

## 庆祝白师贤先生九十华诞专刊

### 目 次

双包络蜗轮蜗杆的现代设计与检测方法(邀请论文) .....	陈宁新(1601)
机构运动学建模的倍四元数法(邀请论文) .....	廖啟征(1611)
基于区间分析的一类三转动自由度并联机构的精度设计(邀请论文) .....	宋轶民, 翟亚普, 孙 涛, 李金和, 张嘉滕(1620)
新型锻造操作机主运动机构控制系统设计(邀请论文) .....	丁华锋, 祖 琪, 王成龙, 刘 征(1627)
V 型和 Z 型电热微驱动器性能比较与分析(邀请论文) .....	张绪平, 张 卓(1636)
具有单拐点大变形梁的柔顺机构伪刚体模型 .....	余跃庆, 朱舜昆(1644)
外转子构造的电磁液冷缓速器制动性能 .....	李德胜, 王伟杰, 张泽男, 谢 谋(1652)
基于独立运动分流标记法的多环耦合机构自由度分析方法 .....	高慧芳, 刘婧芳, 黄晓欧(1658)
基于拓扑优化的人工晶状体襻柔性机构设计 .....	杜秋月, 赖拥军, Robert James Campbell(1665)
2219-T6 铝合金搅拌摩擦焊接头疲劳性能 .....	孙国芹, 陈亚静, 曹方莉, 牛江佩, 陈树君(1670)
大直径菲涅尔透镜模具加工机床静动态特性 .....	关佳亮, 朱 磊, 孙鲁青, 马新强(1675)
基于振动响应机理的轴承故障定量诊断及量化分析 .....	崔玲丽, 张 宇, 巩向阳, 张建宇(1681)
微尺度下速度滑移对空气静压导轨性能影响 .....	陈东菊, 周 帅, 董丽华, 范晋伟(1688)
基于灰色支持向量机模型的滚动轴承故障诊断与预测方法 .....	王建华, 亢太体, 刘志峰, 赵成斌, 谷力超(1693)
印刷过程中墨辊转速对油墨温度场的影响 .....	初红艳, 黄 为, 蔡力钢, 宗明明(1699)
多电极耦合电弧形态研究 .....	陈树君, 张 亮, 门广强, 宋亚修(1705)
基于改进 FSVM 的旋转机械故障诊断算法 .....	杨建武, 高亚举, 谷力超, 刘志峰, 亢太体, 赵成斌(1711)

多头锥螺杆-衬套副的曲面建模与设计方法 ..... 王新华, 孙 肖, 涂承媛, 邢欢欢, 杨 鹏(1718)

面向舰船应用的直线电机泵控制策略及振动试验研究

..... 黄叶青, 聂松林, 刘 帆, 李 雷, 马 凯(1727)

基于分向半解析有限元法的矩形杆波动特性..... 唐 楠, 吴 斌, 刘秀成, 曹海洋, 何存富(1734)

基于互导纳原理的梳状传感器优化设计

..... 何存富, 黄 炎, 吕 炎, 赵华民, 张令晖, 王遥遥, 吴 斌(1743)

基于机电阻抗与超声导波技术的复合材料梁损伤定位

..... 刘增华, 曹瑾瑾, 张 龙, 何存富, 吴 斌(1749)

纵向辅磁双稳态压电悬臂梁非线性动力学 ..... 姚明辉, 李印波, 张 伟(1756)

执行编辑: 吕小红 责任编辑: 杨开英 张 蕾 吕小红 郑筱梅

本期基本参数: CN11-2286/T \* 1974 \* m \* A4 \* 160 \* zh \* P \* ¥20.00 \* 1 000 \* 23 \* 2015-11

**Special Issue in Celebration of Professor Shixian Bai's 90th Birthday**

**CONTENTS**

Computerized Design and Measurement of Double-enveloping Worm-Gears (Invited Paper)	
.....	CHEN Ning-xin(1601)
Kinematic Modeling of Mechanisms Using Double Quaternion (Invited Paper).....	LIAO Qi-zheng(1611)
Interval Analysis Based Accuracy Design of a 3-DOF Rotational Parallel Mechanism (Invited Paper)	
.....	SONG Yi-min, ZHAI Ya-pu, SUN Tao, LI Jin-he, ZHANG Jia-teng(1620)
Control System Design of a New Forging Manipulator's Main Motion Mechanism (Invited Paper)	
.....	DING Hua-feng, ZU Qi, WANG Cheng-long, LIU Zheng(1627)
Performance Comparison and Analysis of V- and Z-shaped Electrothermal Actuators (Invited Paper)	
.....	ZHANG Xu-ping, ZHANG Zhuo(1636)
Pseudo-rigid-body Model of Large Deflection Beams With Single Inflection in Compliant Mechanisms	
.....	YU Yue-qing, ZHU Shun-kun(1644)
Performance of Liquid-cooled Eddy Current Retarder With External Rotor	
.....	LI De-sheng, WANG Wei-jie, ZHANG Ze-nan, XIE Mou(1652)
Method of Mobility Calculation for a Coupled Mechanism Based on Independent Motion Shunting	
Measurement .....	GAO Hui-fang, LIU Jing-fang, HUANG Xiao-ou(1658)
Compliant Mechanism Design for IOL Haptics Using Topology Optimization	
.....	DU Qiu-yue, LAI Yong-jun, Robert James Campbell(1665)
Fatigue Property Research of Friction Stir Welded Joints for 2219-T6 Aluminum Alloy	
.....	SUN Guo-qin, CHEN Ya-jing, CAO Fang-li, NIU Jiang-pei, CHEN Shu-jun(1670)
Static and Dynamic Characteristics of Large Diameter Fresnel Lens Mold	
.....	GUAN Jia-liang, ZHU Lei, SUN Lu-qing, MA Xin-qiang(1675)
Vibration Mechanism Based Quantitative Diagnosis and Quantization Analysis of Rolling Bearing Fault	
.....	CUI Ling-li, ZHANG Yu, GONG Xiang-yang, ZHANG Jian-yu(1681)

- Effect of Velocity Slip on Performance of the Aerostatic Guideway in Micro-scale  
 ..... CHEN Dong-ju, ZHOU Shuai, DONG Li-hua, FAN Jin-wei(1688)
- Fault Diagnosis and Prediction of Rolling Bearing Based on the Grey Support Vector Machine Model  
 ..... WANG Jian-hua, KANG Tai-ti, LIU Zhi-feng, ZHAO Cheng-bin, GU Li-chao(1693)
- Influence of Ink Roller Speed on the Ink Temperature Field in the Printing Process  
 ..... CHU Hong-yan, HUANG Wei, CAI Li-gang, ZONG Ming-ming(1699)
- Study on Behavior of Multi-electrode Coupled Arc  
 ..... CHEN Shu-jun, ZHANG Liang, MEN Guang-qiang, SONG Ya-xiu(1705)
- Fault Diagnosis Algorithm of Rotating Machinery Based on the Improved FSVM  
 ..... YANG Jian-wu, GAO Ya-ju, GU Li-chao, LIU Zhi-feng, KANG Tai-ti, ZHAO Cheng-bin(1711)
- Surface Modelling and Design Approach for a Multiple Cone Screw-bush Pair  
 ..... WANG Xin-hua, SUN Xiao, TU Cheng-yuan, XING Huan-huan, YANG Peng(1718)
- Research of the Control Strategy and Vibration Test of Linear Motor Driven Piston Pump for Marine  
 Application ..... HUANG Ye-qing, NIE Song-lin, LIU Fan, LI Lei, MA Kai(1727)
- Guided Wave Propagation in a Rectangular-rod Based on Directional Semi-analytical Method  
 ..... TANG Nan, WU Bin, LIU Xiu-cheng, CAO Hai-yang, HE Cun-fu(1734)
- Optimization of Comb Transducer Based on Mutual Admittance Principle  
 ..... HE Cun-fu, HUANG Yan, LÜ Yan, ZHAO Hua-min, ZHANG Ling-hui,  
 WANG Yao-yao, WU Bin(1743)
- Damage Location of Composite Beam Based on Electromechanical Impedance and Ultrasonic  
 Guided Waves Technologies ..... LIU Zeng-hua, CAO Jin-jin, ZHANG Long, HE Cun-fu, WU Bin(1749)
- Nonlinear Dynamicson Auxiliary Magnet for a Bistable Piezoelectric Cantilever Beam  
 ..... YAO Ming-hui, LI Yin-bo, ZHANG Wei(1756)

**Executive Editor:** LÜ Xiao-hong

**Responsible Editors:** YANG Kai-ying, ZHANG Lei, LÜ Xiao-hong, ZHENG Xiao-mei