



ISSN 1001-4381







## 2018年第46卷第12期(总第427期)

# 目 次

### 综 述

氧化物/氧化物陶瓷基复合材料及其制备工艺研究进展
研究论文
功能化氧化石墨烯改性双马树脂及其复合材料 李 闯,李 伟,王明宇,王柏臣,冯博文,李勃翰,李 强 (48)
电子束辐照含铍聚碳硅烷制备含铍碳化硅纤维 ············· 朱文华,岳建岭,黄小忠,王春齐,胡思闽,王 畅 (54) 航空碳纤维增强树脂基复合材料加筋壁板吸湿行为
原位聚合改性纳米层状黏土/脂肪族聚酯嵌段共聚物复合材料的制备与性能
Cr <sub>3</sub> C <sub>2</sub> 添加剂对 ZrB <sub>2</sub> -SiC 复合陶瓷性能的影响 李麒,喻彪,郭丰伟,曹腊梅,益小苏(78) 喷雾干燥条件对合成纳/微结构 LiFePO <sub>4</sub> /C 形貌及性能的影响 吕奕菊,谭家栩,蒋世权,文衍宣,张淑芬(85)
铜锌锡硫薄膜太阳能电池吸收层的银掺杂 李 桐,张林睿,杨炎翰,张永哲,宋雪梅,汪 浩,严 辉 (95)
基于 M IV 的聚碳酸酯大气老化影响因子权重分析 杨斌,李敬洋,文磊(101)
硅溶胶改性水性丙烯酸树脂对镀锌三价铬钝化膜的封闭作用 孙 伟,朱立群,李卫平,刘慧丛 (110) 氩气雾化 Ti-48 Al 合金液滴的快速冷却和凝固组织
回归时间对 7150 铝合金力学性能与组织的影响 张 研,邓运来,范世通,龙 涛 (131)
塞棒材料对铝合金摩擦塞补焊接头组织及拉伸断裂行为的影响 杜 波,杨新岐,孙转平,王东坡(137)
激光沉积修复 TA15 钛合金微观组织及力学性能 邢如飞,许星元,黄双君,王 磊,周 松,许 良 (144)
不同温度热暴露对铸造 TiAl 合金室温拉伸塑性的影响 王红卫,朱春雷,张 继,曹 睿 (151)
激光重熔处理对铝合金微弧氧化膜组织与性能的影响
······ 唐仕光,陈泉志,蒋智秋,童 庆,董婉冰,李伟洲 (157)

**封面照片**:基体成分对  $SiC_P/Al$ -Fe-V-Si 复合材料显微组织与性能的影响(见贺毅强等论文,第 126 页图 2)

责任编辑 王 晶

# JOURNAL OF MATERIALS ENGINEERING (Monthly)

# Vol.46 No. 12 (Sum 427) December 2018

### CONTENTS

#### **REVIEW**

Research Progress in Oxide/Oxide Ceramic Matrix Composites and Processing Technologies
Progress in Additive Manufacturing Technique Based on Pulsed TIG
Research Progress on Synthesis and Application of Graphene Reinforced Metal Matrix Composites  WANG Jian-qiao, LEI Wei-ning, XUE Zi-ming, QIAN Hai-feng, LIU Wei-qiao(18)
Research Status on Strengthening Mechanism of Particle-reinforced Metal Matrix Composites  YE Xiang-ping ,LI Ying-lei ,WENG Ji-dong ,CAI Ling-cang ,LIU Cang-li(28)
Development and Application of Adhesive Materials for Advanced Composite Bonding QIAO Hai-tao ,LIANG Bin ,ZHANG Jun-ying ,LIU Qing-fang ,LU Song ,ZHAO Sheng-long ,ZHANG Rui-xiu(38)
RESEARCH ARTICLE
Modification of Bismaleimide Resin and Its Composites by Using Functionalized Graphene Oxide LI Chuang ,LI Wei ,WANG Ming-yu ,WANG Bai-chen ,FENG Bo-wen ,LI Bo-han ,LI Qiang (48)
Synthesis of Silicon Carbide Fiber Containing Beryllium from Polyberylliumocarbosilane Using Electron Beam Irradiation
ZHU Wen-hua, YUE Jian-ling, HUANG Xiao-zhong, WANG Chun-qi, HU Si-min, WANG Chang (54)  Moisture Behavior of Aeronautic Carbon Fiber Reinforced Resin Composite Stiffened Panel TAN Xiang-fei, TAN Peng-da, HE Yu-ting, FENG Yu, AN Tao, ZHANG Tian-yu, LIU Kai (61)
Synthesis and Properties of Aliphatic Polyester Block Copolymers Filled with Nano Layered Clay Prepared by In-situ Graft Polymerization
MAO Long ,LIU Yue-jun ,YAO Jin ,WU Hui-qing ,BAI Yong-kang (70)
Effect of Cr <sub>3</sub> C <sub>2</sub> Addition on Properties of ZrB <sub>2</sub> -SiC Ceramic LI Qi,YU Biao,GUO Feng-wei,CAO La-mei,YI Xiao-su(78)
Effects of Spray Drying Conditions on Morphology and Performance of Nano/Micro Structure  LiFePO <sub>4</sub> /C LYU Yi-ju, TAN Jia-xu, JIANG Shi-quan, WEN Yan-xuan, ZHANG Shu-fen (85)
Ag Incorporation in Cu <sub>2</sub> ZnSnS <sub>4</sub> Thin Film Solar Cell Absorbed Layer LI Tong ,ZHANG Lin-rui ,YANG Yan-han ,ZHANG Yong-zhe ,SONG Xue-mei ,WANG Hao ,YAN Hui(95)
Weight Analysis of Atmospheric Aging of Polycarbonate Impact Factors Based on MIV Method  YANG Bin ,LI Jing-yang ,WEN Lei(101)
Sealing Effects of Silica Sol Modified Waterborne Acrylic Resin on Chromium Trivalent Passivation Film of Galvanized Steel
Rapid Cooling and Solidification Microstructure of Argon Atomized Ti-48Al Alloy Droplets
Effects of Matrix Components on Microstructure and Properties of SiC <sub>P</sub> /Al-Fe-V-Si Composites  HE Yi-qiang ,XU Hu-lin ,QIAN Chen-chen ,DING Yun-fei ,FENG Wen ,
CHEN Jing-song ,LI Hua-qiang ,FENG Li-chao (124) Influence of Retrogression Time on Mechanical Properties and Microstructure of 7150 Aluminum Alloy
Effect of Plug Materials on Microstructure and Tensile Fracture Behavior of Aluminum Alloy Friction  Plug Welds ————————————————————————————————————
Microstructure and Mechanical Properties of Laser Deposition Repaired TA15 Titanium Alloy
Influence of Thermal Exposure at Different Temperatures on Room Temperature Tensile Ductility of Cast TiAl Alloy WANG Hong-wei, ZHU Chun-lei, ZHANG Ji, CAO Rui(151)
Effect of Laser Remelting Treatment on Microstructure and Properties of Aluminum Alloy Micro-arc
Oxidation Coatings 一方数据 TANG Shi-guang, CHEN Quan-zhi, JIANG Zhi-qiu, TONG Qing, DONG Wan-bing, LI Wei-zhou(157)