

11:45-12:05 (G03-26)

Enhanced ambient and elevated temperature strength of additive manufactured Al-Ni-Sc-Zr alloys reinforced by gradient cellular structures (Oral)

Guandong Luo, Shanghai Jiao Tong University, China

12:05-14:00 Lunch

14:00-15:35 Session III

Chair: Yujie Cui

14:00-14:30 (G03-27)

Preventing Thermal Osteonecrosis through 3D Printed Ceramic Grinding Tool (Keynote)

Huan Qi, Hangzhou City University, China

14:30-14:55 (G03-28)

Laser powder bed fusion of Hastelloy X: Effect of heat treatment on microstructure evolution and strengthening behavior (Invited)

Caiwang Tan, Harbin Institute of Technology, China

14:55-15:15 (G03-29)

Research on numerical simulation and metal additive manufacturing of liquid-cooled plate for high-efficiency chip test based on triply periodic minimal surfaces (Oral)

Feng Guo, Hangzhou City University, China

15:15-15:35 (G03-30)

3D/4D printed bio-piezoelectric smart scaffolds for next-generation bone tissue engineering (Oral)

Annan Chen, City University of Hong Kong, China

15:35-15:45 Coffee break

15:45-17:20 Session IV

Chair: Huan Qi

15:45-16:10 (G03-31)

Enhanced mechanical properties and oxidation resistance of Ti alloys by applying electron beam powder bed fusion (Invited)

Yujie Cui, University of Science and Technology Beijing, China

16:20-16:40 (G03-32)

AM biocompatible scaffold with gradient layer structures (Oral)

Xianwen Wang, Shanghai Jiao Tong University, China

16:40-17:00 (G03-33)

3D printed gradient structure of nano-zirconia toughened alumina by selective paste extrusion (Oral)

Yetao Li, Shanghai Jiao Tong University, China

17:00-17:20 (G03-34)

Mechanical and energy-absorbing properties of uniform and variable-density minimal surfaces for additive manufacturing (Oral)

Meng Han, Hangzhou City University, China

17:30 Dinner