

农业发展新视点

基于无人机精准投放赤眼蜂的探讨	赵玲丽	周志艳	宋灿灿	等(1)
-----------------------	-----	-----	-----	------

理论与研究与探讨

色素辣椒机械振动分离机理及试验研究	刘 宇	张学军	朱兴亮	等(7)
双转子水平旋转搂草机弹齿疲劳寿命分析	王泽云	郭志平	武文亮	等(14)
葡萄采摘机械臂的藤蔓避障功能与防缠藤研究	杨皓天	万 腾		(19)
奇异果采摘机器人机械臂控制系统研究—基于计算机视觉和卷积神经网络	冯 硕	李 旗		(25)

设计制造

谷子联合收获机割台关键部件设计与试验	王荣先	常云朋	李 彬	等(30)
自适应穗高拨受式水稻智能育种系统的研制	朱 林	邱建春	陈 敏	等(37)
4LZ-2.4S 型手扶式绿豆联合收获机的设计与试验	邓兴旭	张 涛	唐兴隆	等(43)
基于驱动力矩数学模型的施肥除草机设计	史劲松	赵占平		(52)
挤压式澳洲坚果去皮机脱皮装置的设计与试验	王 槊	潘 睿	薛 忠	等(60)
基于枝采的青花椒采收碎枝一体机设计与试验	宋树民	邵伟兴	吴 瑜	等(67)
智能采棉机自动对行辅助驾驶控制技术研究	苗中华	田大庆	何创新	等(72)
立式旋耕机的设计与试验	汤文博	刘恩光	何 超	等(77)
链耙式残膜回收机链传动故障监测系统的设计	周亚宾	卓海鹏	谢建华	等(82)
2FC-7 型牵引式厩肥撒施车的研制与试验	邹道钟	周卫华	阿力木·买买提吐尔逊	等(88)
4QZ-2200A 型青贮机喂入装置的设计与试验	赵 波	阿力木·买买提吐尔逊	马晓荣	等(93)

试验研究

液压强迫式振动深松单体作业参数优化与试验	李明军	于家川	王仁兵	等(97)
双腔双盘双种带气吸式精量排种器设计与试验	初金星	陈维刚	姜明海	等(108)
PWM 占空比对雾滴飘移特性影响的风洞试验	李龙龙	张瑞瑞	陈立平	等(118)
往复式葡萄剪枝机关键部件的设计与试验	黄 涛	张佳喜	王茂博	(126)
基于两段收获的花生挖掘倒置铺放机的设计与试验			郑金松	(133)
羊草种子全喂入机收脱粒滚筒堵塞分析	马宗雨	布 库	王永铭	等(140)
新型农用昆虫雷达的设计研究与仿真实验	张庆月	刘仁鑫	周培聪	等(146)
果园喷雾机气流场数值分析与试验验证	欧鸣雄	吴敏敏	董 祥	等(151)

气吸式马铃薯播种机智能供种系统设计与试验	吕金庆 刘齐卉 杨德秋 等 (157)
蝴蝶兰盆花分级系统及花朵面积提取试验	杨 意 王再花 刘海林 等 (162)
林业苗木起苗机的设计与试验	杨 腾 辛 颖 王海滨 (167)

新技术应用

基于 PLC 的棉花膜下精量灌溉施肥控制系统设计	单永超 张立新 王 欢 等 (172)
基于 Java 交互式页面的远程农机设计系统研究	李 贞 耿海军 (176)
基于 STM32 的智能灌溉控制系统设计	刘 军 (181)
电涡流传感器在收割机寻迹导航上的应用	刘婷婷 杨 云 (185)
智慧园林机器人管理系统设计—基于移动互联网大数据传输技术	唐新梅 (189)
基于 PLC 的农机零部件加工中机床电气控制系统	李 磊 张国澎 (193)
数学形态学应用于花生收获机的可行性研究	张晋芳 乔元华 潘志伟 (198)
基于计算机网络技术的插秧机作业控制研究	舍乐莫 (202)
穴盘播种机器人控制的形容词语义分析	卞 杰 (206)
三维虚拟仿真系统在农田可视化作业中的应用	刘 杰 (209)
基于智能数据挖掘技术的温室大棚环境参数优化	张呈宇 (213)
基于 CFD 的多层覆盖一体式日光温室热环境模拟	白广宇 庄卫东 (218)

环境与能源动力工程

船式拖拉机折面叶轮驱动性能优化—基于轮叶单元组	张 超 瞿兆杰 江 昱 等 (222)
基于动态路径搜索的农机自动驾驶软件系统研制	崔冰波 魏新华 吴抒航 等 (228)
太阳能园艺修剪机储能容量匹配研究	杜新珂 (233)
多屏联动拖拉机 HMI 界面与可扩展接口设计	王翠霞 (239)
基于模糊 PID 的农用电动汽车直线开关磁阻电机控制	魏宏飞 石新龙 (244)
拖拉机零部件的三维建模—基于智能数字媒体艺术设计	郭冬梅 孙若琳 (248)
农用拖拉机智能驾驶系统的应用研究	许文靖 梁季彝 方镕城 (253)
信号化处理技术在无人驾驶拖拉机中的应用	殷晓轶 (258)

综述

黑龙江省农用植保无人机运营作业服务现状综述	傅东兴 王 军 杨君喜 等 (262)
-----------------------------	---------------------

Journal of Agricultural Mechanization Research

Vol. 44 No. 10 2022

Contents

New View of Agricultural Development

Discussion on Precise Release of Trichogramma Based on Unmanned Aerial Vehicle(UAV) Zhao Lingli et al. (1)

Theory Study and Discussion

Vibration Separation Mechanism and Experimental Study of Pigment of Chile Liu Yu et al. (7)

Fatigue Life Analysis of Spring Teeth of Double Rotor Horizontal Rotating Rake Wang Zeyun et al. (14)

Study on Vine Obstacle Avoidance Function and Arm Structure of Grape Automatic Picking Manipulator Yang Haotian et al. (19)

Research on the Control System of the Manipulator of Kiwi Fruit Picking Robot—Based on Computer Vision and Convolutional Neural Network
..... Feng Shuo et al. (25)

Design and Manufacture

Design and Experiment on the Key Components of Millet Combine Harvester Header Wang Rongxian et al. (30)

Development of Rice Intelligent Breeding System with Adaptive Ear Height Adjust Zhu Lin et al. (37)

Design and Experiment of 4LZ-2.4S Type Walking Mung Bean Combine Harvester Deng Xingxu et al. (43)

Design and Test of the Integrated Machine of Fertilization and Weeding Based on Driving Moment Shi Jinsong et al. (52)

Design and Test of the Peeling Device of Extruded Macadamia Nut Peeling Machine Wang Shuo et al. (60)

Design and Experiment of Green Zanthoxylum Harvesting and Branch-cutting Machine Based on Branch Picking
..... Song Shumin et al. (67)

Research on Automatic Line-to-Line Auxiliary Driving Control Technology of Intelligent Cotton Picker Miao Zhonghua et al. (72)

Design and Experiment of Vertical Rotary Cultivator Tang Wenbo et al. (77)

Design of Chain Drive Fault Monitoring System of Chain Harrow Residual Film Recycle Zhou Yabin et al. (82)

Development and Test of 2FC-7 Traction Manure Distribution Truck Zou Daozhong et al. (88)

Design and Test of Feeding Device of 4QZ-2200A Silage Machinel Zhao Bo et al. (93)

Experiment and Research

Operation Parameter Optimization and Experiment of Hydraulic Forced Vibration Subsoiling Monomer Li Mingjun et al. (97)

Design and Experiment of Double Cavity, Double Disc and Double Seeding Rows Pneumatic Precision Seed-metering Device
..... Chu Jinxing et al. (108)

Experimental Study on Influence of PWM Duty Cycle on Spray Drift Characteristics in Wind Tunnel Li Longlong et al. (118)

Mechanism and Test of Key Components of Reciprocating Grape Pruning Machine Huang Tao et al. (126)

Design and Experiment of Peanut Digging and Placing Machine Based on Two-stage Harvest Zheng Jinsong(133)

Analysis of Clogging of the Threshing Drum of Leymus Chinensis Seed Feeding Machine Ma Zongyu et al. (140)

Design Research and Simulation Experiment of a New Type of Agricultural Insect Radar Zhang Qingyue et al. (146)

Numerical Analysis and Experiment Validation of Orchard Sprayer Airflow Field Ou Mingxiong et al. (151)

Design and Test of Intelligent Seed Supply System for Air Suction Potato Planter Lv Jinqing et al. (157)

Potted *Phalaenopsis* Grading System and Flower Area Extraction Experiments Yang Yi et al. (162)

Structure Research and Design of Forestry Seedling Lifter Yang Teng et al. (167)

Application of New Technology

Design of Control System of Cotton Submembrane Precise Irrigation and Fertilization Based on PLC Shan Yongchao et al. (172)

Research on Remote Agricultural Machinery Design System Based on Java Interactive Page Li Zhen et al. (176)

Design of Intelligent Irrigation Control System Based on STM32 Liu Jun(181)

Application of Eddy Current Sensor in Tracking and Navigation of Harvester Liu Tingting et al. (185)

Design of Intelligent Garden Robot Management System —Based on Big Data Transmission Technology and Mobile Internet
..... Tang Xinmei et al. (189)

Electrical Control System of Machine Tool in Agricultural Machinery Parts Processing Based on PLC Li Lei et al. (193)

Feasibility Study on Applying Mathematical Morphology to Peanut Harvester Zhang Jinfang et al. (198)

Research on Operation Control of Rice Transplanter Based on Computer Network Technology She Lemo et al. (202)

Semantic Analysis of Adjectives for Plug Seeding Robot Control Bian Jie(206)

Application of 3D Virtual Simulation System in Farmland Visualization Liu Jie (209)

The Optimization of Greenhouse Environmental Parameters Based on Intelligent Data Mining Technology Zhang Chengyu (213)

Thermal Environment Simulation of Multi-layer Covered Integrated Solar Greenhouse Based on CFD Bai Guangyu et al. (218)

Environment and Energy Power Engineering

Optimization of Driving Performance of Ship Tractor Folded-face Impeller —Based on Vane Unit Zhang Chao et al. (222)

Development of Agricultural Machinery Self-driving Software System Based on Dynamic Path Search Cui Bingbo et al. (228)

Study on Energy Storage Matching for Garden Trimmer Based on Solar Energy Du Xinke (233)

Extensible HMI Interface and Interface Design of Multi Screen Linkage Tractor Wang Cuixia et al. (239)

Control of Linear Switched Reluctance Motor for Agricultural Electric Vehicle Based on Fuzzy PID Wei Hongfei et al. (244)

3D Modeling of Tractor Parts —Based on Intelligent Digital Media Art Design Guo Dongmei et al. (248)

Application Research on the Intelligent Driving System of Agricultural Tractor Xu Wenjing et al. (253)

Application of Signal Processing Technology in Unmanned Tractorr Yin Xiaoyi et al. (258)

Summary

Summary of Operation Service Status of Agricultural Plant Protection UAV in Heilongjiang Province Fu Dongxing et al. (262)