

表面技术

BIAOMIAN JISHU

Vol.46 No.7 Jul.20, 2017

目次 CONTENTS

专题——复合涂层及其制备技术

Special Topic—Composite Coatings and Preparation Technology

1 多弧离子镀制备 CrAlSiN/TiAlSiN 纳米涂层的结构和性能研究

Structure and Properties of CrAlSiN/TiAlSiN Nano-coatings Prepared by Multi-arc Plasma Deposition

李娜, 韩滨, 左文彬, 王泽松, 柯贤文, 付德君

LI Na, HAN Bin, ZUO Wen-bin, WANG Ze-song, KE Xian-wen, FU De-jun

7 结晶器铜板表面耐磨纳米复合镀层的制备及性能

Preparation of Wear Resistant Nano Composite Coating on Surface of Copper Crystallizer

白林, 陈登福, 刘鹏, 龙木军, 段华美, 俞晟

BAI Lin, CHEN Deng-fu, LIU Peng, LONG Mu-jun, DUAN Hua-mei, YU Sheng

13 一种基于层层自组装的新型 EPS 防腐复合涂层

A New EPS Anticorrosive Composite Coating Based on Layer-by-Layer Assembly

许萍, 高飞, 翟羽佳, 汪长征, 张雅君, 魏智刚, 黄俊杰

XU Ping, GAO Fei, ZHAI Yu-jia, WANG Chang-zheng, ZHANG Ya-jun, WEI Zhi-gang, HUANG Jun-jie

20 钨极氩弧熔覆原位自生铁基复合涂层组织与性能

Microstructure and Properties of In-situ Synthesized Fe-based Composite Coating by Tungsten Inert Gas Cladding

赵迪, 马宁, 张柯柯, 杨跃

ZHAO Di, MA Ning, ZHANG Ke-ke, YANG Yue

26 水性聚苯胺/海泡石/丙烯酸乳液复合防腐涂层研究

Waterborne Polyaniline/Sepiolite/Acrylic Emulsion Composite Anticorrosive Coating

陈宇, 潘正凯, 陈均

CHEN Yu, PAN Zheng-kai, CHEN Jun

32 纳米 Al_2O_3 对电刷镀 Ni-P 复合镀层耐蚀性能的影响

Effect of Nano- Al_2O_3 on Corrosion Resistance of Ni-P Composite Coating by Electro-brush Plating

周宏明, 胡雪仪, 李荐

ZHOU Hong-ming, HU Xue-yi, LI Jian

39 热喷涂 Cr/ Al_2O_3 复合粉末的制备及性能研究

Preparation and Properties of Thermal Sprayed Cr/ Al_2O_3 Composite Powder

崔珊, 周亮, 昌花婷, 高希贤, 田小伟

CUI Shan, ZHOU Liang, CHANG Hua-ting, GAO Xi-xian, TIAN Xiao-wei

45 等离子喷涂制备 C/C 复合材料 SiC 涂层的驻点烧蚀性能

Stagnation Point Ablation Property of SiC Coating for Carbon/Carbon Composites by Vacuum Plasma Spraying

孙乐, 王成, 孟广慧, 宗彦旭, 吴坤尧, 丁旭

SUN Le, WANG Cheng, MENG Guang-hui, ZONG Yan-xu, WU Kun-yao, DING Xu

51 La 掺杂的 SnO_2 -Sb 中间层对钛基 $IrO_2+Ta_2O_5$ 电极性能的影响

Effect of La-doped SnO_2 -Sb Interlayer on Properties of Ti/ $IrO_2+Ta_2O_5$ Electrode

庞海丽, 蒙鹏君, 杨莹, 张红瑛

PANG Hai-li, MENG Peng-jun, YANG Ying, ZHANG Hong-ying

57 基体预热温度对涂层表面形貌及残余应力影响的数值模拟

Numerical Simulation of Influence of Substrate Preheating Temperature on Coating Morphology and Residual Stress

渠志刚, 贺辛亥, 刘江南, 邢圆圆, 钟鹏

QU Zhi-gang, HE Xin-hai, LIU Jiang-nan, XING Yuan-yuan, ZHONG Peng

65 铝硅聚苯酯封严涂层全尺寸刮磨实验

Full-scale Bench Test of AlSi-Polyester Seal Coating

乔家科, 孙波, 丁坤英, 张鹏, 廖智豪, 王继恒

QIAO Jia-ke, SUN Bo, DING Kun-ying, ZHANG Peng, LIAO Zhi-hao, WANG Ji-heng

70 热障涂层陶瓷层/TGO 界面开裂行为的有限元模拟

Finite Element Simulation of Ceramic Layer/TGO Interfacial Crack on Thermal Barrier Coating

刘洲庠, 于金鑫, 李强

LIU Zhou-xiang, YU Jin-xin, LI Qiang

膜层材料与技术 Coating Material and Technology

77 二相系涂层液溶剂扩散数值模拟进展

Progress in Numerical Simulation of Solvent Diffusion in Binary System of Coating Solution

张楠楠, 郑振荣, 韩晨晨, 赵晓明

ZHANG Nan-nan, ZHENG Zhen-rong, HAN Chen-chen, ZHAO Xiao-ming

85 硫酸盐体系电沉积镍钨合金工艺研究
Electrodeposition of Ni-W Alloy in Sulphate System

李林超, 胡会利, 刘爽
LI Lin-chao, HU Hui-li, LIU Shuang

91 沉积时间对 AZ91D 合金表面 Ni-P-SiC 复合镀层性能的影响
Effect of Deposition Time on Properties of Ni-P-SiC Composite Coating on AZ91D Alloy

薛燕, 王振国
XUE Yan, WANG Zhen-guo

表面摩擦磨损与润滑 Surface Friction Wear and Lubrication

97 几种添加剂在锂基润滑脂中的极压协同性能及表面摩擦行为研究
Extreme Pressure Synergistic Properties and Tribological Behaviors of Several Additives in Lithium Greases

辛永亮, 胡建强, 杨士钊, 郭力, 张健健

XIN Yong-liang, HU Jian-qiang, YANG Shi-zhao, GUO Li, ZHANG Jian-jian

104 火焰喷涂和等离子喷涂 FeCrBSi 涂层及其防滑和耐磨性能研究
Flame Sprayed and Atmospheric Plasma Sprayed FeCrBSi Coatings and Their Skid and Wear Resistance

吴庆丹, 刘黎明, 徐海峰, 肖金坤, 张超

WU Qing-dan, LIU Li-ming, XU Hai-feng, XIAO Jin-kun, ZHANG Chao

110 热处理对 Ni-TiN 纳米复合镀层结构和性能的影响
Effect of Heat Treatment on Structure and Properties of Ni-TiN Nano Composite Coating

贾卫平, 姚井龙, 吴蒙华, 王元刚, 李霖泰, 雍帆

JIA Wei-ping, YAO Jing-long, WU Meng-hua, WANG Yuan-gang, LI Lin-tai, YONG Fan

117 放电等离子烧结铁基非晶涂层的滑动与冲蚀磨损性能

Sliding and Erosive Wear Resistance of Spark Plasma Sintered Fe-based Amorphous Coating

顾鹏, 纪秀林, 鲍亚运, 郑鼎聪

GU Peng, JI Xiu-lin, BAO Ya-yun, ZHENG Ding-cong

122 基于有限元仿真的磨削纹理对 40Cr 材料摩擦学特性影响及润滑油匹配

Influence of Grinding Textures on Tribological Property and Lubricating Oil Matching Based on Finite Element Simulation

杜迎慧, 张凯娟

DU Ying-hui, ZHANG Kai-juan

表面强化及功能化 Surface Strengthening and Functionalization

128 硼掺杂金刚石电极降解活性橙 X-GN 偶氮染料废水的研究

Degradation of Reactive Brilliant Orange X-GN Azo Dye Effluent on Boron-doped Diamond Electrode

张明全, 王一佳, 曾思超, 李伟, 童臻, 魏秋平, 余志明, 马莉

ZHANG Ming-quan, WANG Yi-jia, ZENG Si-chao, LI Wei, TONG Zhen, WEI Qiu-ping, YU Zhi-ming, MA Li

134 表面处理活性炭及其对二氧化碳吸附性能研究

Surface Treated Activated Carbon and Its Adsorption Property to CO₂

李水娥, 周绪忠, 崔同明, 李慧赢

LI Shui-e, ZHOU Xu-zhong, CUI Tong-ming, LI Hui-ying

139 Al₂O₃/Ni 纳米复合电刷镀技术应用于失效凸轮轴再制造的实验研究

Experimental Study on Application of Al₂O₃/Ni Nano Composite Brush Electro-plating Technology to Remanufacturing of Damaged Engine Camshaft

王红云, 陈森昌, 李全德, 吴劲, 陈华竣

WANG Hong-yun, CHEN Sen-chang, LI Quan-de, WU Jin, CHEN Hua-jun

144 建筑节能涂层光学性能影响因素研究

Optical Property Influence Factors of Building Energy Saving Coatings

杨光, 邓安仲

YANG Guang, DENG An-zhong

150 核壳乳液聚合制备阳离子型含氟苯丙乳液的研究

Preparation of Cationic Fluorinated Poly-styrene-acrylic Latex by Core-Shell Emulsion Polymerization

罗源军, 罗源兵, 刘波, 吕太勇, 陈立义

LUO Yuan-jun, LUO Yuan-bing, LIU Bo, LYU Tai-yong, CHEN Li-yi

表面失效及防护 Surface Failure and Protection

156 强流脉冲电子束作用下纯钛的微观组织结构变化及其性能研究

Microstructure Variation and Properties of Pure Titanium Induced by High-current Pulsed Electron Beam

高波, 高超, 何吉东, 朱广林, 董立洋, 徐宁

GAO Bo, GAO Chao, HE Ji-dong, ZHU Guang-lin, DONG Li-yang, XU Ning

161 UPDHES 电泳涂层材料的制备及其防腐性能

Preparation and Corrosion Resistance of UPDHES Electrophoretic Coating

李杨, 孟龙, 朱叶, 魏玮, 罗静, 刘晓亚

LI Yang, MENG Long, ZHU Ye, WEI Wei, LUO Jing, LIU Xiao-ya

168 渤海油田典型井套管损坏原因分析

Analysis of Casing Damage on Typical Wells in Bohai Oilfield

徐刚, 刘鹏, 张启龙, 陈毅, 陈彬

XU Gang, LIU Peng, ZHANG Qi-long, CHEN Yi, CHEN Bin

- 173 三乙醇胺及三乙醇胺/尿素复配物对氧化锆转化膜性能的影响
Effects of Triethanolamine and Composite of Triethanolamine/Carbamide on Zirconia Conversion Film
周祉存, 王婷婷, 吴方, 张培强, 张静, 于锦
ZHOU Zhi-cun, WANG Ting-ting, WU Fang, ZHANG Pei-qiang, ZHANG Jing, YU Jin
- 178 复合缓蚀剂在油田采出水中的缓蚀性能研究
Corrosion Inhibition of Composite Corrosion Inhibitor in Oilfield Produced Water
闫旭涛
YAN Xu-tao
- 183 DNV 相互影响腐蚀管道评价方法适应性分析
Adaptability Analysis of DNV Evaluation Method for Interactional Corroded Pipelines
商同林
SHANG Tong-lin
- 191 高边缘防腐电泳漆的应用
Application of High Edge Anti-corrosive Electrophoretic Paint
白云, 宋勇, 陶正, 李际良, 张庆, 咎鹏
BAI Yun, SONG Yong, TAO Zheng, LI Ji-liang, ZHANG Qing, ZAN Peng
- 195 FeCrBSiWNb 喷涂层的钨极氩弧摆动重熔处理
TIG Weaving Remelting of FeCrBSiWNb Coating by HVAS
蹤雪梅, 李稳, 王井, 员霄, 朱青海
ZONG Xue-mei, LI Wen, WANG Jing, YUAN Xiao, ZHU Qing-hai
- 201 一种新型纳米纸质文物、档案保护技术的应用研究
Application of A Novel Nano Conservation Technology for Paper Cultural Relic and Archives
郑亮, 孙建明, 靳军
ZHENG Liang, SUN Jian-ming, JIN Jun
- 208 超声冲击处理工艺对 Q345 焊接热影响区残余应力的影响
Effect of Ultrasonic Impact Treatment Technology on Residual Stress of Q345 HAZ
马国, 张立平, 刘夕, 孟庆禹, 吴斌, 王勇, 张升霞, 杨超
MA Guo, ZHANG Li-ping, LIU Xi, MENG Qing-yu, WU Bin, WANG Yong, ZHANG Sheng-xia, YANG Chao
- 213 木质音箱用喷涂聚脲弹性体的制备及其应用
Preparation and Application of Spray Polyurea Elastomer for Wooden Voice Box Use
杨春嘉, 吴文文, 崔洪犁, 刁振峰
YANG Chun-jia, WU Wen-wen, CUI Hong-li, DIAO Zhen-feng

表面质量控制及检测 Surface Quality Control and Detection

- 219 微细切削加工表面质量的研究综述
Quality of Micro Machined Surface
张浩, 刘玉德, 石文天, 韩冬
ZHANG Hao, LIU Yu-de, SHI Wen-tian, HAN Dong
- 233 温度对铌酸锂晶片磨削减薄的影响
Effects of Temperature on Grinding and Thinning of Soft-brittle Lithium Niobate Crystals
贡燕, 胡天明, 张丽慧, 王扬渝, 陈珍珍, 孔凡志
GONG Yan, HU Tian-ming, ZHANG Li-hui, WANG Yang-yu, CHEN Zhen-zhen, KONG Fan-zhi
- 240 微细铣削不锈钢 310S 表面完整性试验研究
Experimental Research on Surface Integrity of Micro Milling Stainless Steel 310S
袁美霞, 刘少楠, 高振莉, 窦蕴平, 唐伯雁
YUAN Mei-xia, LIU Shao-nan, GAO Zhen-li, DOU Yun-ping, TANG Bo-yan
- 245 铣削大理石切削参数对 PCD 刀具磨损的影响
Effects of Cutting Parameters for Marble Milling on Wear of PCD Cutters
闫海鹏, 吴玉厚
YAN Hai-peng, WU Yu-hou
- 250 刀具走刀方式对 TC11 薄壁件铣削表面质量影响规律研究
Effect of Tool Path Mode on Milled Surface Quality of TC11 Thin-walled Parts
李锋, 李涌泉, 李文科, 张威, 陈冲
LI Feng, LI Yong-quan, LI Wen-ke, ZHANG Wei, CHEN Chong
- 255 响应面法优化 2A97 铝锂合金化铣工艺的研究
Optimization of 2A97 Al-Li Alloy Chemical Milling Technology in Response Surface Method
孟莉莉, 朱彦海, 曾元松
MENG Li-li, ZHU Yan-hai, ZENG Yuan-song