



QK1935866

# 中国农机化学报

全国中文核心期刊 中国农业核心期刊

中华人民共和国农业农村部主管  
农业农村部南京农业机械化研究所主办

ISSN 2095-5553



9 772095 555192

万方数据

2019

第40卷 总第305期

7

# 中国农机化学报

ZHONGGUO NONGJIHUA XUEBAO

2019年 第7期(第40卷)

## 目次

### 农业装备工程

- 旋转剪切式红花花丝采摘机械关键部件的设计 ..... 张振国,等 (1)
- 荞麦脱粒装置的设计及有限元分析 ..... 张建,等 (7)
- 全喂入式胡麻脱粒机机架模态分析与结构优化 ..... 史瑞杰,等 (13)
- 平贝收获机工作参数优化研究 ..... 马川,等 (19)
- 时针式喷灌机的发展现状及应用 ..... 祁亚卓 (25)
- 小麦精准施肥播种装置现状研究 ..... 孙春静,等 (30)
- 基于 MATLAB 的桃园剪枝机械臂运动学及工作空间分析 ..... 张楨,等 (35)

### 设施农业与植保机械工程

- 多功能观光温室结构加腋异型节点抗震性能研究 ..... 戴素娟,等 (40)
- 溴氰菊酯液滴在蕹菜叶面的接触角滞后性分析 ..... 金天澍,等 (45)

### 农产品加工工程

- 马铃薯田间集成分选机的研制 ..... 刘权磊,等 (52)
- 果仁色选机传送带速度控制系统研究 ..... 陈广大,等 (58)
- 开背大黄鱼去脏用鱼体仿形料槽设计研究 ..... 张军文,等 (63)
- 锤片式饲料粉碎机物料流道内的流场仿真分析 ..... 贺殿民,等 (68)
- 联合收割机清选装置中离心风机的现状及发展趋势 ..... 杜洪惠,等 (73)

### 车辆与动力工程

- 大功率拖拉机湿式离合器换挡液压试验台的设计 ..... 宋悦,等 (78)
- 叶片包角对双吸泵内部流场及水力性能的影响研究 ..... 高振军,等 (85)

### 农业电气化与信息化工程

- 基于新梢叶节距的苹果树叶片氮含量检测 ..... 刘双喜,等 (89)
- 基于特征融合和 SVM 的稻谷品种识别 ..... 李秀昊,等 (97)
- 复杂环境下森林火灾火焰局部纹理提取方法 ..... 冯丽琦,等 (103)
- S7-200 PLC 在 ZJ17 梗签分离控制系统中的应用 ..... 刘小川,等 (109)
- 播种机播种深度控制技术的研究进展 ..... 朱毅,等 (114)

### 农业智能化研究

- 基于机器视觉的枳壳自动定向方法与试验 ..... 尚志军,等 (119)

一种低成本航拍四旋翼农用无人机的设计 .....	姚蕾 (125)
分布式无线自动浇灌系统的设计 .....	卢超,等 (133)
基于 PLC 控制的马铃薯漏播检测装置设计 .....	赵晗,等 (141)
基于混合蚁群算法和变论域模糊控制的混肥系统设计 .....	吴琦,等 (146)
行距可调可折叠九行割台液压控制系统的开发 .....	曹翀,等 (151)

## 农业水利工程

中国绿肥研究知识图谱——基于 CiteSpace 的可视化分析 .....	李忠义,等 (157)
椭圆规挑膜捡拾机构的设计与参数优化 .....	李姝卓,等 (165)
免耕播种机秸秆粉碎输送降耗技术研究现状与展望 .....	姬广硕,等 (171)
基于 EDEM 离散元法的土肥混合过程分析 .....	赵春,等 (178)
污水悬浮物自动清除装置设计与仿真 .....	李武朝,等 (183)

## 农业机械化综合研究

大型联合收割机制造过程质量数据库构建研究 .....	李毅朗,等 (189)
宜机化整治地区油菜生产全程机械化作业体系研究 .....	湛小梅,等 (197)
乡村振兴战略背景下天津市高质量推进科技帮扶工作的思考 .....	姜岩,等 (204)
中国农产品加工业企业家才能的集聚与生产率测度——基于地理、行业与组织规模的协同效应 .....	张骏,等 (208)
基于模糊层次分析的农机企业精益管理实施效果评价 .....	万鹏,等 (215)
乡村建设主体与动力机制研究——以南京桦墅美丽乡村为例 .....	马涛,等 (221)
基于新疆地区的《农业机械学》课程改革与研究 .....	尤佳,等 (228)
玉米联合收获机使用质量评价研究 .....	张金霞 (232)

## 新闻稿

创新与装备助力蔬菜产业高质量发展——2019 中国蔬菜产业大会在宁夏隆重召开 .....	(236)
--	-------



# Journal of Chinese Agricultural Mechanization

Vol.40 NO.7 2019

## Contents

### Agriculture Mechanization and Equipment Engineering

- Design of critical components for safflower harvesting machinery by rotary shear ..... Zhang Zhenguo, et al (1)
- Design and finite element analysis of buckwheat threshing device ..... Zhang Jian, et al (7)
- Modal analysis and structural optimization of fully fed flax granulator rack ..... Shi Ruijie, et al (13)
- Study on optimization of working parameters of bulbous fritillariae ussuriensis harvester ..... Ma Chuan, et al (19)
- Status of development and application of center-pivot sprinkler ..... Qi Yazhuo (25)
- Research on present situation of precision fertilization and seeding device for wheat ..... Sun Chunjing, et al (30)
- Kinematics and workspace analysis of peach gardening pruning arm based on MATLAB ..... Zhang Zhen, et al (35)

### Facilities Agriculture and Plant Protection Machinery Engineering

- Study on seismic behavior of irregular joints with welded haunch in multi-purpose sightseeing  
greenhouse structures ..... Dai Sujuan, et al (40)
- Analysis of contact angle hysteresis of deltamethrin droplets on water spinach leaves surface ..... Jin Tianshu, et al (45)

### Agricultural Products Processing

- Development of integrated potato sorting machine ..... Liu Quanlei, et al (52)
- Research on speed control system for conveyor belt of nuts color sorter ..... Chen Guangda, et al (58)
- Design and research of shape-like feeding tank for scratching *Pseudosciaena crocea* ..... Zhang Junwen, et al (63)
- Simulation analysis of the flow field in the material flow passage of hammer type feed grinder ..... He Dianmin, et al (68)
- Current status and development trend of centrifugal fan in cleaning device of combine harvesters ..... Du Hongyong, et al (73)

### Vehicle and Power Engineering

- Design of hydraulic test bench for big-power wet clutch shifting tractor ..... Song Yue, et al (78)
- Impact analysis of wrapping angle of blade to the flow field and hydraulic performance  
of double suction pump ..... Gao Zhenjun, et al (85)

### Agricultural Electrification and Informationization Engineering

- Nitrogen content tests for apple tree leaves based on leaf node pitches of shoots ..... Liu Shuangxi, et al (89)
- Identification of rice variety based on multi-feature fusion and SVM ..... Li Xiuhao, et al (97)
- Method for extracting local texture of forest fire flame in complex environment ..... Feng Liqi, et al (103)
- Application of S7-200 PLC in the stem separation system of ZJ17 ..... Liu Xiaochuan, et al (109)
- Research progress on sowing depth control technology of planter ..... Zhu Yi, et al (114)

### Research on Agricultural Intelligence

- Automatic orientation method and experiment of *Fructus Aurantii* based on machine vision ..... Shang Zhijun, et al (119)
- Design of a low cost aerial photo four rotor agricultural UAV ..... Yao Lei (125)
- Design of distributed wireless automatic irrigation system ..... Lu Chao, et al (133)

Design of the potato missing detection system based on PLC control .....	Zhao Han, et al (141)
Design of water and fertilizer mixing system based on hybrid ant colony algorithm and variable domain fuzzy control .....	Wu Qi, et al (146)
Development of hydraulic control system with adjustable line spacing and foldable nine-row header .....	Cao Chong, et al (151)

### **Agricultural Soil and Water Engineering**

Knowledge mapping analysis of green manure research based on CiteSpace .....	Li Zhongyi, et al (157)
Design and parameter optimization of elliptical gauge picking mechanism for residue film .....	Li Shuzhuo, et al (165)
Current situation and prospect of research on straw pulverization and transportation technology of no-tillage planter for reducing consumption .....	Ji Guangshuo, et al (171)
Analysis of soil fertilizer mixing process based on EDEM discrete element method .....	Zhao Chun, et al (178)
Design and simulation of automatic sewage evacuation device .....	Li Wuzhao, et al (183)

### **Comprehensive Research**

Researchon construction of quality database for manufacturing process of large-scale combine harvester .....	Li Yilang, et al (189)
Study on mechanized operation system of rapeseed production in suitable for remediation areas .....	Zhan Xiaomei, et al (197)
Reflections on the high-quality promotion of science and technology assistance in Tianjin under the background of the rural revitalization strategy .....	Jiang Yan, et al (204)
Measurement of clustering and productivity of entrepreneurship in China's agricultural products processing industry: Synergies among territory, industry and organization .....	Zhang Jun, et al (208)
An effect evaluation of lean management implementation based on fuzzy AHP in agricultural machinery enterprises .....	Wan Peng, et al (215)
Rural construction subjects and impetus mechanism research as an example for taking beautiful Yeshe Village in Nanjing .....	Ma Tao, et al (221)
Reforming and researching about agricultural mechanics course based on Xinjiang region .....	You Jia, et al (228)
Study on quality evaluation of maize combine harvester .....	Zhang Jinxia (232)

### **News Release**

Innovation and equipment promote high quality development of vegetable industry: China Vegetable Industry Conference 2019 was convened in Ningxia .....	(236)
--	-------



中国农机化学报

(1957年创刊)

2019年第7期 第40卷 总第305期

月刊, 2019年7月15日

Journal of Chinese Agricultural Mechanization

(Started in 1957)

Vol.40 No.7 2019 Total 305

Monthly, Published in Jul. 15, 2019

主 管 中华人民共和国农业农村部  
主 办 农业农村部南京农业机械化研究所  
主 编 陈巧敏  
社 长 金诚谦  
副 主 编 凌小燕  
出 版 中国农机化杂志社  
编 辑 《中国农机化学报》编辑部  
(南京市柳营100号, 210014)  
印 刷 南京四彩印刷有限公司  
国内订阅 全国各地邮局  
国外发行 中国国际图书贸易集团公司  
(北京399信箱)

**Responsible Department:** Ministry of Agriculture and Rural Affairs of the PRC  
**Sponsored by:** Nanjing Research Institute for Agriculture Mechanization,  
Ministry of Agriculture and Rural Affairs  
**Editor in Chief:** Chen Qiaomin  
**President of Magazine Office:** Jin Chengqian  
**Deputy Editor in Chief:** Ling Xiaoyan  
**Published by:** Journal of Chinese Agricultural Mechanization editorial office  
(No. 100 Liuying, Nanjing, 210014, China)  
**Printed by:** Nanjing Sicai Printing Co., LTD  
**Subscribed by:** All local Post Offices in China  
**Issued abroad:** China International Book Trading Group  
(P.O. Box 399, Beijing, China)



万方数据

ISSN 2095-5553

CN 32-1837/S

网址: <http://zgnjhx.nriam.com>

电子信箱: [jcam@vip.163.com](mailto:jcam@vip.163.com)

邮发代号: 28-116

国外发行代号: BM5576

电话: 025-84346270

定价: 60.00元