



中文核心期刊·科技核心期刊
主办单位：中国机械工程学会、北京机床研究所有限公司

ISSN 1005-2402
CODEN ZYJIE8

制造技术与机床[®] 1

邹家华 2023

ZHIZAO JISHU YU JICHUANG
MANUFACTURING TECHNOLOGY & MACHINE TOOL



持续精进 未来已来

FANUC Series Oi-MODEL F Plus

更易用 更强大

全新高效加工技术 / 全新表面精细处理技术 / 全新开放性平台 / 全新 FANUC iHMI



ISSN 1005-2402



9 771005 240234

万方数据

北京发那科机电有限公司
北京市海淀区上地信息产业基地信息路9号

销售 电话 010-62984739
010-62984741 (传真)

服务 热线 400-6100-777
010-62984745 (传真)

培训 电话 010-62984726-1868
021-69228386 (深圳&上海)

◆广告



关注制造无限

目次

CONTENTS

《制造技术与机床》2023年第01期(总第727期) No.01.2023 Total Issue No.727

1 | 国内外动态 / Information at Home and Abroad

专题专访 / Special Topics & Interview

- 6 | 《制造技术与机床》编辑部召开2022年编委会|本刊记者 / 谭弘颖
- 7 | “智造先进 领航未来”高峰论坛成功举办|本刊记者 / 谭弘颖

故障诊断 / Fault Diagnosis

- 9 | 基于深度特征提取和对抗域适应网络的滚动轴承故障诊断/陈凯 张礼华 赵恒 陈景铭
Rolling bearing fault diagnosis based on depth feature extraction and domain-adversarial training of neural networks/CHEN Kai, ZHANG Lihua, ZHAO Heng, CHEN Jingming
- 16 | 基于LE和DBN算法的轴承故障信号特征提取及诊断/余震 何留杰 王峰
Feature extraction and diagnosis of bearing fault signals based on LE and DBN algorithms/YU Zhen, HE Liujie, WANG Feng
- 21 | 基于经验模态分析的机床主轴轴承外圈非接触式故障检测方法/刘斌 刘佳 张海鹏
Fault detection method of machine tool bearing based on empirical modal analysis/LIU Bin, LIU Jia, ZHANG Haipeng

特种加工 / Non-traditional Machining

- 29 | 面向超磁致伸缩换能器的超声电源设计与性能分析/韦泽川 李均 冯峰 查慧婷 许超 马原 赵学奇 冯平法
Design and performance analysis of ultrasonic generator for giant magnetostrictive transducer/WEI Zechuan, LI Jun, FENG Feng, ZHA Huiting, XU Chao, MA Yuan, ZHAO Xueqi, FENG Pingfa
- 36 | 超声振动辅助切削三维SiCp/Al复合材料温度仿真研究/林洁琼 闫东 卢明明 李家成 高鑫
Temperature simulation of ultrasonic assisted cutting of three-dimensional SiCp/Al composites/LIN Jieqiong, YAN Dong, LU Mingming, LI Jiacheng, GAO Xin
- 44 | TB9钛合金超声辅助切削试验研究/刘乐 张亚龙 关悦 金宏 刘前峰 刘海
Experimental study on ultrasonic assisted cutting of TB9 titanium alloy/LIU Le, ZHANG Yalong, GUAN Yue, JIN Hong, LIU Qianfeng, LIU Hai

切削加工 / Cutting Processing

- 49 | CFRP铣削加工刀具优化/贺皓 袁信满 陈保林 胡智钦
Optimization of CFRP milling tool/HE Ai, YUAN Xinman, CHEN Baolin, HU Zhiqin
- 55 | 椭圆振动辅助切削振动参数对加工SiCp/Al切削力的影响研究/卢明明 周瑞琦 杜永盛 高强 杨亚坤
Study on the influence of elliptical vibration assisted cutting vibration parameters on machining SiCp/Al cutting force/LU Mingming, ZHOU Ruiqi, DU Yongsheng, GAO Qiang, YANG Yakun

- 61** | 无氧铜深孔钻削仿真与试验研究/韩晓兰 侯杰 郑桓 张旭康
Simulation and experimental study of deep hole drilling of oxygen-free copper/HAN Xiaolan,
HOU Jie, ZHENG Huan, ZHANG Xukang

数控技术 / CNC Technology

- 67** | 基于 EtherCAT 通信的双 CPU 总线型柔性折弯加工中心专用数控系统研发/
吴凤和 王帅淇 孙迎兵 张会龙 王宇 连辉 柴海宁
Research on dedicated CNC system for flexible bending machining center based on EtherCAT
communication and dual-CPU bus type/WU Fenghe, WANG Shuaiqi, SUN Yingbing,
ZHANG Huilong, WANG Yu, LIAN Hui, CHAI Haining
- 74** | GNC62 数控系统专用加工功能的开发和集成/耿文剑
Develop and integrate special machining functions for GNC62 CNC systems/GENG Wenjian
- 78** | 华中数控卧式四轴机床坐标系自动补偿研究/杨凯 胡兴平 冯常喜 张宁
吴飞 赵志虎
Research on automatic coordinate system compensation of Huazhong NC system horizontal
four-axis machine tool/YANG Kai, HU Xingping, FENG Changxi, ZHANG Ning, WU Fei,
ZHAO Zhihu

设计与研究 / Design and Research

- 83** | 基于随机森林贝叶斯优化的机械臂运动参数优化研究/刘晨晖 张为民 薛峰
Research on kinematic parameters optimization of robot arm based on random forest Bayesian
optimization/LIU Chenhui, ZHANG Weimin, XUE Feng
- 91** | 台虎钳的集成夹紧系统研究/杨茜 尹甜甜 盖蕾
Research on integrated clamping system of bench vice/YANG Xi, YIN Tiantian, GAI Lei
- 97** | PMSM 的新型趋近律滑模调速控制器设计/谭舒丹 马家庆
A novel reaching law sliding mode speed controller design for PMSM/TAN Shudan, MA Jiaqing
- 102** | 基于坠落机制的混沌麻雀算法 AGV 路径规划/李一铭 王跟成
Based on falling mechanism chaotic sparrow algorithm of AGV path planning/LI Yiming,
WANG Gencheng
- 109** | 不同指令轨迹条件下滚珠丝杠进给系统运动精度特性研究/雷美荣 苏芳
王舒玮 王晨升
Study on tracking precision characteristics of ball screw feed system under different set-
trajectory conditions/LEI Meirong, SU Fang, WANG Shuwei, WANG Chensheng

工艺与制造 / Technology and Manufacture

- 114** | 融合帝国竞争与遗传算法的零件加工工艺排序方法/李书涵 周学良 冷杰武
A part machining process ranking method incorporating imperial competition and genetic
algorithm/LI Shuhan, ZHOU Xueliang, LENG Jiewu
- 121** | 转向螺母多向联动加载成形工艺研究/刘丹 刘光辉 王涛 刘华
Multi-direction linkage loading forming process for steering nut/LIU Dan, LIU Guanghui,
WANG Tao, LIU Hua

检测与质量 / Test and Quality

- 126** | 基于机器视觉的直齿轮齿距偏差检测/逯海滨 张丹 李长安 隋文涛
龔亚萍 张宇凡
Spur gear pitch deviation detection based on machine vision/LU Haibin, ZHANG Dan,
LI Changan, SUI Wentao, DOU Yaping, ZHANG Yufan

132 | 基于正多边形截面薄壁零件旋压成形质量研究/王佰超 张欣龙 高建军
张澧桐 张洪明 王慧冬
Research on spinning quality of thin-walled parts based on regular polygon section/
WANG Baichao, ZHANG Xinlong, GAO Jianjun, ZHANG Litong, ZHANG Hongming,
WANG Huidong

139 | GPS 轮廓法粗糙度数据处理研究与实现/潘丽丽
Research and implementation of roughness data processing based on GPS profile method/
PAN Lili

管理信息化 / Management and Informatization

145 | 一种基于改进 NSGA-II 的多目标绿色柔性作业车间调度方法/郑锦灿 邵立珍
雷雪梅
A multi-objective green flexible job shop scheduling method based on improved NSGA-II
algorithm/ZHENG Jincan, SHAO Lizhen, LEI Xuemei

153 | 基于机器学习的图号申请系统设计与实现/罗瑞旭 张辉 张胜文 李坤
方喜峰
Design and implementation of drawing number apply system based on machine learning/
LUO Ruixu, ZHANG Hui, ZHANG Shengwen, LI Kun, FANG Xifeng

160 | 隐性扰动下柔性作业车间重调度决策/宋李俊 徐志鹏 李斐
Flexible job-shop rescheduling decision with hidden disturbance/SONG Lijun, XU Zhipeng, LI Fei

投稿须知 | 168