



ISSN 1003-6326
CODEN TNMCEW

Transactions of Nonferrous Metals Society of China

中国有色金属学报(英文版)

October 2012

Volume 22 Number 10

**Proceedings of 2012 Postdoctoral
Symposium of China on
Materials Science and Engineering**

**Guest Editors: WU Yi-xiong
ZHANG Liang
GONG Liang**

www.tnmsc.cn
f-ysxb@mail.csu.edu.cn

目次

- 热处理过程中Mg-2Nd-4Zn-1Zr合金微观组织的结构特征.....梁敏洁, 廖海洪, 丁文江, 彭立明, 付彭怀 (2327)
- 显微组织对镁合金冲击韧性的影响.....黄正华, 戚文军, 徐 静 (2334)
- 热处理对挤压态Mg-2.7Nd-0.2Zn-0.4Zr合金组织、力学性能和体外降解行为的影响.....章晓波, 薛亚军, 王章忠 (2343)
- 低温形变热处理制备Mg-6Gd-1Y-0.5Zr合金的力学性能.....李德江, 曾小勤, 谢艳才, 吴玉娟, 丁文江, 陈 彬 (2351)
- 冷却条件对超声振动法制备AZ91半固态浆料组织的影响.....张 亮, 吴国华, 王少华, 丁文江 (2357)
- 等温热处理工艺参数对Mg-8%Al-1%Si合金半固态显微组织的影响.....曹丽杰, 马国睿, 唐春冲 (2364)
- 流动应力-应变关系对5754O铝合金板成形极限的影响.....王海波, 万 敏, 阎 昱 (2370)
- 超细晶Inconel718合金激光对接板的高温拉伸性能.....曲凤盛, 刘旭光, 邢 飞, 张凯锋 (2379)
- 带缺口的熔模铸造TiAl合金断裂特性的扫描电镜原位观察
.....陈艳飞, 郑顺奇, 涂江平, 肖树龙, 田 竟, 徐丽娟, 陈玉勇 (2389)
- 热处理对EB-PVD制备的NiCoCrAl薄板的微观结构和拉伸强度的影响.....史国栋, 王 智, 王奕首, 武湛君, 梁 军 (2395)
- 锆合金在应变速率 1000 s^{-1} 下动态压缩显微组织的演化规律.....邹东利, 栾佰峰, 刘 庆 (2402)
- Ti-Cr合金的非等温氧化及着火预测.....弭光宝, 黄秀松, 李培杰, 曹京霞, 黄 旭, 曹春晓 (2409)
- Cu/Ti电子束叠加焊接对金属间化合物层的影响.....陈国庆, 张秉刚, 刘 伟, 冯吉才 (2416)
- 深冷处理温度场和组织场的有限元模拟与实验验证.....黎军硕, 汤磊磊, 李绍宏, 吴晓春 (2421)
- 高速滚动轴承用TiNi60合金的润滑性能及油气润滑两相流流型的数值计算.....曾群锋, 赵西朦, 董光能, 吴红星 (2431)
- $\text{Ni}_{75}\text{Al}_{7.5}\text{V}_{17.5}$ 相变过程中 L1_2 相合金元素占位几率演化的微观相场模拟
.....张明义, 刘 富, 陈 铮, 郭红军, 岳广全, 杨 坤 (2439)
- 晶体塑性模型分析微圆柱墩粗变形尺寸效应机理.....程利冬, 王振龙 (2444)
- $\text{ZnSnO}_3\text{-SnO}_2$ 纳米片分级结构的自组装及气敏特性.....曾 毅, 邴一飞, 刘 畅, 郑伟涛, 邹广田 (2451)
- 单晶ZnO六棱锥的PEG400辅助热分解合成及其光致发光性能
.....刘劲松, 张 朔, 李子全, 朱孔军, 陈建康, 裘进浩, 王春花, 高雪琴, 王莉萍 (2459)
- 微波水热法合成花状纳米ZnO及其光催化活性.....伍水生, 贾庆明, 孙彦林, 陕绍云, 蒋丽红, 王亚明 (2465)
- $(\text{Y}_{0.95}\text{Eu}_{0.05})_2\text{O}_3$ 亚微米球、微米板片的选择合成及荧光性能的形貌依存性.....朱 琦, 李继光, 胥 永, 李晓东, 孙旭东 (2471)
- 球形活性炭负载和 $\text{Er}^{3+}:\text{YAlO}_3$ 掺杂 TiO_2 的制备及其在可见光下降解甲基橙
.....董双石, 张建宾, 高琳琳, 王艳龙, 周丹丹 (2477)
- 纳米 MoS_2 /膨润土复合物的合成及其在去除有机染料中的应用.....胡坤宏, 赵娣芳, 刘俊生 (2484)
- $\text{Au}/\text{Al}_2\text{O}_3$ 层状复合纳米涂层的制备及其抗氧化性能.....高俊国, 陆 峰, 汤智慧, 王长亮, 何业东 (2491)
- 激光熔覆 $\text{Al}_2\text{O}_3\text{-13\%TiO}_2$ 陶瓷涂层的界面特征.....高雪松, 田宗军, 刘志东, 沈理达 (2498)
- Langmuir-Blodgett自组装法制备超大尺寸氧化石墨烯透明导电薄膜.....郑庆彬, 师丽芳, 杨俊和 (2504)
- 热挤压制备 BaTiO_3/Al 复合材料的阻尼性能.....范根莲, 李志强, 张 荻 (2512)
- 高性能锂离子电池负极材料 $\text{CoO}/$ 石墨烯纳米复合结构的超声法制备.....陈炳地, 彭成信, 崔 征 (2517)
- 花状CuO和花状CuO/石墨烯复合材料的制备及其在锂离子电池中的应用
.....陈 晗, 冯 钊, 胡忠良, 刘富生, 龚文强, 向楷雄 (2523)
- 溶液法合成锂离子纳米 $\text{Li}_2\text{FeSiO}_4/\text{C}$ 电池正极材料.....杨 蓉, 刘晓艳, 曲 冶, 雷 京, Jou-Hyeon AHN (2529)
- 溶胶-凝胶法合成 LiMnPO_4/C 锂离子电池复合材料.....钟胜奎, 王 友, 刘洁群, 王 健 (2535)
- 耐久型高倍率性能锰酸锂微球的合成.....周玉波, 邓远富, 袁伟豪, 施志聪, 陈国华 (2541)
- 冶金硅定向凝固法制备太阳能级多晶硅及其微观组织与位错.....苏海军, 张 军, 刘 林, 傅恒志 (2548)
- 金属生物材料支架的微结构拓扑优化设计及选区激光熔化制造.....肖冬明, 杨永强, 苏旭彬, 王 迪, 罗子艺 (2554)
- 不同预制体炭/炭复合材料在髌关节模拟试验机中的磨损颗粒表征
.....张磊磊, 李贺军, 张守阳, 卢锦花, 张雨雷, 赵雪妮, 谷彩阁, 曾燮榕 (2562)
- 电磁场辅助CVD沉积倒锥状热解炭的微结构及形成机理.....涂川俊, 黄启忠, 张明瑜, 赵新奇, 陈江华 (2569)
- 双晶体NiTi形状记忆合金在无/有应力作用时效下的 Ni_4Ti_3 相沉淀行为模拟.....柯常波, 曹姗姗, 马 骁, 张新平 (2578)
- 摩擦条件对化学混杂复合镀层Ni-P-Gr-SiC摩擦性能的影响.....何美凤, 胡文彬, 钟 澄, 翁俊飞, 沈 彬, 仵亚婷 (2586)

Proceedings of 2012 Postdoctoral Symposium of China on Materials Science and Engineering

CONTENTS

Structural Materials

- Microstructure characterization on Mg–2Nd–4Zn–1Zr alloy during heat treatment
..... LIANG Min-jie, LIAO Hai-hong, DING Wen-jiang, PENG Li-ming, FU Peng-huai (2327)
- Effect of microstructure on impact toughness of magnesium alloys ... HUANG Zheng-hua, QI Wen-jun, XU Jing (2334)
- Effect of heat treatment on microstructure, mechanical properties and in vitro degradation behavior of as-extruded
Mg–2.7Nd–0.2Zn–0.4Zr alloy..... ZHANG Xiao-bo, XUE Ya-jun, WANG Zhang-zhong (2343)
- Mechanical properties of Mg–6Gd–1Y–0.5Zr alloy processed by low temperature thermo-mechanical treatment
..... LI De-jiang, ZENG Xiao-qin, XIE Yan-cai, WU Yu-juan, DING Wen-jiang, CHEN Bin (2351)
- Effect of cooling condition on microstructure of semi-solid AZ91 slurry produced via ultrasonic vibration process
..... ZHANG Liang, WU Guo-hua, WANG Shao-hua, DING Wen-jiang (2357)
- Effects of isothermal process parameters on semisolid microstructure of Mg–8%Al–1%Si alloy
..... CAO Li-jie, MA Guo-rui, TANG Chun-chong (2364)
- Effect of flow stress—strain relation on forming limit of 5754O aluminum alloy
..... WANG Hai-bo, WAN Min, YAN Yu (2370)
- High temperature tensile properties of laser butt-welded plate of Inconel 718 superalloy with ultra-fine grains
..... QU Feng-sheng, LIU Xu-guang, XING Fei, ZHANG Kai-feng (2379)
- Fracture characteristics of notched investment cast TiAl alloy through in situ SEM observation
..... CHEN Yan-fei, ZHENG Shun-qi, TU Jiang-ping,
XIAO Shu-long, TIAN Jing, XU Li-juan, CHEN Yu-yong (2389)
- Effect of heat treatment on microstructure and tensile strength of NiCoCrAl alloy sheet fabricated by EB-PVD
..... SHI Guo-dong, WANG Zhi, WANG Yi-shou, WU Zhan-jun, LIANG Jun (2395)
- Microstructural evolution of zirconium alloy under dynamic compression at strain rate of 1000 s^{-1}
..... ZOU Dong-li, LUAN Bai-feng, LIU Qing (2402)
- Non-isothermal oxidation and ignition prediction of Ti–Cr alloys
..... MI Guang-bao, HUANG Xiu-song, LI Pei-jie, CAO Jing-xia, HUANG Xu, CAO Chun-xiao (2409)
- Influence of electron-beam superposition welding on intermetallic layer of Cu/Ti joint
..... CHEN Guo-qing, ZHANG Bing-gang, LIU Wei, FENG Ji-cai (2416)
- FEM simulation and experimental verification of temperature field and phase transformation in deep cryogenic
treatment LI Jun-wan, TANG Lei-lei, LI Shao-hong, WU Xiao-chun (2421)
- Lubrication properties of Nitinol 60 alloy used as high-speed rolling bearing and numerical simulation of flow
pattern of oil–air lubrication..... ZENG Qun-feng, ZHAO Xi-meng, DONG Guang-neng, WU Hong-xing (2431)
- Site occupation evolution of alloying elements in L_{12} phase during phase transformation in $\text{Ni}_{75}\text{Al}_{7.5}\text{V}_{17.5}$
..... ZHANG Ming-yi, LIU Fu, CHEN Zheng, GUO Hong-jun, YUE Guang-quan, YANG Kun (2439)
- Scale effect mechanism on micro rod upsetting deformation analyzed by crystal plasticity model
..... CHENG Li-dong, WANG Zhen-long (2444)

Functional Materials

- Self-assembly of hierarchical ZnSnO_3 – SnO_2 nanoflakes and their gas sensing properties
..... ZENG Yi, BING Yi-fei, LIU Chang, ZHENG Wei-tao, ZOU Guang-tian (2451)

- Synthesis and photoluminescence properties of single-crystal ZnO hexagonal pyramids by PEG400-assisted thermal decomposition route..... LIU Jin-song, ZHANG Shuo, LI Zi-quan, ZHU Kong-jun, CHEN Jian-kang, QIU Jin-hao, WANG Chun-hua, GAO Xue-qin, WANG Li-ping (2459)
- Microwave-hydrothermal preparation of flower-like ZnO microstructure and its photocatalytic activity WU Shui-sheng, JIA Qing-ming, SUN Yan-lin, SHAN Shao-yun, JIANG Li-hong, WANG Ya-ming (2465)
- Selective synthesis and shape-dependent photoluminescence properties of $(Y_{0.95}Eu_{0.05})_2O_3$ submicron spheres and microplates..... ZHU Qi, LI Ji-guang, XU Yong, LI Xiao-dong, SUN Xu-dong (2471)
- Preparation of spherical activated carbon-supported and Er^{3+} : $YAlO_3$ -doped TiO_2 photocatalyst for methyl orange degradation under visible light DONG Shuang-shi, ZHANG Jian-bin, GAO Lin-lin, WANG Yan-long, ZHOU Dan-dan (2477)
- Synthesis of nano- MoS_2 /bentonite composite and its application for removal of organic dye HU Kun-hong, ZHAO Di-fang, LIU Jun-sheng (2484)
- Preparation of Al_2O_3 /Au nano-laminated composite coatings and their oxidation resistance on stainless steel GAO Jun-guo, LU Feng, TANG Zhi-hui, WANG Chang-liang, HE Ye-dong (2491)
- Interface characteristics of Al_2O_3 -13% TiO_2 ceramic coatings prepared by laser cladding GAO Xue-song, TIAN Zong-jun, LIU Zhi-dong, SHEN Li-da (2498)
- Langmuir-Blodgett assembly of ultra-large graphene oxide films for transparent electrodes ZHENG Qing-bin, SHI Li-fang, YANG Jun-he (2504)
- Damping capacity of $BaTiO_3$ /Al composites fabricated by hot extrusion FAN Gen-lian, LI Zhi-qiang, ZHANG Di (2512)
- Ultrasonic synthesis of CoO/graphene nanohybrids as high performance anode materials for lithium-ion batteries CHEN Bing-di, PENG Cheng-xin, CUI Zheng (2517)
- Preparation of uniform flower-like CuO and flower-like CuO/graphene composite and their application in lithium ion batteries..... CHEN Han, FENG Fan, HU Zhong-liang, LIU Fu-sheng, GONG Wen-qiang, XIANG Kai-xiong (2523)
- Synthesis of nanostructured Li_2FeSiO_4 /C cathode for lithium-ion battery by solution method YANG Rong, LIU Xiao-yan, QU Ye, LEI Jing, Jou-Hyeon AHN (2529)
- Synthesis of $LiMnPO_4$ /C composite material for lithium ion batteries by sol-gel method ZHONG Sheng-kui, WANG You, LIU Jie-qun, WANG Jian (2535)
- Synthesis of spinel $LiMn_2O_4$ microspheres with durable high rate capability ZHOU Yu-bo, DENG Yuan-fu, YUAN Wei-hao, SHI Zhi-cong, CHEN Guo-hua (2541)
- Preparation, microstructure and dislocation of solar-grade multicrystalline silicon by directional solidification from metallurgical-grade silicon SU Hai-jun, ZHANG Jun, LIU Lin, FU Heng-zhi (2548)
- Topology optimization of microstructure and selective laser melting fabrication for metallic biomaterial scaffolds XIAO Dong-ming, YANG Yong-qiang, SU Xu-bin, WANG Di, LUO Zi-yi (2554)
- Characterisation of wear particles from biomedical carbon/carbon composites with different preforms in hip joint simulator.....ZHANG Lei-lei, LI He-jun, ZHANG Shou-yang, LU Jin-hua, ZHANG Yu-lei, ZHAO Xue-ni, GU Cai-ge, ZENG Xie-rong (2562)
- Microstructures and formation mechanism of headstand pyrocarbon cones developed by electromagnetic-field-assisted CVD..... TU Chuan-jun, HUANG Qi-zhong, ZHANG Ming-yu, ZHAO Xin-qi, CHEN Jiang-hua (2569)
- Modeling of Ni_4Ti_3 precipitation during stress-free and stress-assisted aging of bi-crystalline NiTi shape memory alloys..... KE Chang-bo, CAO Shan-shan, MA Xiao, ZHANG Xin-ping (2578)
- Effect of wear conditions on tribological properties of electrolessly-deposited Ni-P-Gr-SiC hybrid composite coating..... HE Mei-feng, HU Wen-bin, ZHONG Cheng, WENG Jun-fei, SHEN Bin, WU Ya-ting (2586)

Editorial Committee of Transactions of Nonferrous Metals Society of China.....(Inside front cover)

Managing Editors: YANG Hua, YUAN Sai-qian

Serial parameter: CN43—1239/TG*1991*m*A4*266*en*P*\$50.00*1000*38*2012-10