



浙江大学



中国 · 杭州 HANGZHOU, CHINA

工程设计学报

Gongcheng Sheji Xuebao

第 29 卷 第 2 期

2022 年 4 月

目 次

设计理论与方法

4WID-4WIS智能车阿克曼转向轨迹规划及位置估算 时培成,陈旭,杨爱喜,章亮(123)

创新设计

轮-履-腿复合仿生机器人步态规划及越障性能分析 芮宏斌,李路路,曹伟,王天赐,段凯文,吴莹辉(133)

体感交互式上肢镜像康复训练机器人系统 刘庆祥,郭冰菁,韩建海,李向攀,黄明祥(143)

山地物探电动钻机模块化设计及安全性分析 黄志强,喻洪梅,马亚超,谢豆,周操(153)

三角混合两级杠杆微位移放大机构的设计及性能分析 丰飞,傅雨晨,范伟,马举(161)

优化设计

考虑维修场所的动车组多部件双目标成组维修研究 齐彦昆,王红,何勇,熊律(168)

AUV接驳装置悬浮平衡分析与配重优化设计 辛传龙,郑荣,任福琳,梁洪光(176)

一种工业机器人多目标轨迹优化算法 李琴,贾英崎,黄玉峰,李刚,叶闻(187)

基于钢丝绳传动的自动抹灰机的轻量化设计 廖红玉,邓梦洋,周敏,谢良喜,姚俊夫(196)

建模、仿真、分析与决策

柔顺停歇机构伪刚体模型的运动学和动力学分析 独亚平,赵春花,郭嘉辉,周川,张立强(202)

自动化生产线用同步带传动升降机的动态特性分析 王学军,普江华,陈明方(212)

整机和系统设计

用于油气勘探的电代油驱动装置系统设计与分析 王春霖,刘畅,杨华,覃鸿,陈国柱(220)

基于TDLAS的批量种子活力检测装置设计 徐云杰,沈俞,胡飞,贾良权,祁亨年(231)

可变车道隔离护栏运载机器人系统及其控制策略 田为广,徐海黎,陈妍,朱倚娴,刘熙(237)

基于环形红外阵列的移动机器人自动跟随系统 徐胜,邢强,王浩(247)

基于组合方式的掘进机导航系统研究 田立勇,孙业新,于宁,陈洪月,马春莹(254)

本刊被收录为 2021—2022 年度中国科学引文数据库(CSCD)核心库期刊 (132)

本刊入选《世界期刊影响力指数(WJCI)报告(2020 科技版)》 (201)

本刊被评为“RCCSE 中国核心学术期刊(A)” (246)

《中文核心期刊要目总览》入编通知 (封三)

期刊基本参数:CN 33-1288/TH * 1994 * b * A4 * 140 * zh * P * ¥30.00 * 2000 * 16 * 2022-04

本期责任编辑:陈波 吴云

Chinese Journal of Engineering Design

Volume 29 Number 2

April 2022

Contents

Design Theory and Method

- Ackerman steering trajectory planning and position estimation of 4WID-4WIS intelligent vehicle
.....SHI Pei-cheng, CHEN Xu, YANG Ai-xi, ZHANG Liang (123)

Innovative Design

- Gait planning and obstacle-surmounting performance analysis of wheel-track-leg composite bionic robot
.....RUI Hong-bin, LI Lu-lu, CAO Wei, WANG Tian-ci, DUAN Kai-wen, WU Ying-hui (133)
- Somatosensory interactive upper-limb mirror rehabilitation training robot system
.....LIU Qing-xiang, GUO Bing-jing, HAN Jian-hai, LI Xiang-pan, HUANG Ming-xiang (143)
- Modular design and safety analysis of mountain geophysical electric drilling rig
.....HUANG Zhi-qiang, YU Hong-mei, MA Ya-chao, XIE Dou, ZHOU Cao (153)
- Design and performance analysis of triangular hybrid two-stage lever micro-displacement amplification mechanism
.....FENG Fei, FU Yu-chen, FAN Wei, MA Ju (161)

Optimization Design

- Research on multi-component dual-objective group maintenance for electric multiple unit considering maintenance site
.....QI Yan-kun, WANG Hong, HE Yong, XIONG Lü (168)
- Suspension balance analysis and counterweight optimization design of AUV docking device
.....XIN Chuan-long, ZHENG Rong, REN Fu-lin, LIANG Hong-guang (176)
- A multi-objective trajectory optimization algorithm for industrial robot
.....LI Qin, JIA Ying-qi, HUANG Yu-feng, LI Gang, YE Chuang (187)
- Lightweight design of automatic plastering machine based on wire rope transmission
.....LIAO Hong-yu, DENG Meng-yang, ZHOU Min, XIE Liang-xi, YAO Jun-fu (196)

Modeling, Simulation, Analysis and Decision

- Kinematic and dynamic analysis of pseudo-rigid body model of compliant dwell mechanism
.....DU Ya-ping, ZHAO Chun-hua, GUO Jia-hui, ZHOU Chuan, ZHANG Li-qiang (202)
- Dynamic characteristic analysis of synchronous belt transmission elevator for automatic production line
.....WANG Xue-jun, PU Jiang-hua, CHEN Ming-fang (212)

Whole Machine and System Design

- System design and analysis of electricity-replace-oil driving device for oil and gas exploration
.....WANG Chun-lin, LIU Chang, YANG Hua, QIN Hong, CHEN Guo-zhu (220)
- Design of vigor detection device for batch seeds based on TDLAS
.....XU Yun-jie, SHEN Yu, HU Fei, JIA Liang-quan, QI Heng-nian (231)
- Variable lane isolation guardrail carrier robot system and its control strategy
.....TLAN Wei-guang, XU Hai-li, CHEN Yan, ZHU Yi-xian, LIU Xi (237)
- Automatic following system of mobile robot based on annular infrared array
.....XU Sheng, XING Qiang, WANG Hao (247)
- Research on navigation system of roadheader based on combination mode
.....TIAN Li-yong, SUN Ye-xin, YU Ning, CHEN Hong-yue, MA Chun-ying (254)