

## 目次 CONTENTS

### 膜层技术 Coating Technology

#### 1 纳米 $\text{Al}_2\text{O}_3$ 等离子喷涂涂层的制备及性能分析

Preparation and Properties Analysis of Plasma Sprayed Nano Alumina Coatings

杜三明, 靳俊杰, 肖宏滨, 张永振

DU San-ming, JIN Jun-jie, XIAO Hong-bin, ZHANG Yong-zhen

#### 7 非能动安全壳用无机锌涂层的特性研究

Study on the Characteristic of Inorganic Zinc Coating for Passive Containment

樊焕然, 范普成, 赵维, 赵瑞昌

FAN Huan-ran, FAN Pu-cheng, ZHAO Wei, ZHAO Rui-chang

#### 11 WC/Co-Cr 复合涂层激光熔覆工艺优化与表征

Process Optimization for Laser Cladding Operation of WC/Co-Cr and Its Characterization

张晓东, 揭晓华, 罗松, 郑琼彬

ZHANG Xiao-dong, JIE Xiao-hua, LUO Song, ZHENG Qiong-bin

#### 17 锡青铜化学镀 Ni-P 合金工艺及镀层性能

Process and Performances of Electroless Ni-P Alloy Coating on Tin Bronze

王敏, 刘锦云, 李文鹏, 陈立甲

WANG Min, LIU Jin-yun, LI Wen-peng, CHEN Li-jia

#### 22 SP700 钛合金的热处理/阳极氧化工艺研究

Heat Treatment and Anodic Oxidation Process of SP700 Titanium Alloy

王梅改, 宋延沛

WANG Hui-gai, SONG Yan-pei

### 表面摩擦与润滑 Surface Friction and Lubrication

#### 27 等离子喷涂 NiCr/Cr<sub>3</sub>C<sub>2</sub>-hBN 复合涂层的制备及摩擦性能研究

Preparation and Tribological Properties of Atmospheric Plasma-sprayed NiCr/Cr<sub>3</sub>C<sub>2</sub>-hBN Wear-resistant Coatings

曹玉霞, 黄传兵, 杜令忠, 张伟刚, 兰叶

CAO Yu-xia, HUANG Chuan-bing, DU Ling-zhong, ZHANG Wei-gang, LAN Ye

#### 32 高速电弧喷涂 Mo 涂层性能初探

Study on the Properties of Mo Coating Prepared by High Velocity Arc Spraying

杨忠须, 刘贵民, 徐军, 郭永明

YANG Zhong-xu, LIU Gui-min, XU Jun, GUO Yong-ming

38 钽表面微弧氧化陶瓷层的制备及耐磨性能研究

Preparation and Friction Properties of Ceramic Coating on Tantalum by Micro-arc Oxidation

杨海彧, 李争显, 李宏战, 王毅飞, 赵文

YANG Hai-yu, LI Zheng-xian, LI Hong-zhan, WANG Yi-fei, ZHAO Wen

## 表面强化及功能化 Surface Strengthening and Functionalization

44 PtPb/C 催化剂的制备及其对甲酸电氧化的催化性能

Preparation of PtPb/C Catalyst and Its Electro-oxidation Catalytic Performance for Formic Acid

刘双任, 陈金伟, 朱雪婧, 张洁, 江义武, 王瑞林

LIU Shuang-ren, CHEN Jin-wei, ZHU Xue-jing, ZHANG Jie, JIANG Yi-wu, WANG Rui-lin

49 超声冲击处理对 7A52 铝合金焊接接头表层组织及性能的影响

Influence of Ultrasonic Impact Treatment on Microstructure and Properties of Surface Layer of 7A52 Aluminum Alloy Welded Joint

陈芙蓉, 赵永胜, 邱小明, 解瑞军

CHEN Fu-rong, ZHAO Yong-sheng, QIU Xiao-ming, XIE Rui-jun

54 机制砂石粉表面修饰及其性能研究

Preparation and Characterization of Artificial Sand Modified by Polymers

李小龙, 季碧碧, 曹远, 李二锐, 赵怀华, 李建伟, 曹晓华, 孙玉, 邢国兵, 王文平

LI Xiao-long, JI Bi-bi, CAO Yuan, LI Er-rui, ZHAO Huai-hua, LI Jian-wei,

CAO Xiao-hua, SUN Yu, XING Guo-bing, WANG Wen-ping

59 Ni-Cr-Al 涂层搅拌摩擦加工的作用机制

Friction Stir Processing Mechanism of Ni-Cr-Al Coating Layer

朱理奎, 周小平, 方镛泽

ZHU Li-kui, ZHOU Xiao-ping, FANG Ying-ze

65 金刚石化学镀镍的研究

Study of Electroless Plating Nickel on the Diamond

黄世玲, 张迎九, 杨德林

HUANG Shi-ling, ZHANG Ying-jiu, YANG De-lin

## 表面失效及防护 Surface Failure and Protection

70 循环冷却水中 2507 双相不锈钢微生物腐蚀研究

Microbiological Corrosion Characteristics of 2507 Duplex Stainless Steel in Circulating Cooling Water

孙福洋, 赵国仙, 杨东平, 孙蕊

SUN Fu-yang, ZHAO Guo-xian, YANG Dong-ping, SUN Rui

75 金属表面溶胶-凝胶防腐蚀涂层的研究进展

Progress of Sol-Gel Anti-corrosion Coatings on Metals

聂志云, 刘继华, 张有为, 周涛, 答建成, 杨涛

NIE Zhi-yun, LIU Ji-hua, ZHANG You-wei, ZHOU Tao, DA Jian-cheng, YANG Tao

82 增甘膦及复配液缓蚀性能研究

Corrosion Inhibition Performance of Glyphosine and Its Mixture

陈小非, 毛礼娜, 郭康, 殷超凡, 陈启明

CHEN Xiao-fei, MAO Li-na, GUO Kang, YIN Chao-fan, CHEN Qi-ming

88 注水介质中喹啉缓蚀剂对管线钢的缓蚀作用研究

Research on Corrosion Inhibition Effect of Quinoline Inhibitor in Injection Water Media on Pipeline Steel

张颖, 董国强, 胡凌艳

ZHANG Ying, DONG Guo-qiang, HU Ling-yan

93 金属镀金外壳抗盐雾腐蚀工艺的改进

Improvement of Anti-spray-salt Corrosion Mechanism of Metal Shells

陈月华, 江德凤, 刘永永, 袁礼华

CHEN Yue-hua, JIANG De-feng, LIU Yong-yong, YUAN Li-hua

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

98 表面显微硬度国内外检测标准探析

Introduction of Domestic and Foreign Standards on Microindentation Hardness Testing

陈亚军, 周姝, 魏鹏宇

CHEN YA-jun, ZHOU Shu, WEI Peng-yu

104 304 不锈钢电火花线切割加工表面性能研究

Research on 304 Stainless Steel Surface Properties by Wire Electrical Discharge Machining

李晓舟, 孙宇博, 许金凯, 黄飞, 姜倩

LI Xiao-zhou, SUN Yu-bo, XU Jin-kai, HUANG Fei, JIANG Qian

109 基于赫兹理论的弹性磨具磨抛 M300 钢表面参数模型研究

Study on the Parameter Model of Grinding and Polishing the M300 Steel Surface by Elastic Abrasive Tools Based on Hertz Theory

吴晓君, 刘睿平, 于兴展, 武倩

WU Xiao-jun, LIU Rui-ping, YU Xing-zhan, WU Qian

115 纳米压痕和划痕法测定 TiO<sub>2</sub> 纳米薄膜的力学性能

Nanoindentation and Nanoscratch Measurements to Determine the Mechanical Properties of TiO<sub>2</sub> Nano Films

龙东平, 薛建荣, 晏智鑫

LONG Dong-ping, XUE Jian-rong, YAN Zhi-xin

120 机加工表面残余应力及其疲劳寿命评价的研究进展

Research Progress on Evaluation of Surface Residual Stress and Fatigue Life of Machined Products

何少杰, 杨文玉, 郭步鹏, 周瑞虎

HE Shao-jie, YANG Wen-yu, GUO Bu-peng, ZHOU Rui-hu

127 喷砂表面的多尺度分析与表征

Analysis and Characterization of Sandblasted Surfaces Using Multi-scale Analysis

王春水, 何声馨, 张二亮, 李大磊

WANG Chun-shui, HE Sheng-xin, ZHANG Er-liang, LI Da-lei

## 信息与资讯 Information and Communication

133 《表面技术》投稿须知