

农业发展新视点

我国丘陵山区应对农机化两大困境的新对策——基于宜机化土地整治	陈建 (1)
--------------------------------------	--------

理论研究与探讨

基于田间地面不平度测试装置的激光传感器标定	王利娟 闫建国 张永等 (5)
水果无损采摘机械手工作空间分析及参数确定	刘燕德 王观田 王均刚等 (12)
基于 MatLab 的多目标猕猴桃无损采摘路径规划	张莎莎 王周宇 陈礼鹏等 (18)
农机装备早期故障消除模型	柳剑 岳高峰 叶进等 (24)
喷雾机喷杆有限元模态分析与试验	乔白羽 丁素明 薛新宇等 (30)
曲柄滑块秸秆压缩机构振动研究—基于惯性力平衡法	周跃鹏 陈树人 唐忠等 (37)
气压劈裂式深松铲的土壤劈裂减阻机理及有限元分析	刘明财 焦轶 苏继龙 (42)
基于 CNC 技术的插秧机运动学分析与研究	王沁军 (48)

设计制造

旱地钵苗自动移栽机设计与试验	何亚凯 崔巍 李树君等 (53)
4HBL-2C 型半喂入花生联合收获机设计与试验	胡文泽 何珂 于兴瑞等 (58)
草莓温室无人化循迹搬运车的设计与试验	楼建忠 李建平 吴康等 (64)
全自动烟叶采收机方案设计	于洁 褚金奎 吴中心等 (70)
大蒜联合收获机夹持输送机构的设计与分析	辛杰 侯加林 李玉华等 (75)
玉米精量播种监测系统的设计与试验	杨长江 孟志军 梅鹤波等 (80)
整排夹持式穴盘苗移栽机取送苗装置的设计与研究	马锐 曹卫彬 任玲等 (85)
基于 PLC 的移栽机整排取送苗控制系统的设计	崔财豪 曹卫彬 李树峰等 (91)
残膜回收灭茬联合作业机的设计与试验	王新年 王智 (96)
切捆除膜机的设计与模态分析	陈玉华 田富洋 闫银发等 (101)
链齿式耕层残膜回收机捡拾机构设计与试验	李辰 白圣贺 靳伟 (107)
草帘自动布草机的研制与试验	邓春岩 杨阳 程辉等 (112)
采棉机核心部件数控加工工艺设计优化	蒋浩 (116)
马铃薯智能排种机补种系统设计与试验	阿拉腾希胡日 (121)

试验研究

齿带式油菜捡拾器性能优化与整机参数试验	江涛 梁苏宁 沐森林等 (125)
红壤凿形深松铲的设计与试验	严晓丽 汪春 李明等 (135)

双螺旋式有机肥撒施机抛撒性能影响因素建模与试验	禹振军 熊 波 高 娇 等 (143)
指夹式排种器振动模拟与试验分析	黄小珊 王增辉 姜鑫铭 等 (149)
水田侧深施肥装置的分析与试验	位国建 荐世春 李 娜 等 (154)
基于离散元法的果园开沟刀具的仿真与试验研究	郑延莉 陈 建 王 攀 等 (160)
典型萝卜力学特性的对比试验研究	王方艳 高 升 (166)
微耕机刀辊降耗和机具匀速钢带驱动的试验	刘谦文 杨有刚 张 蕾 等 (170)
玉米籽粒机械化直收技术与机具试验研究	康云友 张道林 鹿秀凤 等 (176)
玉米叶片净光合速率快速检测方法研究	张雨晴 于海业 刘 爽 等 (182)
稻谷真空干燥工艺参数对糙米爆腰增率的影响	徐泽敏 谢修鸿 牟 莉 (186)

新技术应用

稻麦联合收获机械总线化监控系统研究	熊思华 李彦明 焦中元 等 (190)
基于单片机的漏播检测系统的集成电路研究	张 良 杨文彩 仲广远 等 (194)
玉米精量播种机排种性能检测系统研究—基于光电法	郑雯璐 衣淑娟 李抒昊 等 (200)
基于 PCA 模式识别算法的收割机自主路径规划设计	许 娜 周炜明 (204)
果园远程机器人数字视频光纤传输系统—基于 DWDM	冷 伟 (209)
大数据在农业无人机上的应用研究	顾军林 (213)
智能式香梨分级机自动控制系统的设计—基于工业 4.0	周炜明 许 娜 (218)
自动打捆机的关键自由曲面数控加工技术应用	林 源 (223)
收割机刀具磨损状态监测系统的设计—基于图像处理技术	杨德义 王平岗 吴东林 (228)
Web3D 虚拟现实平台在收割机零部件设计中的应用	张亚楠 郝 倩 (233)
基于嵌入式电子信息的农田信息采集系统开发	谭会君 潘 霞 (238)
基于直流电机驱动电路的移动式采摘机器人设计	张战杰 (242)

环境与能源动力工程

FSH(M) 农用风力提水机的水泵设计与特性分析	诺锐亭 袁丽伟 朱丽娜 等 (246)
基于模糊时间序列的农用拖拉机总数量预测	王炎林 陈 建 王 卓 等 (251)

综述

残膜回收机防膜回带机构分析及发展思考	顾 满 胡志超 姬广硕 等 (257)
悬挂式耕整播种机械作业阻力测试技术探究	靳晓燕 孙士明 于晓波 等 (264)

Contents

New View of Agricultural Development

A New Countermeasure Against Two Severe Difficulties in Agricultural Mechanization in China 's Hilly and Mountainous Areas —Based on Land Consolidation for Fitting Large—medium Farm Machinery	Chen Jian.(1)
---	---------------

Theory Study and Discussion

Calibration of Laser Sensor Based on Field Profiling Apparatus	Wang Lijuan et al.(5)
Workspace Analysis and Parameter Determination of Fruit Nondestructive Picking Manipulator	Liu Yande et al.(12)
Non—destructive Harvesting Path Planning of Multi Kiwi Fruit Based on Matlab	Zhang Shasha et al.(18)
Model of Eliminating Early Failures for Agricultural Equipment	Liu Jian et al.(24)
Finite Element Modal Analysis and Experiment of Sprayer Boom	Qiao Baiyu et al.(30)
Vibration Research of Crank Slider Mechanism of Straw Compression —Based on Inertial Force Balance	Zhou Yuepeng et al.(37)
Air Pressure Split and Deep Loosening Shovel of Soil Fracturing Mechanism of Drag Reduction and Finite Element Analysis	Liu Mingcai et al.(42)
Kinematics Analysis and Research on the Transplant Machine Based on CNC Technology	Wang Qinjun et al.(48)

Design and Manufacture

Design and Test of Dry Land Automatic Transplanter for Plug Seedling	He Yakai et al.(53)
Design and Test of Half—feed Peanut Combine Harvester	Hu Wenzhe et al. (58)
Design and Test on Intelligent Tracking Vehicle of Strawberry Picking in Greenhouse	Lou Jianzhong et al.(64)
Scheme Design of Automatic Tobacco Harvester	Yu Jie et al.(70)
Experimental Research on Mechanical Properties of Garlic In Mature Period	Xin Jie et al.(75)
Design and Test of Corn Precision Seeding Monitoring System	Yang Changjiang et al.(80)
The Design and Study on the Picking—up and Delivering Seedling Mechanism of Potted—seedling Automatic Transplanter	Ma Rui et al.(85)
Design of Picking Seedling and Feeding Seedling Control System for Whole Row of Seedlings Transplanting Machine Based on PLC	Cui Caihao et al.(91)
Design and Experiment of Film Remnant Recycle and Turning of Stubble Combined Machine	Wang Xinnian et al.(96)
Design and Modal Analysis of Machine for Splitting a Wrapped Bale and Removing the Packaging Material From the Bale	Chen Yuhua et al.(101)
Design and Experiment on Picking Mechanism of Chain Tooth Type Plough Residue Film Reclaiming Machine	Li Chen et al.(107)
Development and Test of Straw Auto—place Machine for Grass Felt Making	Deng Chunyan et al.(112)
Optimization of NC Machining Process for Cotton—picking Machine Core Components	Jiang Hao et al.(116)
Design and Experiment on the Resow System of the Potato Intelligent Seed Metering Machine	Alateng Xihuri et al.(121)

Experiment and Research

Optimization and Experiment on Performance of Rapeseed Tooth -belt Pick-up Header Jiang Tao et al.(125)

Design and Experiment on the Chisel -shape Deep-shovel in Red Loam Yan Xiaoli et al.(135)

Simulation Modeling and Experimental Research on Influencing Factors for Sprinkling Performance of Double Spiral Manure Spreader Yu Zhenjun et al.(143)

Vibration Simulation and Experimental Analysis of Picker Finger Seedmeter Huang Xiaoshan et al.(149)

Analysis and Experiment of Padda Field Side Deep Fertilizing Device Wei Guojian et al.(154)

Simulation and Experimental Study on the Ditching Tools of Orchard Based on Discrete Element Method Zheng Yanli et al.(160)

Comparative Experimental Study on Mechanical Properties of Typical Radish Wang Fangyan et al.(166)

Reduce Power Consumption of Knife Roller and Experiment of Steel Belt Driving Handheld Tiller Liu Qianwen et al.(170)

Experimental Study on Mechanized Directly Harvesting Technology and Mechinery for Corn Grain Kang Yunyou et al.(176)

Study on Rapid Detection Method of Net Photosynthetic Rate of Maize Leaves Zhang Yuqing et al.(182)

Effects of Technical Parameters on the Crackle Ratio Incrementof Brown Rice in Paddy Rice Vacuum Drying Xu Zemin et al.(186)

Application of New Technology

Research on CAN-Bus Monitoring System of Rice and Wheat Combine Harvester Xiong Sihua et al.(190)

Research on Integrated Circuit of Loss Sowing Detection System Based on Single Chip Microcompute Zhang Liang et al.(194)

Research on the Sowing Performance Monitoring System for Precision Seeders —Based on Photoelectric Sensor Zheng Wenlu et al.(200)

Design of Autonomous Path Planning for Harvester Based on PCA Pattern Recognition Algorithm Xu Na et al.(204)

Digital Video Fiber Transmission System of Orchard Remote Robot — Based on DWDM Leng Wei et al.(209)

Application of Big Data in Agricultural UAVs Gu Junlin(213)

Design of Automatic Control System for Intelligent Pear Grader —Based on Industrial 4.0 Zhou Weiming et al.(218)

Application Research on NC Machining of the key Free Surface Based on Automatic Bundling Machine Lin Yuan(223)

Design for Monitoring System of Harvester Cutting Tool Wear —Based on Image Processing Technology Yang Deyi et al.(228)

Application of Web3D Virtual Reality Platform in the Design of the Parts of the Harvester Zhang Yanan et al.(233)

Development of Farmland Information Collection System Based on Embedded Electronic Information Tan Huijun et al.(238)

Design of Mobile Picking Robot Based on DC Motor Driving Circuit Zhang Zhanjie(242)

Environment and Energy Power Engineering

Design and Characteristic Analysis of FSH (M) Agricultural Use Windpump Abdalla N. O. Kheiry et al.(246)

Prediction of Total Number of Agricultural Tractor Based on Fuzzy Time Series Wang Yanlin et al.(251)

Summary

Analysis and Development of the Film -return Mechanism of Plastic Film Collectors Gu Man et al.(257)

Research on Resistance Test Technology of Suspended Plough Seeding Machine Jin Xiaoyan et al.(264)