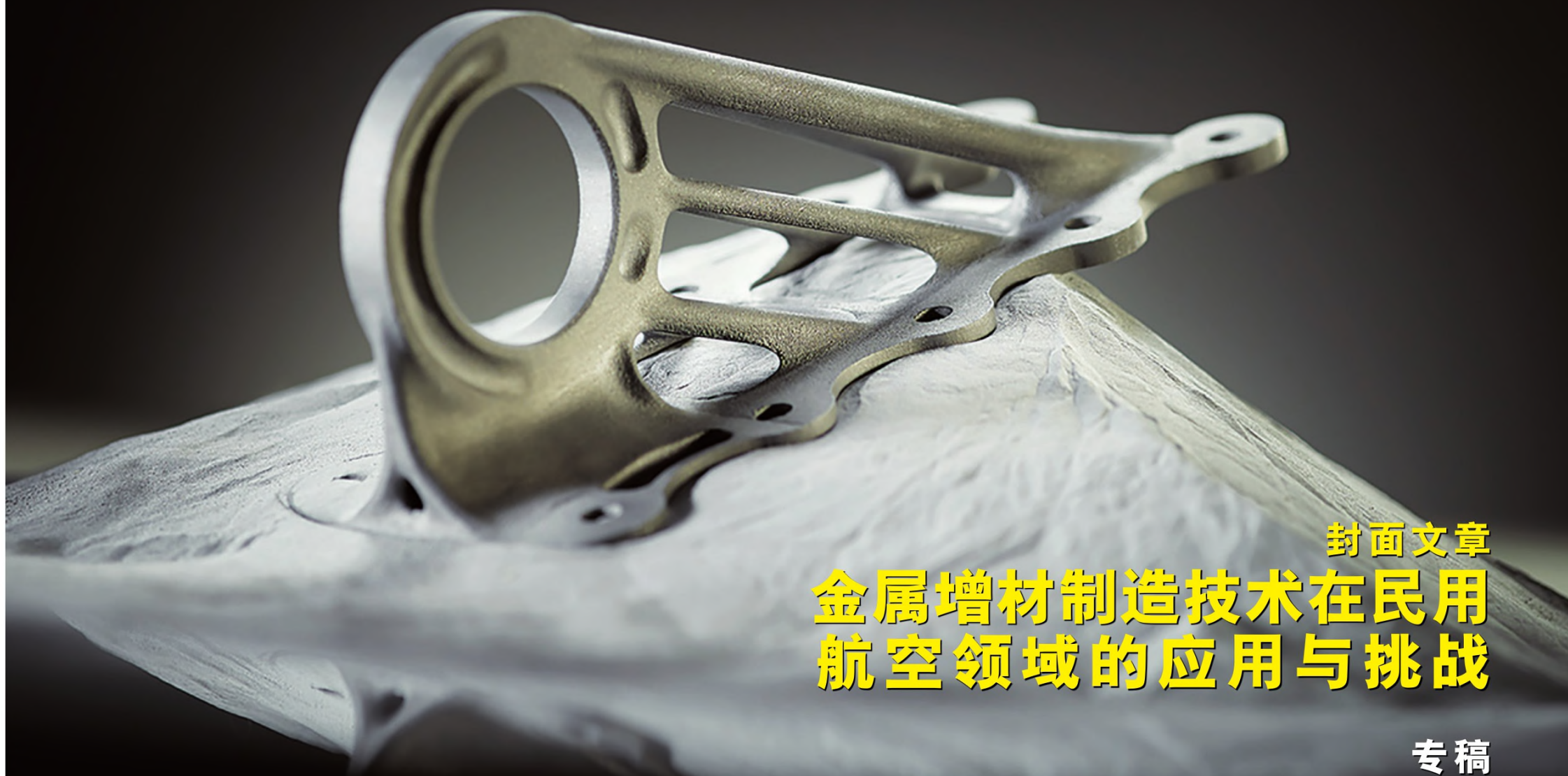


# 航空制造技术

2019年 第**21**期

Vol.62 No.21



封面文章

## 金属增材制造技术在民用航空领域的应用与挑战

专稿

## 热喷涂纳米结构热障涂层的高温长效服役性能研究进展

论坛

## 表面工程

走进科研

## 中铝材料院

www.amte.net.cn

ISSN 1671-833X

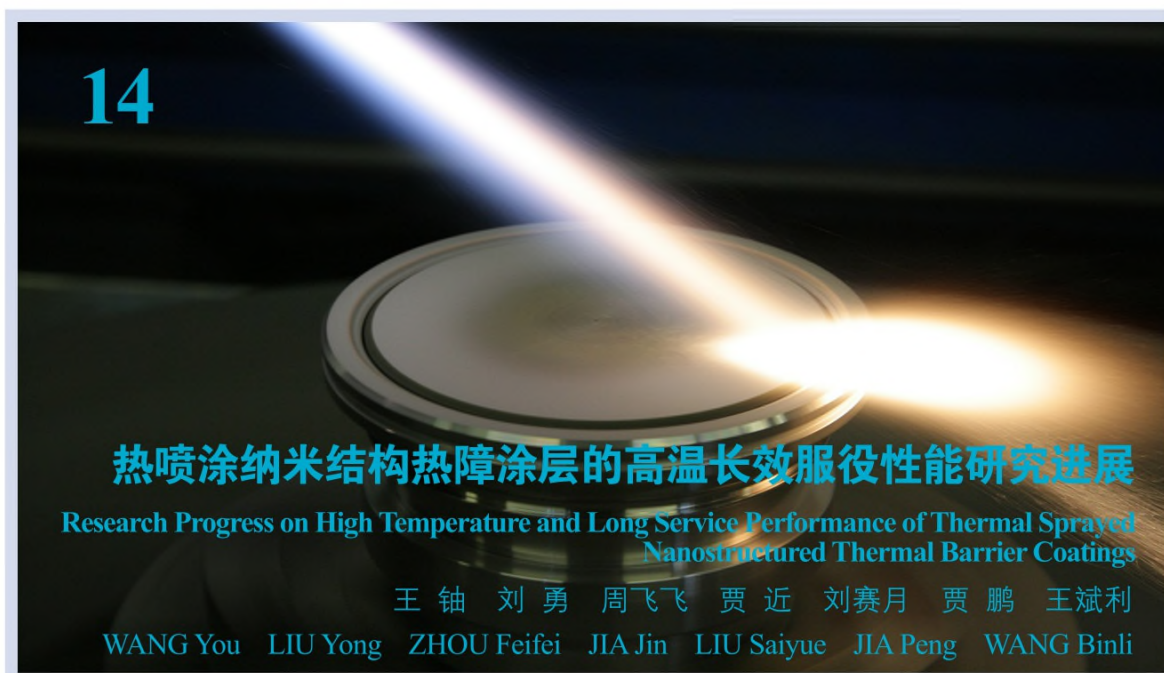


ISSN 1671-833X CN 11-4387/V





专稿 Feature



封面文章 Cover Story

论坛 Forum

表面工程

Surface Engineering

- 22 金属增材制造技术在民用航空领域的应用与挑战  
雷力明 侯慧鹏 何艳丽 李雅莉 付俊  
Application and Challenges of Metal Additive Manufacturing in Civil Aviation  
LEI Liming HOU Huipeng HE Yanli LI Yali FU Jun
- 34 温辅助激光冲击强化技术原理与应用研究  
赵吉宾 陆莹 乔红超 孙博宇  
Research on Principle and Application of Warm Laser Shock Processing Technology  
ZHAO Jibin LU Ying QIAO Hongchao SUN Boyu
- 40 喷砂处理对8Cr4Mo4V钢表面状态的影响  
魏英华 袁晓光 安敏 周驰滨 于兴福  
Effect of Sand Blasting Treatment on Surface State of 8Cr4Mo4V Steel  
WEI Yinghua YUAN Xiaoguang AN Min ZHOU Chibin YU Xingfu
- 47 TC4钛合金桨叶包铁胶接表面处理工艺研究  
李文 朱彦海 孙刚 张艳苓  
Study on Adhesive Bonding Surface Treatment Process of TC4 Titanium Alloy Leading Edge Protection of Blade  
LI Wen ZHU Yanhai SUN Gang ZHANG Yanling
- 52 7075铝合金连接孔复合强化数值模拟及疲劳试验研究  
刘渊 薛红前 靳泓睿 高国强  
Numerical Simulation and Fatigue Experiment of 7075 Aluminum Alloy Joint Holes Processed by Compound Strengthening Technology  
LIU Yuan XUE Hongqian JIN Hongrui GAO Guoqiang
- 59 激光熔覆FeMnNiCoCr高熵合金涂层的组织结构及腐蚀性能研究  
刘涛 赵立娟 庄梦雅 纪秀林  
Microstructure and Corrosion Resistance of Laser Cladding FeMnNiCoCr High-Entropy Alloy Coatings  
LIU Tao ZHAO Lijuan ZHUANG Mengya JI Xiulin
- 64 42CrMo钢离子氮氧共渗与离子渗氮对比研究  
缪小吉 武计强 梅文臣 孙斐 徐磊 张玉龙 胡静  
Comparative Study on Plasma Oxynitriding and Plasma Nitriding for 42CrMo Steel  
MIAO Xiaoji WU Jiqiang MEI Wenchen SUN Fei XU Lei ZHANG Yulong HU Jing



## 走进科研

Approaching Science



## 研究论文

Research

### 72 基于正交试验的铸造高Nb-TiAl合金收缩率研究

刘金虎 丁贤飞 冯新 南海

Study on Shrinkage Ratio of Cast High Nb-TiAl Alloy Based on Orthogonal Test

LIU Jinhu DING Xianfei FENG Xin NAN Hai

### 79 热压罐成型复合材料所用框架式模具热弹性耦合优化设计

贾东升 高彤 唐磊 许英杰

Thermo-Elastic Topology Optimization of Framed Mould Used in Autoclave Processing for Composite Structures Forming

JIA Dongsheng GAO Tong TANG Lei XU Yingjie

### 83 钛合金铣削加工中冷却润滑方式的作用效果研究

陈博川 袁松梅 朱光远 杨宏青 姜涛

Effects of Different Cooling and Lubrication Methods on Milling of Titanium Alloy

CHEN Bochuan YUAN Songmei ZHU Guangyuan YANG Hongqing JIANG Tao

### 94 激光选区熔化中分区薄壁支撑自动生成技术

闫利强 孟月梅 侯志霞

Automatic Generation Technology of Thin-Walled Support Based on Separate Area in Selective Laser Melting

YAN Liqiang MENG Yuemei HOU Zhixia

# Contents



starrag

Engineering precisely what you value

Ecospeed

你，一贯争分夺秒



75%

零件加工时间的节省归功于  
Sprint Z3并联主轴头的使用