

2020年7月 第54卷 第7期

## 目 次

全方向康复步行训练机器人具有死区补偿的反步有限时间控制

..... 孙平, 丁雨姗(1)

大型水陆两栖飞机起落架强度试验技术

..... 王彬文, 董登科, 陈莉, 谢宇航(9)

面向离合器接合过程控制的不确定性估计

..... 李晓祥, 王安麟, 李晓田(17)

商用车气压制动系统压力响应模型构建与验证

..... 肖军, 万磊, 冯澜, 李刚炎(25)

车身疲劳载荷识别与应用

..... 龙岩, 蒋凌山, 刘雪强, 陈志勇, 高承明, 黄禹霆(34)

驾驶机器人车辆多新息动态转向力矩补偿

..... 顾爱博, 陈刚(43)

非平稳随机循环工况下离合器接合过程的鲁棒控制

..... 李晓祥, 王安麟, 李晓田(52)

采用机器学习的二甲醚层流燃烧速度预测研究

..... 许凡, 陈朝阳, 李昭, 李倩倩(62)

停缸技术对缸内直喷点燃式发动机燃烧与排放及燃油经济性的影响

..... 杨尚升, 黄勇成, 曹银波(68)

金属泡沫型微粒捕集器中颗粒物沉积特性试验研究

..... 张子鼎, 梁兴雨, 王亚军, 王月森, 李振国, 张志军(75)

带造型凹坑孔的平板气膜冷却特性研究

..... 张子寒, 何坤, 晏鑫(84)

横向间距和截面形状对汽轮机切向进气蜗壳气动性能的影响

薛文松，李军，陈阳，白昆仑，田朝阳(94)

叶尖小翼对轴流风机气动性能及噪声特性影响的数值研究

刘刚，王雷，刘小民(104)

三维间断伽辽金玻尔兹曼方法的完全匹配层吸收边界条件研究

夏博阳，邵卫东，李军(113)

表面粗糙度对低速水润滑滑动轴承混合润滑性能的影响

刘洋洋，金英泽，王亚兵，王报龙，祝长生，袁小阳(121)

轴系倾斜下可倾瓦推力轴承静动特性分析

王报龙，王亚兵，刘洋洋，祝长生，袁小阳(129)

采用频谱细化的超声法在线测量滚动轴承保持架转速

陈书恒，李猛，刘恒，梅凯路，贺凤祥(139)

两操作模式 2-R(SS)<sub>2</sub>-R(RR)<sub>2</sub>(RR)<sub>2</sub> 并联机构误差建模及精度设计

安守和，汪满新，李正亮(146)

联合控制策略与多物理域有限元仿真的异步电机软启动瞬态振动分析

赵津，张庆，魏晓晗，马程鹏(158)

1 100 kV 气体绝缘金属封闭输电线路用三支柱绝缘子电气性能优化

贾云飞，高璐，汲胜昌，李心一，李志兵，刘焱(168)

高吞吐率的高效视频编码熵编码并行硬件架构设计

周小朋，梁峰，李冰(180)

WiNet：一种适用于无线感知场景的步态识别模型

段鹏松，周志一，王超，曹仰杰，王恩东(187)

Ti<sub>3</sub>SiC<sub>2</sub> 含量对热处理态(Ti<sub>5</sub>Si<sub>3</sub>+TiC)/TC4 复合材料组织及力学性能的影响

王芝萍，高义民，黄孝余，赵四勇(196)

## CONTENTS

Backstepping Finite-Time Control with Dead-Zone Compensation for Omnidirectional Rehabilitative Training Walker	SUN Ping, DING Yushan (1)
Strength Test Technique for Large Amphibious Aircraft Landing Gear	WANG Binwen, DONG Dengke, CHEN Li, XIE Yuhang (9)
Uncertainty Estimation for Clutch Engagement Process Control	LI Xiaoxiang, WANG Anlin, LI Xiaotian (17)
Construction and Verification of Pressure Response Model for Commercial Vehicle Pneumatic Braking System	XU Jun, WAN Lei, FENG Lan, LI Gangyan (25)
Identification of Vehicle Body Fatigue Loads and Its Application	LONG Yan, JIANG Lingshan, LIU Xueqiang, CHEN Zhiyong, GAO Chengming, HUANG Yuting (34)
Multi-Innovation Based Dynamic Steering Torque Compensation for Driving Robot Vehicle	GUA ibo, CHEN Gang (43)
Robust Control of Clutch Engagement Process under Non-Stationary Random Cyclic Conditions	LI Xiaoxiang, WANG Anlin, LI Xiaotian (52)
Prediction on the Laminar Burning Velocity of Dimethyl Ether/Air Mixtures Using Machine Learning	XU Fan, CHEN Zhaoyang, LI Zhao, LI Qianqian (62)
Influence of Cylinder Deactivation (CDA) on Combustion and Emission Characteristics and Fuel Economy of Direct-Injection Spark-Ignition Engine	YANG Shangsheng, HUANG Yongcheng, CAO Yinbo (68)
Experimental Study on the Deposition Characteristics of Particulate Matter in Metal Foam Particulate Filter	ZHANG Ziding, JIANG Xingyu, WANG Yajun, WANG Yuesen, LI Zhenguo, ZHANG Zhijun (75)
Investigation on the Film Cooling Efficiency on a Plain Surface with Hole Embedded in Contoured Crater	ZHANG Zihan, HE Kun, YAN Xin (84)
Effects of Transverse Distance and Cross Section Shape on Aerodynamic Performance of Tangential Admission Volute of Steam Turbine	XUE Wensong, LI Jun, CHEN Yang, BAI Kunlun, TIAN Chao yang (94)
Numerical Investigation on Effects of Blade Tip Winglet on Aerodynamic and Aeroacoustic Performances of Axial Flow Fan	LIU Gang, WANG Lei, LIU Xiaomin (104)
Study on the Perfectly Matched Layer Absorbing Boundary Conditions for Three-Dimensional Discontinuous Galerkin Boltzmann Method	XIA Boyang, SHAO Weidong, LI Jun (113)
Effect of Surface Roughness on Mixed-Lubrication Performance of Low-Speed and Water-Lubricated Sliding Bearings	LIU Yangyang, JIN Yingze, WANG Yabing, WANG Baolong, ZHU Changsheng, YUAN Xiaoyang (121)
Static and Dynamic Characteristics of Tilting-Pad Thrust Bearing on Inclined Shaft	WANG Baolong, WANG Yabing, LIU Yangyang, ZHU Changsheng, YUAN Xiaoyang (129)
On-Line Rotational Speed Measurement of Rolling Bearing Cage Based on Ultrasonic Measurement with Spectrum Refinement	CHEN Shuheng, LI Meng, LIU Heng, MEI Kailu, HE Fengxiang (139)
Error Modeling and Accuracy Design of a 2-R(SS)₂-R(RR)₂(RR)₂ Parallel Mechanism with Two Operation Modes	A N Shouhe, WANG Manxin, LI Zhengliang (146)
Transient Vibration Analysis of Asynchronous Motor in Soft Startup Process Using Co-Simulation on Control Strategy and Multi-Physical Domain Finite Element Method	ZHAO Jin, ZHANG Qing, WEI Xiaohan, MA Chengpeng (158)
Electrical Performance Optimization for Tri-Post Insulator on 1100 kV Gas-Insulated Metal-Enclosed Transmission Line	JIA Yunfei, GAO Lu, JI Shengchang, LI Xinyi, LI Zhibing, LIU Yan (168)
A High-Throughput Parallel Very-Large-Scale Integration Architecture of Entropy Coding in High Efficiency Video Coding	ZHOU Xiaopeng, JIANG Feng, LI Bing (180)
WiNet: a Gait Recognition Model Suitable for Wireless Sensing Scene	DUAN Pengsong, ZHOU Zhiyi, WANG Chao, CAO Yangjie, WANG Endong (187)
Effects of Ti <sub>3</sub> SiC <sub>2</sub> Content on the Microstructure and Properties of Heat Treated (Ti <sub>3</sub> SiC <sub>2</sub> +TiC)/TC4 Composites	WANG Zhiping, GAO Yimin, HUANG Xiaoyu, ZHAO Siyong (196)