

目次 CONTENTS

《制造技术与机床》2023 年第 12 期（总第 738 期） No.12.2023 Total Issue No.738

独家策划 / Exclusive Planning

- 1 | 中国机床 自强之路——之四：标准中心| 本刊记者 / 谭弘颖
- 5 | 国内外动态 / Information at Home and Abroad

故障诊断 / Fault Diagnosis

- 9 | 基于 SGMD-CMAE 和 WOA-ELM 的滚动轴承故障诊断方法/吴仕虎
李颖 杨鑫杰 巴鹏
Fault diagnosis method based on SGMD-CMAE and WOA-ELM for rolling bearing/
WU Shihu, LI Ying, YANG Xinjie, BA Peng
- 19 | 基于 VMD 和 AVOA-SCN 的齿轮箱故障诊断/范亚飞 郝如江 杨青松
邓飞跃
Gearbox fault diagnosis based on VMD and AVOA-SCN/FAN Yafei, HAO Rujiang,
YANG Qingsong, DENG Feiyue

重大应用需求 / Major Application Requirement

- 26 | 永磁同步电机的改进粒子群优化自抗扰控制/樊立萍 黄鑫
Active disturbance rejection control of permanent magnet synchronous motor based on
improved particle swarm optimization/FAN Liping, HUANG Xin
- 32 | 基于直线电机驱动的插件机振动特性研究/胡意波 高自成 李立君
邹洋 罗义 赵凯杰
Research on vibration characteristics of plug-in machine driven by linear motor/HU Yibo,
GAO Zicheng, LI Lijun, ZOU Yang, LUO Yi, ZHAO Kaijie

切削加工 / Cutting Processing

- 40 | 螺旋槽磨削砂轮磨损轮廓模型与位姿补偿算法/阳智麾 李勇 刘浩 江磊
A grinding wheel wear calculation and trajectory adjustment algorithm for helical groove
grinding process/YANG Zhihui, LI Yong, LIU Hao, JIANG Lei
- 48 | A100 钢等效直角切削仿真及 J-C 本构参数敏感度分析/贾宗强 白海清
贾宗蒲
Simulation of equivalent right-angle cutting of A100 steel and sensitivity analysis of J-C
constitutive parameters/JIA Zongqiang, BAI Haiqing, JIA Zongpu
- 57 | 基于半解析法的面铣削力系数快速标定与验证/张媛 陈荣荣
Rapid calibration and verification of face milling force coefficient based on semi-analytical
method/ZHANG Yuan, CHEN Rongrong

综述 / Special Reports

- 65 | 激光熔覆涂层硬度强化研究进展/张国昌 吕杰 宋宝强 门秀花 付秀丽
Research progress on hardness strengthening of laser cladding coating/ZHANG Guochang,
LV Jie, SONG Baoqiang, MEN Xiuhua, FU Xiuli

设计与研究 / Design and Research

- 73** | 水导激光电场分布理论分析及试验研究/程柏 毛晓博 史建猛 丁烨
杨立军 崔健磊
Theoretical and experimental research on electric field distribution of laser water jet/
CHENG Bai, MAO Xiaobo, SHI Jianmeng, DING Ye, YANG Lijun, CUI Jianlei
- 79** | 磨床电主轴动静压轴承静动特性的理论研究/王苗 门静 韩少燕 贾谦
李晓
Theoretical study on the static and dynamic characteristics of hydrostatic and dynamic
bearings for grinding machine electric spindle/WANG Miao, MEN Jing, HAN Shaoyan,
JIA Qian, LI Xiao
- 85** | 速度PI控制及低通滤波器的系统设计/章国光 陈超凡 郑晓斌 刘文龙
System design on speed PI control and lowpass filter/ZHANG Guoguang, CHEN Chaofan,
ZHENG Xiaobin, LIU Wenlong
- 92** | 5083 铝合金变曲率零件的渐进成形壁厚均匀性研究/范素香 梁惠俊
郝用兴 李宇航
Study on incremental forming wall thickness uniformity of 5083 aluminum alloy parts with
variable angle surface/FAN Suxiang, LIANG Huijun, HAO Yongxing, LI Yuhang
- 98** | 曲轴主轴颈车床中心架体设计与托料装置拓扑优化/霍洪旭
Steady rests design in crank axle of spindle neck lathe and material rack topology
optimization/HUO Hongxu
- 104** | 一种小直径刀具辅助水平夹持装置/肖玉星 吴光明 王俊锋 常牧
A kind of auxiliary vertical clamping mechanism for small diameter rod/XIAO Yuxing,
WU Guangming, WANG Junfeng, CHANG Mu

工艺与制造 / Technology and Manufacture

- 107** | 蜗杆砂轮磨削齿向修形齿面扭曲补偿研究/田晓青 武众磊 周蕾 游通飞
韩江 夏链
Research on twist compensation of tooth surface for worm gear grinding with toothorientation
reshaping/TIAN Xiaoqing, WU Zhonglei, ZHOU Lei, YOU Tongfei, HAN Jiang, XIA Lian
- 117** | 基于混合优化算法的船用柴油机脉动装配线平衡优化技术研究/陶帅
张胜文 陈银娟 王沾 章振
Research on balance optimization technology of marine diesel engine pulsation assembly
line based on hybrid optimization algorithm/TAO Shuai, ZHANG Shengwen, CHEN Yinjuan,
WANG Zhan, ZHANG Zhen
- 123** | 双圆弧谐波传动齿廓修形及啮合特性分析/杜雅宁 王士军 齐娜 王程
郑苏芮
Analysis of tooth profile modification and meshing characteristics of doublearc harmonic
drives/DU Yaning, WANG Shijun, QI Na, WANG Cheng, ZHENG Surui
- 129** | GH4141 高温合金十二角螺栓顶镦工艺研究/关悦 贺连栋 张淼 刘海
王书祥 方翠平 张亚龙
Research on the upsetting process of GH4141 high temperature alloy twelve point bolt/
GUAN Yue, HE Liandong, ZHANG Miao, LIU Hai, WANG Shuxiang, FANG Cuiping,
ZHANG Yalong
- 135** | 浅谈中托架类零件设计对其可加工性的影响/鄢文
The center bracket design for the influence of manufacturing/YAN Wen

- 140** | 基于宏程序的进瓶螺杆加工工艺优化研究/罗军 禹恩帅 周兰菊
Research on processing optimization of bottle transporter screw based on macro program/
LUO Jun, YU Enshuai, ZHOU Lanju

检测与质量 / Test and Quality

- 146** | 车削机床不同支撑结构进给轴热误差测试与分析/化春雷 吴玉亮 肖真诗 陈传海
Measurement and analysis of thermal errors in the feed axis of turning machine tool with
different support structures/HUA Chunlei, WU Yuliang, XIAO Zhenshi, CHEN Chuanhai
- 150** | 基于 ACFM 的 921A 钢材裂纹检测系统设计及试验研究/高辉 杨洁 张楷 李慧聪
Design and experimental study of 921A steel crack detection system based on ACFM/
GAO Hui, YANG Jie, ZHANG Kai, LI Huicong
- 158** | 一种便携高精度超声应力设备及焊缝残余应力研究/董飞宇 周冰 赵文通 王占勇
A portable high precision ultrasonic stress equipment and research on residual stress in welds/
DONG Feiyu, ZHOU Bing, ZHAO Wentong, WANG Zhanyong

管理信息化 / Management and Informatization

- 165** | 基于深度强化学习的柔性作业车间调度方法/崔雪艳 万烂军 赵昊鑫 李长云
A flexible job shop scheduling method based on deep reinforcement learning/CUI Xueyan,
WAN Lanjun, ZHAO Haoxin, LI Changyun
- 171** | 求解多目标柔性作业车间调度问题的混合自适应差分进化算法/陈永灿 刘宇 周艳平
Hybrid adaptive differential evolution for multi-objective flexible job shop scheduling problem/
CHEN Yongcan, LIU Yu, ZHOU Yanping
- 178** | 合作型协同进化遗传算法求解分布式柔性作业车间调度问题/董博文 王有远
Cooperative co-evolutionary genetic algorithm for distributed flexible job shopscheduling
problem/DONG Bowen, WANG Youyuan