

目次

CONTENTS

《制造技术与机床》·2011年第3期(总第584期) · No.3.2011, Total Issue No.584

国内外动态 Information at Home and Abroad 1

专题专访 Special Topics & Interview

机床工具行业进出口面临的新形势和对策建议	郑国伟	9
New situation of import & export of machine tool industry and countermeasures	ZHENG Guowei	
盛会在即，翘首以待	本刊记者 梁玉	11
——CIMT2011展会新闻发布会在京举行	Reporter LIANG Yu	
Looking forward to the approaching grand meeting of machine tool industry		
——Press conference of CIMT2011 is held in Beijing		
CIMT2011国产机床五大看点		13
Five attractive points of domestic machine tool at CIMT2011		
CIMT2011展品预览(上)	本刊编辑部	15
Exhibits preview of CIMT 2011 (Part I)	Editorial Dept. of MT&MT	
机床界巨头齐聚CIMT2011，共话后危机时代科技创新		19
——CIMT2011“以科技创新迎接后危机时代”国际高层论坛演讲嘉宾基本确定		
Magnates of machine tool industry gather at CIMT2011, discussing scientific and technological innovation in post-crisis era		
——Speakers of “Using Scientific and Technological Innovation to Meet Post-crisis Era” international high-level forum have been basically determined		
转战中国，创造新非凡	本刊记者 谭弘颖	20
——访米超力(Milltronics)机床公司市场开发部副总裁Randy Johnson		
Make new differences in China	Reporter TAN Hongying	
——Interview with Mr. Randy Johnson, the vice president market development of Asia, Milltronics CNC machine		

本期主题：精密与微细加工技术 Precision and Micro-machining Technology

凸圆弧前刀面铣刀头超精铣削时主要参数对粗糙度及残留面积的影响	陈定一 邬弘毅	21
Main parameter's influence on surface roughness and residue area for ultra-precision milling by diamond milling head	CHEN Dingyi, WU Hongyi	
线电极磨削系统电极丝恒张力模糊控制研究	吉方 张连新 吴祉群 刘广民 张勇斌	26
Wire constant tension fuzzy control for WEDG system	JI Fang, ZHANG Lianxin, WU Zhiqun, LIU Guangmin, ZHANG Yongbin	
微细铣削铝合金表面粗糙度的实验研究	邢栋梁 张建华 沈学会 赵云峰	30
Experimental study on surface roughness of aluminum alloy in micro-milling process	XING Dongliang, ZHANG Jianhua, et al.	
正弦曲面磁流变抛光的收敛比与斑参数的关系研究	罗丽丽 何建国 王亚军 张云飞 吉方 黄文	33
Study on the law between convergence ratio and spot parameters in magnetorheological finishing with sinusoidal structures	LUO Lili, HE Jianguo, WANG Yajun, ZHANG Yunfei, JI Fang, HUANG Wen	
基于声发射技术的微切削加工表面形貌监测	闫家超 金成哲	38
Monitoring machined surface topography by micro cutting based on acoustic emission technology	YAN Jiachao, JIN Chengzhe	

综述 Special Reports

国外发展模块化机床的趋势值得关注	沈福金	42
Modularization trend of foreign machine tool is noticeable	SHEN Fujin	
车铣复合加工中心的Y轴实现形式及加工对象	颜克辉 孔祥志 罗志久 李鹏	45
The form of Y-axis and machining objects of the turning-milling machining center	YAN Kehui, KONG Xiangzhi, LUO Zhijiu, LI Peng	

设计与研究 Design and Research

直线滚动导轨动力学特性分析方法研究	孙伟 鲁明 汪博 闻邦椿	48
Research on analysis method of dynamics characteristics for linear rolling guide	SUN Wei, LU Ming, WANG Bo, WEN Bangchun	
数控机床电气柜设计简明要点	刘畅	53
Design points of electrical cabinet in machine tool	LIU Chang	
VHT系列立式车铣复合加工中心重心驱动设计技术	董建军 冯广超 赵宏安 付承云	56
Gravity drive designing technology of VHT series vertical turning-milling compound machining center	DONG Jianjun, et al.	

目次 CONTENTS

《制造技术与机床》·2011年第3期(总第584期) · No.3, 2011, Total Issue No. 584

五轴磨床加工精密球面的磨削形态及运动分析	侯海云 蒋天一 胡德金	58
Topological and kinematic analysis applied for 5-axis spherical precision grinding machine	HOU Haiyun, JIANG Tianyi, HU Dejin	
面向制造的机床并行公差优化设计	祝莉平 翟栋	64
Concurrent tolerance optimization for machine tool manufacturing	ZHU Liping, ZHAI Dong	
基于西门子840D的信号模拟装置的设计与应用	于洋 来燕菁	67
Design and applications of signal simulating apparatus based on Siemens 840D	YU Yang, LAI Yanjing	
基于电动机电流的数控机床主轴状态监测系统研究	周玉清 孙挪刚 黎玉刚 母勇民	71
NC machine tool spindle condition monitoring system based on motor current	ZHOU Yuqing, SUN Nuogang, LI Yugang, MU Yongmin	
PE阀门自动焊接机的开发设计	董先智	74
Design of PE-valve automatic welding machine	DONG Xianzhi	
应用于磨齐木制品两头专用设备的设计	孔令义	76
Design of special equipment for grinding the double-end of wood products	KONG Lingyi	
超长、大管径精密螺纹套管专用数控套车机床研究	张世亮 郭雄陆兵	79
Study on special CNC machine tool used to process extra-long and big diameter precise threaded socket	ZHANG Shiliang, et al.	
常用链轮链条三维参数化造型技术研究及其系统开发	杨松林 徐金鑫 张钢	83
Study on the 3D parametric technology of common sprocket-chain and the system development	YANG Songlin, XU Jinxin, et al.	

工艺与检测 Technology and Test

螺旋锥齿轮真实齿面偏差修正研究	陈书涵 严宏志 贺尚红	87
Research on real tooth surface deviation correction of spiral bevel gear	CHEN Shuhuan, YAN Hongzhi, HE Shanghong	
三次NURBS样条曲线插补加工螺旋转子建模与加工研究	余道洋 韩江夏链	91
Modeling and machining research of cubic NURBS spline curve interpolation processing helical rotor	YU Daoyang, HAN Jiang, et al.	
焊接床身时效处理效果评价方法的研究	袁涛 祝卫国 王春茂 曹怀祥 申孝民	94
Application of MMM to evaluate aging effects of welded body	YUAN Tao, ZHU Weiguo, WANG Chunmao, CAO Huaixiang, et al.	
可转位刀片刃口钝化与机床应用	王晓峰 张国福	97
Edge radiusing of indexable carbide insert and application of the machine tool	WANG Xiaofeng, ZHANG Guofu	
重型机夹切刀锁紧结构分析与设计	杨顺田 彭美武	99
Analysis and design of heavy machine clip cutting knife lock structure	YANG Shuntian, PENG Meiwu	
钛合金激光快速成形缺陷原因分析	尚晓峰 韩冬雪 于福鑫	103
Cause analysis on defects of titanium alloy laser rapid forming	SHANG Xiaofeng, HAN Dongxue, YU Fuxin	
论莫尔条纹的计算	龚仲华	106
Calculation of Moire fringe	GONG Zhonghua	
床身端面加工精度的研究	谭德宁 滕云	109
Research on machining precision of bed end surface	TAN Dening, TENG Yun	
XK2420×160数控龙门铣镗床装配新技术	陈亚菊 尹玉生	111
New assembly techniques of XK2420×160 CNC gantry-type milling-boring machine	CHEN Yaju, YIN Yusheng	
如何提高枪钻加工深径比	黄宝岭	114
How to improve the depth/diameter ratio of gundrilling	HUANG Baoling	
自制联通式水平仪的使用	杨学玉 黄信友 崔宇翔	115
Analyzing the use of the self-made unicorn levels	YANG Xueyu, HUANG Xinyou, CUI Yuxiang	
万吨桨油孔和起吊孔的加工	胡增荣	117
Machining methods of big propeller's oil hole and lifting hole	HU Zengrong	

管理技术 Managing Skill

机电产品设计过程中的成本估算与控制方法研究	张根保 卢华军	119
Study on cost estimation and control for the design stage of electromechanical products	ZHANG Genbao, LU Huajun	
针对作业调度问题的遗传选择算子性能分析	刘文豪 黄宗南	124
Analysis of genetic selection operator performance in job shop scheduling problem	LIU Wenhao, HUANG Zongnan	
冲压成形不良产品的分析与对策	李广明	129
The analysis and countermeasures on inferior products formed by stamping process	LI Guangming	

目次 CONTENTS

《制造技术与机床》· 2011年第3期(总第584期) · No.3, 2011, Total Issue No.584

改装与维修 Refitting and Maintenance

- 基于西门子840D系统的大型磨齿机数控改造 岳秋琴 张进春 余华 131
CNC system transformation of large grinding machine based on SINUMERIK 840D YUE Qiuqin, ZHANG Jinchun, YU Hua
- CK5116数控立车横梁升降故障剖析与维修 密方伟 何东林 汪洋 135
Analysis and service skill of crossbeam fluctuation breakdown about CK5116 CNC vertical machining center MI Fangwei, et al.

功能部件 Function Units

- 变频器在连杆钻铰螺纹孔数控机床上的应用 刘丽红 137
Application of Yaskawa inverter in linkage hinge screw hole drilling NC machine LIU Lihong
- 液压自适应心轴的研制与应用 徐赞 宫德友 王景晓 丁军武 140
Development and application of hydraulic adaptive mandrel XU Zan, GONG Deyou, WANG Jingxiao, DING Junwu

模具技术 Moulds & Dies

- 铸造铝合金轮毂旋压模具设计及压料方式研究 孔玲 张立娟 常海平 李昌海 142
Study on Al-alloy wheel spinning die and the blank holder mode KONG Ling, ZHANG Lijuan, CHANG Haiping, LI Changhai

汽车制造技术 Auto Manufacturing Technology

- 双刀架曲轴数控车削在线测量及自动补偿的实现 罗敏 徐春友 周亚萍 144
Design of online measurement and auto tool compensation of CNC dual-turret crankshaft turning LUO Min, XU Chunyou, ZHOU Yaping
- 离合器摩擦片摩擦性能影响因素研究 罗晓晔 李雅娴 陈锡伟 吴铃海 148
Study on the influence factors of frictional behaviour for clutch friction pair LUO Xiaoye, LI Yaxian, CHEN Xiwei, WU Linghai

数控专刊 CNC Seminar

- 基于华中数控系统宏程序的凸轮轴数控加工 杨晓春 154
NC machining of the camshaft based on macro program of Huazhong NC system YANG Xiaochun
- 基于实时以太网的高性能多轴数控系统 周凯 157
High-performance multi-axis NC system based on real-time ethernet ZHOU Kai
- FANUC系统/系列中HRV控制的作用与调整方法 宁朝阳 刘瑞已 162
The role of HRV control and its adjustment of FANUC i series NING Chaoyang, LIU Ruiyi
- 外挂电子手轮PLC程序控制原理及编制——SIEMENS 801、802系列 蔡美富 张煜 164
PLC program control theory & programming of alone electron handwheel——SIEMENS 801, 802 series CAI Meifu, ZHANG Yu
- 手轮在三菱FXPLC定位控制系统中的应用 黄风 167
Application of handwheel in Mitsubishi FXPLC position control system HUANG Feng
- PC上位机与S7-300系列PLC进行通讯的研究 马健 韩晓华 黄绪平 赵洪贤 董欣 杜石岩 169
Research on communication between PC and S7-300 series PLC MA Jian, HAN Xiaohua, HUANG Xuping, ZHAO Hongxian, et al.
- 广告导航 Leading to Advertisements 目录后页
- 通知 Notice 导航末页
- 书讯 New Books 41, 63, 75, 78, 123, 134, 153, 166
- 投稿须知 Notice for Contribution 172

下期精彩内容预告

- ◆一种新型旋转式刀库
- ◆直驱转台技术在立式车铣复合加工中心上的应用
- ◆卧式车床虎头刀夹拉刀结构设计
- ◆A/B双摆角数控万能铣头摆角力矩的计算研
- 究
- ◆基于面积的结合面切向动刚度特性研究
- ◆组合框架式液压机立柱概念设计
- ◆大型双柱立车误差建模及分析
- ◆敏捷制造模式下产品创新的供应商评价