



ISSN 1003-6326
CODEN TNMCEW

Transactions of Nonferrous Metals Society of China

中国有色金属学报(英文版)

September 2012

Volume 22 Number 9

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

目次

AZ71E镁合金的高温摩擦学行为	黄伟九, 林 强, 刘成龙 (2507)
AZ91镁合金的热力行为和显微组织演化	G. R. EBRAHIMI, A. R. MALDAR, H. MONAJATI, M. HAGHSHENAS (2066)
冷加工和时效处理顺序对6061铝合金力学性能的影响	Mostafa MANSOURINEJAD, Bahman MIRZAKHANI (2072)
热处理对挤压态7090/SiC _p 复合材料组织和力学性能的影响	袁武华, 安佰玲 (2080)
Al-Zn-Mg-Cu合金冷却过程中组织演变及其动力学分析	张玉华, 杨树财, 纪宏志 (2087)
涂层厚度对消失模铸Al-Si-Cu合金铸件的影响	Majid KARIMIAN, Ali OURDJINI, Mohd HASBULLAH IDRIS, Hassan JAFARI (2092)
一种Ni ₃ Al 基单晶高温合金的再结晶动力学及组织变化	武雨潇, 张 恒, 李福林, 李树索, 宫声凯, 韩雅芳 (2098)
Ru对镍基单晶高温合金高温持久性能的影响	史振学, 李嘉荣, 刘世忠, 王效光, 岳晓岱 (2106)
连接工艺参数对镍基高温合金TLP连接接头组织和性能的影响	林铁松, 李海新, 何 鹏, 杨 雪, 黄玉东, 李 亮, 韩 冷 (2112)
Ti-6Al-4V钛合金激光焊缝及其变形的微观表征	徐培全 (2118)
真空感应熔炼炉真空度对Ni-Fe-Cr基合金力学性能的影响	Masoud Moshtaghi, Seied Mahdi Abbasi (2124)
Pb-Bi包晶合金定向凝固过程中带状组织的形成	胡小武, 李双明, 艾凡荣, 闫 洪 (2131)
新型铝青铜及其喷涂层中Ce元素的作用	李文生, 刘 毅, 王智平, 马 超, 王顺才 (2139)
铜模铸造块体Fe-Ga合金的磁致伸缩性能和结构特征	胡 勇, 丁雨田, 张艳龙, 王国斌, 周质光 (2146)
热解温度对镧、锰共掺杂铁酸铋薄膜铁电性能的影响	成传品, 蒋 波, 唐明华, 杨松波, 肖永光, 王国阳, 周益春 (2153)
添加Sn及热处理对Co ₃₈ Ni ₃₄ Al _{28-x} Sn _x 磁性形状记忆合金显微组织和显微硬度的影响	苏佳佳, 谢致薇, 杨元政 (2158)
TiO ₂ 纳米管薄膜的屈曲图样	邹俭鹏, WANG Ri-zhi (2164)
纯钛表面激光熔覆铁基耐磨涂层结构及摩擦学性能	陈建敏, 郭 纯, 周健松 (2171)
反应合成法制备FeAl金属间化合物多孔材料的曲折因子	高海燕, 贺跃辉, ZOU Jin, 徐南平, C. T. LIU (2179)
镁合金阳极材料在海水中放电的电化学性能	余 琨, 黄 俏, 赵 俊, 戴翌龙 (2184)
一种碳纳米管增强的铜基块体非晶合金复合材料	蔡安辉, 熊 翔, 刘 咏, 安伟科, 周果君, 罗 云, 李铁林, 李小松 (2191)
通过水溶液还原法用抗坏血酸制备纳米铜颗粒	刘清明, Takehiro YASUNAMI, Kensuke KURUDA, Masazumi OKIDO (2198)
Fe-Ti二元体系的热力学重新优化	薄 宏, 王 江, Liliana DUARTE, Christian LEINENBACH, 刘立斌, 刘华山, 金展鹏 (2204)
镁合金等轴及柱状树枝晶模拟	吴孟武, 熊守美 (2212)
Preisach-Mayergoyz模型分析金属镁与钴的非线性弹性变形	李 良, 王红英, 周爱国 (2220)
2024铝合金限制膨胀变形热处理产生高压的有限元分析	赵 娜, 杨延清, 韩 明, 罗 贤, 冯广海, 张荣军 (2226)
H96黄铜薄壁矩形管绕弯回弹和截面畸变对工艺参数的敏感性	朱英霞, 刘郁丽, 杨 合 (2233)
基于地压诱导致裂的高应力硬岩矿床优化回采数值模拟	姚金蕊, 马春德, 李夕兵, 杨金林 (2241)
水的硬度对铝土矿选择性絮凝的影响	刘文莉, 孙 伟, 胡岳华 (2248)
生物浸出过程中黄铜矿钝化的控制方法	潘颖丹, 杨洪英, 佟琳琳, 仲崇斌, 赵玉山 (2255)
高铁锌焙砂在高梯度磁场中的元素分布行为	李 密, 彭 兵, 柴立元, 王纪明, 彭 宁, 闫 缓 (2261)
铜电解液净化中铜砷的分离与回收	彭映林, 郑雅杰, 周文科, 陈文汨 (2268)
酸浸和沉淀组合工艺回收废锂离子电池中的钴和锂	朱曙光, 贺文智, 李光明, 周 旭, 张骁君, 黄菊文 (2274)
加压酸浸法从粉煤灰中提取铝	吴成友, 余红发, 张慧芳 (2282)
铋粉低温氧化制备 α -Bi ₂ O ₃	夏纪勇, 唐谟堂, 陈 萃, 金胜明, 陈永明 (2289)
采用响应面方法和中心复合旋转设计对低品位锰矿浸出过程建模与优化	Dariusz AZIZI, Sied Ziaedin SHAFAEI, Mohammad NOAPARAST, Hadi ABDOLLAHI (2295)
冰晶石熔盐中阳极效应时石墨阳极的电化学行为	陈 功, 石忠宁, 高炳亮, 胡宪伟, 王兆文 (2306)
均匀磁场对Cu与液态SnZn合金间化合物层结晶行为的影响	程从前, 黄明亮, 赵 杰, 薛冬峰 (2312)
91W-6Ni-3Fe难熔合金、TiAl合金和铁基合金在熔铝中的耐腐蚀行为	肖华强, 陈维平, 柳 哲 (2320)

CONTENTS

Structural Materials

- Tribological behaviour of AZ71E alloy at high temperatures.....HUANG Wei-jiu, LIN Qiang, LIU Cheng-long (2507)
- Hot deformation behavior of AZ91 magnesium alloy in temperature ranging from 350 °C to 425 °C
.....G. R. EBRAHIMI, A. R. MALDAR, H. MONAJATI, M. HAGHSHENAS (2066)
- Influence of sequence of cold working and aging treatment on mechanical behaviour of 6061 aluminum alloy
.....Mostafa MANSOURINEJAD, Bahman MIRZAKHANI (2072)
- Effect of heat treatment on microstructure and mechanical property of extruded 7090/SiC_p composite
.....YUAN Wu-hua, AN Bai-ling (2080)
- Microstructure evolution in cooling process of Al–Zn–Mg–Cu alloy and kinetics description
.....ZHANG Yu-hua, YANG Shu-cai, JI Hong-zhi (2087)
- Effect of pattern coating thickness on characteristics of lost foam Al–Si–Cu alloy casting
.....Majid KARIMIAN, Ali OURDJINI, Mohd HASBULLAH IDRIS, Hassan JAFARI (2092)
- Kinetics and microstructural evolution during recrystallization of a Ni₃Al-based single crystal superalloy
.....WU Yu-xiao, ZHANG Heng, LI Fu-lin, LI Shu-suo, GONG Sheng-kai, HAN Ya-fang (2098)
- Effect of Ru on stress rupture properties of nickel-based single crystal superalloy at high temperature
.....SHI Zhen-xue, LI Jia-rong, LIU Shi-zhong, WANG Xiao-guang, YUE Xiao-dai (2106)
- Effect of bonding parameters on microstructures and properties during TLP bonding of Ni-based super alloy
.....LIN Tie-song, LI Hai-xin, HE Peng, YANG Xue, HUANG Yu-dong, LI Liang, HAN Leng (2112)
- Microstructure characterization of Ti–6Al–4V titanium laser weld and its deformation.....XU Pei-quan (2118)
- Effect of vacuum degree in VIM furnace on mechanical properties of Ni–Fe–Cr based alloy
.....Masoud MOSHTAGHI, Seied Mahdi ABBASI (2124)
- Banding structure formation during directional solidification of Pb–Bi peritectic alloys
.....HU Xiao-wu, LI Shuang-ming, AI Fan-rong, YAN Hong (2131)
- Effects of Ce in novel bronze and its plasma sprayed coating
.....LI Wen-sheng, LIU Yi, WANG Zhi-ping, MA Chao, WANG Shun-cai (2139)
- Magnetostriction and structural characterization of Fe–Ga bulk alloy prepared by copper mold casting
.....HU Yong, DING Yu-tian, ZHANG Yan-long, WANG Guo-bin, ZHOU Zhi-guang (2146)

Functional Materials

- Influence of pyrolysis temperature on ferroelectric properties of La and Mn co-doped BiFeO₃ thin films
.....CHENG Chuan-pin, JIANG Bo, TANG Ming-hua,
YANG Song-bo, XIAO Yong-guang, WANG Guo-yang, ZHOU Yi-chun (2153)
- Effect of Sn substitution and heat treatment on microstructure and microhardness of Co₃₈Ni₃₄Al_{28-x}Sn_x magnetic
shape memory alloys.....SU Jia-jia, XIE Zhi-wei, YANG Yuan-zheng (2158)
- Buckling pattern of TiO₂ nanotube film.....ZOU Jian-peng, WANG Ri-zhi (2164)
- Microstructure and tribological properties of laser cladding Fe-based coating on pure Ti substrate
.....CHEN Jian-min, GUO Chun, ZHOU Jian-song (2171)
- Tortuosity factor for porous FeAl intermetallics fabricated by reactive synthesis
.....GAO Hai-yan, HE Yue-hui, ZOU Jin, XU Nan-ping, C.T. LIU (2179)
- Electrochemical properties of magnesium alloy anodes discharged in seawater
.....YU Kun, HUANG Qiao, ZHAO Jun, DAI Yu-long (2184)
- A Cu-based bulk amorphous alloy composite reinforced by carbon nanotube
.....CAI An-hui, XIONG Xiang, LIU Yong, AN Wei-ke,
ZHOU Guo-jun, LUO Yun, LI Tie-lin, LI Xiao-song (2191)

Preparation of Cu nanoparticles with ascorbic acid by aqueous solution reduction method
.....LIU Qing-ming, Takehiro YASUNAMI, Kensuke KURUDA, Masazumi OKIDO (2198)

Computational Materials Science and Numerical Modelling

Thermodynamic re-assessment of Fe–Ti binary system.....BO Hong, WANG Jiang, Liliana DUARTE,
Christian LEINENBACH, LIU Li-bin, LIU Hua-shan, JIN Zhan-peng (2204)

Modeling of equiaxed and columnar dendritic growth of magnesium alloy
.....WU Meng-wu, XIONG Shou-mei (2212)

Nonlinear elastic deformation of magnesium and cobalt by Preisach-Mayergoyz model
.....LI Liang, WANG Hong-ying, ZHOU Ai-guo (2220)

Finite element analysis of pressure on 2024 aluminum alloy created during restricting expansion-deformation
heat-treatment
.....ZHAO Na, YANG Yan-qing, HAN Ming, LUO Xian, FENG Guang-hai, ZHANG Rong-jun (2226)

Sensitivity of springback and section deformation to process parameters in rotary draw bending of thin-walled
rectangular H96 brass tube.....ZHU Ying-xia, LIU Yu-li, YANG He (2233)

Mine Engineering, Metallurgical Engineering, Chemistry and Chemical Engineering

Numerical simulation of optimum mining design for high stress hard-rock deposit based on inducing fracturing
mechanism.....YAO Jin-rui, MA Chun-de, LI Xi-bing, YANG Jin-lin (2241)

Effects of water hardness on selective flocculation of diasporic bauxite
.....LIU Wen-li, SUN Wei, HU Yue-hua (2248)

Control method of chalcopyrite passivation in bioleaching
.....PAN Hao-dan, YANG Hong-ying, TONG Lin-lin, ZHONG Cong-bin, ZHAO Yu-shan (2255)

Element distribution of high iron-bearing zinc calcine in high gradient magnetic field
.....LI Mi, PENG Bing, CHAI Li-yuan, WANG Ji-ming, PENG Ning, YAN Huan (2261)

Separation and recovery of Cu and As during purification of copper electrolyte
.....PENG Ying-lin, ZHENG Ya-jie, ZHOU Wen-ke, CHEN Wen-mi (2268)

Recovery of Co and Li from spent lithium-ion batteries by combination method of acid leaching and chemical
precipitation
.....ZHU Shu-guang, HE Wen-zhi, LI Guang-ming, ZHOU Xu, ZHANG Xiao-jun, HUANG Ju-wen (2274)

Extraction of aluminum by pressure acid-leaching method from coal fly ash
.....WU Cheng-you, YU Hong-fa, ZHANG Hui-fang (2282)

Preparation of α -Bi₂O₃ from bismuth powders through low-temperature oxidation
.....XIA Ji-yong, TANG Mo-tang, CHEN Cui, JIN Sheng-ming, CHEN Yong-ming (2289)

Modeling and optimization of low-grade Mn bearing ore leaching using response surface methodology and
central composite rotatable design
.....Dariush AZIZI, Sied Ziaedin SHAF AEI, Mohammad NOAPARAST, Hadi ABDOLLAHI (2295)

Electrochemical behavior of graphite anode during anode effect in cryolite molten salts
.....CHEN Gong, SHI Zhong-ning, GAO Bing-liang, HU Xian-wei, WANG Zhao-wen (2306)

Effect of uniform magnetic field on crystallization of intermetallic compound layers between Cu and
liquid SnZn alloysCHENG Cong-qian, HUANG Ming-liang, ZHAO Jie, XUE Dong-feng (2312)

Corrosion resistance of 91W–6Ni–3Fe refractory metal, TiAl compound and iron based alloys in molten aluminum
.....XIAO Hua-qiang, CHEN Wei-ping, LIU Zhe (2320)

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

Managing Editors: LI Xiang-qun, YUAN Sai-qian

Serial parameter: CN43 — 1239/TG*1991*m*A4*270*en*P*\$50.00*1000*39*2012-09