



ISSN 0577-6686
CODEN CHHKA2

机械工程学报

JOURNAL OF MECHANICAL ENGINEERING

二〇一六年

第五十二卷

第三期

Vol.52 No.3 2016



机械工程学报®

JOURNAL OF MECHANICAL ENGINEERING



CMES 中国机械工程学会主办

半月刊 | 3 / 2016
第 52 卷

机械工程学报

JIXIE GONGCHENG XUEBAO

2016年第52卷第3期 2月5日出版

目次

机械学

机构学及机器人

2 自由度绳索牵引并联机器人的高速点到点轨迹规划方法

.....张文佳 尚伟伟 (1)

一种无伴随运动的对称两转一移并联机构

.....陈子明 张 扬 黄 坤 黄 真 (9)

基于离散化的六足机器人自由步态生成算法

.....李满宏 张明路 张建华 张小俊 (18)

行星滚柱丝杠副螺旋曲面啮合机理研究

.....付晓军 刘 更 马尚君 佟瑞庭 (26)

双爪式爬杆机器人的夹持性能分析

.....江 励 管贻生 周雪峰 杨铁牛 苏满佳 吴鸿敏 (34)

机械动力学

周期稀疏导向超小波在风力发电设备发电机轴承故障诊断中的应用

.....贺王鹏 訾艳阳 陈彬强 姚 斌 张周锁 (41)

机械不平衡及轴瓦间隙对水轮机运行稳定性的影响分析

.....孟 龙 刘 孟 支发林 周凌九 王正伟 (49)

多杆系统中导波能量传递特性试验研究

.....刘秀成 徐 秀 吴 斌 高 博 何存富 (56)

盲解卷积和频域压缩感知在轴承复合故障声学诊断的应用

.....周 俊 伍 星 迟毅林 潘 楠 刘 畅 (63)

飞行器结构在高强宽频噪声环境下的响应预示分析与试验研究

.....林华刚 闫云聚 李鹏博 (71)

移动最小二乘法的时变结构模态参数辨识

.....杨 武 刘 莉 周思达 马志赛 (79)

摩擦学

基于拟动力学的航空发动机主轴滚子轴承热弹流润滑分析

.....史修江 王黎钦 (86)

静态接触中表面纹理对塑性变形界面微凸体平坦化的影响

.....胡兆稳 刘 焜 刘小君 王 伟 (93)

反旋流对密封静力与动力特性影响的理论与试验研究

.....孙丹 王双 艾延廷 王克明 肖忠会 李云 于小丹 (101)

硼酸酯与聚醚复配水溶液的摩擦学性能研究

.....谷国平 张朝辉 黄宝成 李森 王磊 (110)

制造科学与技术

数字化设计与制造

光滑平面约束下的活动线缆物性建模与运动仿真技术

.....金望韬 刘检华 刘佳顺 唐承统 林海立 (118)

基于 Halbach 阵列的永磁轴承承载力解析模型及设计方法

.....王念先 王东雄 陈奎生 吴华春 (128)

基于局部样本增益优化的 α -shape 曲面拓扑重建

.....孙殿柱 魏亮 李延瑞 白银来 (136)

基于 RLS-DE 算法的多变量径向磁轴承系统辨识

.....魏彤 田双彪 (143)

产品装配过程碳排放解算

.....张雷 马军 符永高 徐国浩 苏勇 (151)

面向机床整机动态性能的立柱结构优化设计研究

.....刘成颖 谭锋 王立平 蔡钊勇 (161)

制造工艺与装备

微铣削中考虑刀具跳动的瞬时切厚解析计算方法

.....聂强 黄凯 毕庆贞 朱利民 (169)

PCBN 刀具切削高温合金锯齿形切屑形成机理

.....吴明阳 赵旭 计伟 程耀楠 刘利 刘献礼 (179)

横向超声振动对金刚石线锯切割硬脆材料锯切力及临界切削深度的影响

.....李伦 李淑娟 汤奥斐 李言 (187)

基于诱导法曲率的齿轮成形磨削干涉分析

.....丁国龙 张颂 赵大兴 赵东雄 (197)

金属颗粒冷态高速微喷射增材制造工艺研究

.....田小永 曹家赫 曹毅 田晓阳 张敏娟 李涤尘 (205)

第 5 届上银优秀机械博士论文奖..... (55, 100, 127, 135)

JOURNAL OF MECHANICAL ENGINEERING

Vol.52 No.3 February 2016

CONTENTS

- High-speed Point-to-point Trajectory Planning of a 2-DOF Cable Driven Parallel Manipulator
.....ZHANG Wenjia SHANG Weiwei (1)
- Symmetrical 2R1T Parallel Mechanism without Parasitic Motion
..... CHEN Ziming ZHANG Yang HUANG Kun HUANG Zhen (9)
- Free Gait Generation Algorithm for a Hexapod Robot Based on Discretization
..... LI Manhong ZHANG Minglu ZHANG Jianhua ZHANG Xiaojun (18)
- Studies on Meshing Mechanism of Helical Surfaces in Planetary Roller Screw Mechanism
..... FU Xiaojun LIU Geng MA Shangjun TONG Ruiting (26)
- Grasping Performance Analysis of a Biped-pole-climbing Robot
..... JIANG Li GUAN Yisheng ZHOU Xuefeng YANG Tieniu SU Manjia WU Hongmin (34)
- Periodic Sparsity Oriented Super-wavelet Analysis with Application to Motor Bearing
Fault Detection of Wind Turbine
.....HE Wangpeng ZI Yanyang CHEN Binqiang YAO Bin ZHANG Zhousuo (41)
- Analysis of the Influence of the Mechanical Imbalance and the Bearing Clearance on the
Operating Stability of Hydro-power Unit
..... MENG Long LIU Meng ZHI Falin ZHOU Lingjiu WANG Zhengwei (49)
- Experimental Investigations on Energy-transfer Characteristics of Guided Wave in Multi-rod System
.....LIU Xiucheng XU Xiu WU Bin GAO Bo HE Cunfu (56)
- Blind Deconvolution and Frequency Domain Compressive Sensing Application in Bearing
Composite Acoustic Fault DiagnosisZHOU Jun WU Xing CHI Yilin PAN Nan LIU Chang (63)
- Aircraft Structure's Response Prediction Analysis and Experimental Study in High-strength
Broadband Noise Environments
..... LIN Huagang YAN Yunju LI Pengbo (71)
- Modal Parameter Identification of Time-varying Structures via Moving Least Square Method
.....YANG Wu LIU Li ZHOU Sida MA Zhisai (79)
- TEHL Analysis of Aero-engine Mainshaft Roller Bearing Based on Quasi-dynamics
.....SHI Xiujiang WANG Liqin (86)
- Effect of Surface Texture on Asperity Flattening at Plastic Deformed Interface in Static Contact State
.....HU Zhaowen LIU Kun LIU Xiaojun WANG Wei (93)
- Theoretical and Experimental Research on the Performance of Anti-swirl Flow for the
Static and Dynamic Characteristics of Seals
.....SUN Dan WANG Shuang AI Yanting WANG Keming
XIAO Zhonghui LI Yun YU Xiaodan (101)

Tribological Properties of Aqueous Solutions with Polyether and Borate	GU Guoping ZHANG Chaohui HUANG Baocheng LI Sen WANG Lei (110)
Motional Cable Harness Physical Characteristic Oriented Modeling and Kinetic Simulation Technology under Smooth Plane Constraints	JIN Wangtao LIU Jianhua LIU Jiashun TANG Chengtong LIN Haili (118)
Bearing Capacity Model and Design Method of Permanent Magnetic Bearings Based on Halbach Array	WANG Nianxian WANG Dongxiong CHEN Kuisheng WU Huachun (128)
Surface Reconstruction with α -shape Based on Optimization of Surface Local Sample	SUN Dianzhu WEI Liang LI Yanrui BAI Yinlai (136)
The Identification of Multivariable Radial Magnetic Bearing System Based on RLS-DE Algorithm	WEI Tong TIAN Shuangbiao (143)
Carbon Emission Analysis for Product Assembly Process	ZHANG Lei MA Jun FU Yonggao XU Guohao SU Yong (151)
Research on Optimization of Column Structure Design for Dynamic Performance of Machine Tool	LIU Chengying TAN Feng WANG Liping CAI Zhaoyong (161)
New Mathematic Method of Calculating Instantaneous Un-deformed Chip Thickness with Tool Run-out in Micro-end-milling	NIE Qiang HUANG Kai BI Qingzhen ZHU Limin (169)
Generation Mechanism of Saw-tooth Chip in Turning of GH4169 with PCBN Tool	WU Mingyang ZHAO XU JI Wei CHENG Yaonan LIU Li LIU Xianli (179)
Influence of Diamond Wiresaw Excited by Transverse Ultrasonic Vibration on Cutting Force and Critical Cutting Depth of Hard and Brittle Materials	LI Lun LI Shujuan TANG Aofei LI Yan (187)
Interference Study of Gear Form Grinding Based on Induced Normal Curvature	DING Guolong ZHANG Song ZHAO Daxing ZHAO Dongxiong (197)
Research on the Additive Manufacturing Process Based on High-speed Metal Particles Cold-state Impact	TIAN Xiaoyong CAO Jiahe CAO Yi TIAN Xiaoyang ZHANG Minjuan LI Dichen (205)