

1956年创刊

EI 收录期刊

中文核心期刊

ISSN 1001-4381

CODEN CAGOEW

材料工程

5 2021

JOURNAL OF MATERIALS ENGINEERING

第49卷 | Vol.49



ISSN 1001-4381



万方数据



中国航发北京航空材料研究院 主办

2021 年第 49 卷第 5 期 (总第 456 期)

目 次

综 述

高韧性三元层状陶瓷: 从 MAX 相到 MAB 相

柏跃磊, 尹航, 宋广平, 赫晓东, 齐欣欣, 高进, 郝兵兵, 张金泽 (1)

生物可降解医用镁合金体内降解行为研究进展

田亚强, 赵冠璋, 刘芸, 张源, 郑小平, 陈连生 (24)

负泊松比超材料和结构 高玉魁 (38)

水滑石作为润滑油(脂)添加剂的摩擦性能及其影响因素 李桂金, 张忠伦, 白志民 (48)

相变储湿复合材料及其应用研究进展 张浩, 臧君杰, 李海丽, 宗志芳 (56)

研究论文

3D 打印琼脂糖和海藻酸钠复合水凝胶组织与性能研究

汤桂平, 严倩, 刘洁, 宋波, 文世峰, 史玉升 (66)

$W_{18}O_{49}/C-TiO_2$ 直接 Z 型光催化剂的制备及光解水制氢性能

张坤, 杨玉蓉, 陈飞阳, 齐琪, 张春光, 高帆 (75)

三维结构石墨烯气凝胶/环氧树脂复合材料的制备和电磁屏蔽性能

陈宇, 张代军, 李军, 温嘉轩, 陈祥宝 (82)

静电纺 CA/PpIX 多孔纤维膜的制备及其光动力性能 沈慧颖, 吕子豪, 庄粟裕, 曹秀明, 王清清 (89)

炭化过程施压对气体扩散层用碳纸结构与性能的影响 方滔, 陈力, 廉博博, 胡健, 李海龙 (98)

颜色可调 $Y(PO_3)_3: Tb^{3+}, Yb^{3+}$ 上转换发光材料的共沉淀制备及性能

李慧玲, 李蓝苹, 饶啟亮, 张玲, 陈雪羽, 顾曼琦, 杨锦瑜 (106)

热氧老化作用对丁腈橡胶力学性能和摩擦学行为的影响

李波, 李圣鑫, 张执南, 张坚, 熊光耀, 沈明学 (114)

2195 铝锂合金超声振动辅助搅拌摩擦焊接工艺研究 石磊, 戴翔, 武传松, 傅莉 (122)

中间形变热处理对 2A97 铝锂合金组织和性能的影响

于娟, 陆政, 鲁原, 熊艳才, 李国爱, 冯朝辉, 郝时嘉 (130)

超音速微粒轰击对 TC11 钛合金组织和疲劳性能的影响

武永丽, 熊毅, 陈正阁, 查小琴, 岳赟, 刘玉亮, 张金民, 任凤章 (137)

SiC/SiC 复合材料在高温空气中的氧化行为 洪智亮, 张巧君, 李开元, 郭洪宝, 张程煜, 刘永胜 (144)

硅溶胶添加对氧化铝多孔陶瓷烧结性能的影响

林洪玉, 李晓鸿, 陈璐, 杨波, 姚森, 曾小州, 李安林, 黎阳 (151)

ZrO_2/Al_2O_3 多孔陶瓷的制备与力学性能 蒋浩然, 林硕, 张康飞, 王海燕, 王佳齐, 何秀兰 (157)

甲基硅酸盐/硅酸盐复合膜的组成和性能研究 张双红, 杨波, 翟伟, 李爽, 孔纲 (163)

完全非晶态 Ni-B 合金镀层的电沉积制备 韩锡正, 费敬银, 赵利娜, 燕宝强, 王俊 (171)

封面照片: ZrO_2/Al_2O_3 多孔陶瓷的制备与力学性能 (见蒋浩然等论文, 第 160 页图 5)

责任编辑 寇凤梅

CONTENTS

REVIEW

- High-fracture-toughness ternary layered ceramics: from the MAX to MAB phases
..... BAI Yue-lei, YIN Hang, SONG Guang-ping, HE Xiao-dong, QI Xin-xin,
GAO Jin, HAO Bing-bing, ZHANG Jin-ze(1)
- Research progress in degradation behavior of biodegradable medical Mg-based alloys *in vivo* and *in vitro*
..... TIAN Ya-qiang, ZHAO Guan-zhang, LIU Yun, ZHANG Yuan, ZHENG Xiao-ping, CHEN Lian-sheng(24)
- Auxetic metamaterials and structures GAO Yu-kui(38)
- Friction performance of hydrotalcite as lubrication oil (grease) additive and its influence factors
..... LI Gui-jin, ZHANG Zhong-lun, BAI Zhi-min(48)
- Research status and application of phase change humidity storage composite materials
..... ZHANG Hao, ZANG Jun-jie, LI Hai-li, ZONG Zhi-fang(56)

RESEARCH ARTICLE

- Microstructure and properties of 3D printed agarose and sodium alginate composite hydrogel
..... TANG Gui-ping, YAN Qian, LIU Jie, SONG Bo, WEN Shi-feng, SHI Yu-sheng(66)
- Preparation of $W_{18}O_{49}/C-TiO_2$ direct Z-scheme photocatalyst and photocatalytic water splitting for H_2
production ZHANG Kun, YANG Yu-rong, CHEN Fei-yang, QI Qi, ZHANG Chun-guang, GAO Fan(75)
- Preparation and electromagnetic interference shielding performance of epoxy composites modified with
three-dimensional graphene aerogels
..... CHEN Yu, ZHANG Dai-jun, LI Jun, WEN Jia-xuan, CHEN Xiang-bao(82)
- Preparation and photodynamic performance of electrospinning CA/PpIX porous fibrous membrane
..... SHEN Hui-ying, LYU Zi-hao, ZHUANG Su-yu, CAO Xiu-ming, WANG Qing-qing(89)
- Effect of applying pressure during carbonization process on structure and properties of carbon paper for
gas diffusion layer FANG Tao, CHEN Li, LIAN Bo-bo, HU Jian, LI Hai-long(98)
- Coprecipitation synthesis and properties of color tunable and upconversion luminescence in Tb^{3+} and
 Yb^{3+} co-doped $Y(PO_3)_3$ materials
..... LI Hui-ling, LI Lan-ping, RAO Qi-liang, ZHANG Ling, CHEN Xue-yu, GU Man-qi, YANG Jin-yu(106)
- Effect of thermo-oxidative aging on mechanical properties and tribological behaviors of acrylonitrile-
butadiene rubber LI Bo, LI Sheng-xin, ZHANG Zhi-nan, ZHANG Jian, XIONG Guang-yao, SHEN Ming-xue(114)
- Process investigation on ultrasonic vibration enhanced friction stir welding of 2195
aluminum-lithium alloy SHI Lei, DAI Xiang, WU Chuan-song, FU Li(122)
- Effect of intermediate thermomechanical treatment on microstructure and properties of 2A97 Al-Li alloy
..... YU Juan, LU Zheng, LU Yuan, XIONG Yan-cai, LI Guo-ai, FENG Zhao-hui, HAO Shi-jia(130)
- Effect of supersonic fine particle bombardment on microstructure and fatigue properties of TC11
titanium alloy WU Yong-li, XIONG Yi, CHEN Zheng-ge, ZHA Xiao-qin, YUE Yun,
LIU Yu-liang, ZHANG Jin-min, REN Feng-zhang(137)
- Oxidation behavior of SiC/SiC composites in air at high temperature
..... HONG Zhi-liang, ZHANG Qiao-jun, LI Kai-yuan, GUO Hong-bao, ZHANG Cheng-yu, LIU Yong-sheng(144)
- Effect of silica sol addition on sintering properties of porous alumina ceramics
..... LIN Hong-yu, LI Xiao-hong, CHEN Lu, YANG Bo, YAO Sen, ZENG Xiao-zhou, LI An-lin, LI Yang(151)
- Preparation and mechanical properties of ZrO_2/Al_2O_3 porous ceramics
..... JIANG Hao-ran, LIN Shuo, ZHANG Kang-fei, WANG Hai-yan, WANG Jia-qi, HE Xiu-lan(157)
- Composition and properties of methyl silicate/silicate composite coatings
..... ZHANG Shuang-hong, YANG Bo, ZHAI Wei, LI Shuang, KONG Gang(163)
- Electrodeposition of completely amorphous Ni-B alloy coatings
..... 万方数据 HAN Xi-zheng, FEI Jing-yin, ZHAO Li-na, YAN Bao-qiang, WANG Jun(171)