



新技术新工艺

2012.10

国内外公开发行

XIN JISHU XIN GONGYI

NEW TECHNOLOGY & NEW PROCESS

月刊



华云^{PT}
豪克能
HUAWIN HAWKING

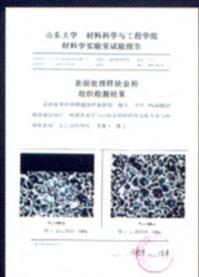
开启豪克能金属加工时代

46项国家发明专利加持保护



抗疲劳制造 豪克能^{PT}解决方案

- + 直接加工出镜面零件，粗糙度Ra值≤0.05； + 零件表面显微硬度提高20%以上；
- + 零件耐磨性提高50%以上； + 零件耐腐蚀性提高40%以上； + 比传统工艺加工效率提高3倍以上。
- + 零件表面晶粒细化； + 预置理想可控的高值压应力； + 零件疲劳寿命提高6倍以上；



■ 山东大学材料科学与工程学院材料科学实验室检测报告显示：
经豪克能技术表面加工处理后，试件表面晶粒明显细化。



■ 山东大学材料科学与工程学院材料科学实验室检测报告显示：
经豪克能技术表面加工处理后，试件显微硬度提高37%。



■ 浙江大学材料力学实验室检测报告显示：
经豪克能技术表面加工处理后，试件疲劳寿命提高6倍以上。

豪克能^{PT} 超极+机床完美面世！



普通机床时代

(普通加工)

数控机床时代

(数控加工)

豪克能^{PT}超极+机床时代

(能量加工)

+ 更多豪克能^{PT}技术详情请登录：www.hyvsr.com

ISSN 1003-5311



10>



山东华云机电科技有限公司

SHANDONG HUAWIN ELECTRICAL AND MECHANICAL TECHNOLOGY CO., LTD

服务热线：400-077-3288

数字技术与机械工程

- 1 基于特征的包含大运动物体的图像拼接 刘星, 郑津津, 王伟
- 6 管壳式换热器在线清洗的机理分析与数值模拟 尚彦芝, 蔡晓君, 刘湘晨, 张建军, 肖涤, 欧阳子劲
- 10 基于MATLAB和ABAQUS的螺旋钻杆参数优化与数值模拟 张毅杰, 孔令琼, 施杰, 邹欢
- 13 基于智能手机的连杆机构运动实现方法研究 叶琳, 楚电明, 邱龙辉
- 16 基于企业工艺BOM和CAPP平台的产品售后维修信息化系统 王美, 张学军
- 23 大型半圆环盒形结构加工方法研究 张月红, 刘民东, 常军, 刘重金, 吕学刚
- 26 闭式叶轮的虚拟制造技术研究 段昌德, 吴伟, 艾贵洪
- 29 UG在轮胎模具加工机床设计中的应用 张红, 王郡成
- 31 压气机叶轮五轴联动数控加工技术探析 王秋鹏, 刘宏利, 顾天胜
- 34 数控机床故障诊断实训考核系统的开发 李红, 张秀红
- 37 拖拉机制造行业工位器具的设计应用 罗丰, 杨小勇, 潘岩岩
- 39 复杂薄壁零件的硅胶模制作技术 曾峰, 阎汉生, 王平

设计计算与试验研究

- 42 基于产品功能的房体表层抹灰机结构设计 陈万强, 周小勇
- 44 某车载起重机吊臂刚柔耦合系统动态性能分析 王刚, 胡斌, 黄亚宇
- 47 激光选区快速成型件后处理工艺的试验研究 王雅先
- 49 液气悬挂加工、装配、试验检验技术 李幸春, 司丽丽, 陆勇利, 王林彬, 刘颖, 孙力
- 53 新型铁路枕面清扫装置的设计 翟中炎
- 55 等分圆周8工位钻孔夹具设计 张彩云

加工工艺与材料研究

- 57 2A12厚板铝合金淬火过程有限元建模研究 冯潇，张磊，李兆光，刘长勇
- 61 先进焊接技术在国内航空制造领域内的应用和发展概况 张磊先，杜静，李文学
- 64 热处理工艺对CuAl₂初熔与溶解行为的影响 岳红印，孙瑜，侯贵华
- 67 制动梁热锻工艺技术研究 赵捷梅，张瑛，白凌云
- 69 大型长轴深井泵扬水管加工工艺研究 杨天郁
- 72 防护罩冲压工艺及模具设计 刘彦丽，高金良，张卫华，王亮，陈泳
- 76 先进复合材料在航空航天领域的应用 朱晋生，王卓，欧峰
- 80 杭州地铁一号线B级焊缝焊接技术研究 郭安庆，朱志民，陟成刚，李明，熊霓，朱昌平
- 82 薄壁类内花键齿轮零件的加工工艺优化 王国强，袁彩梅，李校伟，孙广成
- 85 冲孔-拔伸法生产大口径厚壁无缝钢管 左阳春
- 87 金属罐体自动焊机径向自动跟踪装置设计 孔晓林，林洪，李荣雪，陈金华
- 90 过共晶高硅铝合金固溶工艺因素的优化 雷岩杰，赵高瞻，马普照

电子信息与自动控制

- 93 便携式高压软体舱增减压系统的开发 魏宏波
- 96 电火花沉积工艺研究 郭晓霞

质量控制与故障分析

- 99 方舱密封性能分析 陈荣媛
- 101 齿轮箱故障诊断的粒子群优化模糊聚类技术 黄周宽，成晓宁，迟全洲
- 105 基于逆向工程的磨损零件清洗 何森，孙永芳

军转民技术推广专栏

- 107 先进制造领域推广技术（续）

Contents

Digital Technique and Mechanical Engineering

Image Mosaics of Big Moving Object based on Characteristics.....	LIU Xing, ZHENG Jinjin, WANG Wei (1)
Analysis and Numerical Simulation of on line Cleaning for Heat Exchanger with Baffle Plate	SHANG Yanzhi, CAI Xiaojun, LIU Xiangchen, ZHANG Jianjun, XIAO Di, OUYANG Zhijin (6)
Optimization and Numerical Simulation on Parameter of Spiral Drill Pipe based on MATLAB and ABAQUS	ZHANG Yijie, KONG Lingqiong, SHI Jie, ZOU Huan (10)
Research on Realizing Method of Four Bar Mechanism's Motion based on Intelligent Mobile Phone	YE Lin, CHU Dianming, QIU Longhui (13)
Information System about Product Maintenance or Repair after Sale based on Enterprise's Process BOM and CAPP	WANG Mei, ZHANG Xuejun (16)
Research on Processing Techniques of Large Scale Semi circular Box shaped Structure	ZHANG Yuehong, LIU Mindong, CHANG Jun, LIU Chongjin, LV Xuegang (23)
Research on Virtual Manufacturing Technology of Integrally shrouded Impeller	DUAN Changde, WU Wei, AI Guihong (26)
Application of UG in the Design of Tire Mold Processing Machine Tool	ZHANG Hong, WANG Juncheng (29)
Analysis of NC Machining Technology of Compressor Impeller Five axle Linkage	WANG Qiupeng, LIU Hongli, GU Tiansheng (31)
Development of the Comprehensive Practical Training and Testing System for CNC Failure Diagnosis.....	LI Hong, ZHANG Xiuhong (34)
Design and Application of the Tractor Manufacturing Industry Position Apparatus.....	LUO Feng, YANG Xiaoyong, PAN Yanyan (37)
Silicone Mold Production Technology for Complex Thin walled Parts	ZENG Feng, YAN Hansheng, WANG Ping (39)

Design Calculation and Experimental Investigation

Building Surface Plastering Machine Construction Design Based on Product Function.....	CHEN Wan qiang, Zhou Xiao yong (42)
Dynamic Property Analysis for the Rigid flexible System of the Arm on One On vehicle Crane	WANG Gang, HU Bin, HUANG Yazu (44)
Research on Selective Laser Rapid Prototyping Parts after Treatment Process	WANG Yaxian (47)
Technology of Liquid gas Suspension Processing Assembly Test and Inspection	LI Xingchun, SI Lili, LU Yongli, WANG Linbin, LIU Ying, Sun Li (49)
Design of a New Type Railway Sleeper Surface Cleaning Device	ZHAI Zhongyan (53)
Design of Drilling Fixture of Circle of Eight Uniform Division.....	ZHANG Caiyun (55)

Processing Technics and Investigation of Materials

Finite Element Modeling of Quenching Process of 2A12 Aluminum Block	FENG Xiao, ZHANG Lei, LI Zhaoguang, LIU Changyong (57)
Application and Development Situation of Advanced Welding Technology in Domestic Aviation Manufacturing Field	ZHANG Leixian, DU Jing, LI Wenxue (61)
Effects of Heat Treatment Process on Melting and Dissolution of CuAl ₂	YUE Hongyin, SUN Yu, HOU Guihua (64)
Research on Technology of Brake Beam Forging	ZHAO Jiemei, ZHANG Ying, BAI Lingyun (67)
Research on Processing Technology of Water Pipes of Large scale Long Shaft Deep Well Submerged Pump.....	YANG Tianyu (69)
Punching Process and Die Design of Shield.....	LIU Yanli, GAO Jinliang, ZHANG Weihua, WANG Liang, CHEN Yong (72)
Applications of Advanced Composite Materials in Aerospace.....	ZHU Jinsheng, WANG Zhuo, OU Feng (76)
Research on Hangzhou Metro Line 1 Class B Weld Technology	GUO Anqing, ZHU Zhiming, ZHI Chenggang, LI Ming, XIONG Ni, ZHU Changping (80)
Optimization of machining Process of Thin Wall Spline Gear Parts	WANG Guoqiang, YUAN Caimei, LI Xiaowei, SUN Guangcheng (82)
Punching and Tension to Manufacturing Big Diameter Heavy Section Steel Tubes.....	ZUO Yangchun (85)
Design of Auto tracking Device of Metal Tank Automatic Welding Machine Radial	KONG Xiaolin, LIN Hong, LI Rongxue, CHEN Jinhua (87)
Optimization of Solution Treatment Process of Hypereutectic High Si Aluminum Alloy	LEI Yanjie, ZHAO Gaozhan, MA Puzhao (90)

Electronics Information and Automatic Control

Development of Pressure Controlling System of Portable High pressure Soft Capsule	WEI Hongbo (93)
Research on Process of Electro park Surface Deposition	GUO Xiaoxia (96)

Quality Control and Malfunction Analysis

Analysis of Seal Ability of the Shelter.....	CHEN Rongyuan (99)
Fault Diagnosis Technology of Gear box based on Fuzzy Clustering Optimized by Particle Swarm Algorithm	HUANG Zhoukuan, CHENG Xiaoning, CHI Quanzhou (101)
Wear Parts Cleaning based on Reverse Engineering	HE Miao, SUN Yongfang (105)