

《中文核心期刊要目总览》收录
Ei Compendex(核心版)收录
百种中国杰出学术期刊
RCCSE中国权威学术期刊

2017. 21
第33卷 VOL. 33



ISSN 1002-6819
CN 11-2047/S
CODEN NGOXEO

农业工程学报

TRANSACTIONS OF THE CHINESE SOCIETY
OF AGRICULTURAL ENGINEERING

NONGYE
GONGCHENG
XUEBAO



ISSN 1002-6819



中国农业工程学会 主办

万方数据

农业工程学报

二〇一七年十一月

第三十三卷

第二十一期

中国农业工程学会

农业工程学报

2017 年 11 月第 21 期 总第 324 期 (第 33 卷)

目次

• 综合研究 •

中国秸秆养分资源及还田的时空分布特征 刘晓永, 李书田 (1)

• 农业装备工程与机械化 •

半喂入四行花生联合收获机弹指筛结构运行参数优化

..... 王冰, 胡志超, 彭宝良, 张延化, 顾峰玮, 施丽莉, 高学梅 (20)

嫁接机钢针顶起穴盘苗过程 EDEM 模拟验证及参数优化 高国华, 王凯, 孙晓娜 (29)

巨菌草种茎辊式排种器结构优化及排种动力学仿真与试验 郑书河, 林长山, 叶大鹏, 刘斌 (36)

稻秆与圆捆机钢辊间滑动摩擦特性试验 王德福, 江志国, 李百秋, 王国富, 蒋亦元 (44)

作业次序对深松旋耕联合作业机作业质量及功耗的影响 ... 郑侃, 何进, 李洪文, 陈黎卿, 胡宏男, 刘文政 (52)

并联驱动机械腿运动学静力学性能评价及几何参数设计 张金柱, 金振林, 张天浩 (61)

生物质混合燃料在柴油机喷嘴内流动特性模拟 耿莉敏, 王城, 魏有涛, 李琪 (70)

小功率非道路用柴油机动力、经济及排放特性 马志豪, 陈占耀, 贾义, 李亚楠, 马凡华 (78)

不同进气方式下气力提升泵水力特性理论模型与验证 左娟莉, 李逢超, 郭鹏程, 孙帅辉, 罗兴锜 (85)

孤网下水轮机 PID 调速器抗速度饱和研究 门闯社, 南海鹏, 关欣, 廖伟丽 (92)

• 农业航空工程 •

基于无人机图像分析的树木胸径预测 刘文萍, 仲亭玉, 宋以宁 (99)

• 农业水土工程 •

考虑生态的灌区水资源区间两阶段随机规划模型建立与应用 李晨洋, 于伟铭, 陈正锐, 曹梦珂, 郭婷婷 (105)

内蒙古宜耕沙地作物适宜性评价与节水灌溉方式配置

..... 范豫川, 闫旭东, 张宏飞, 逢好胜, 刘利宁, 王天舒, 李淑娟, 俞杨浏, 左强, 石建初 (115)

淮北平原旱涝急转条件下水稻减产规律分析 高芸, 胡铁松, 袁宏伟, 杨继伟 (128)

适宜穴播块数及种植密度促进黑膜垄作马铃薯节水增产

..... 王勇, 高应平, 党翼, 石玉章, 赵刚, 李雪瑛, 张建军, 吴永斌, 王磊 (137)

适宜滴灌施肥量促进河西春玉米根系生长提高产量	邹海洋, 张富仓, 张雨新, 陈东峰, 陆军胜, 郑 静 (145)
基于蒸腾模型决策的灌溉量对甜瓜产量及品质的影响	李建明, 樊翔宇, 闫芳芳, 李 惠, 蔡东升 (156)
加气灌溉改善温室番茄根区土壤通气性	朱 艳, 蔡焕杰, 宋利兵, 陈 慧 (163)
OLI 与 HSI 影像融合的土壤盐分反演模型	厉彦玲, 赵庚星, 常春艳, 王卓然, 王 凌, 郑佳荣 (173)
基于离散元的西北旱区农田土壤颗粒接触模型和参数标定	石林榕, 赵武云, 孙 伟 (181)
斥水程度对脱水土壤水分特征曲线的影响	陈俊英, 刘 畅, 张 林, 向友珍, Leonid Gillerman, 柴红阳 (188)
基于改进径流曲线数模型的北京密云坡地径流估算	焦 剑, 宋伯岩, 王世雷, 王奋忠, 张 婷 (194)

• 农业信息与电气技术 •

基于智能手机的棉花苗情调查与决策支持系统	戴建国, 王守会, 赖军臣, 赵庆展, 马富裕 (200)
基于时间序列叶面积指数傅里叶变换的作物种植区域提取	王鹏新, 荀 兰, 李 俐, 解 毅, 王 蕾 (207)
基于矿物元素指纹图谱的黑龙江黄豆产地溯源	鹿保鑫, 张东杰 (216)

• 农业生物环境与能源工程 •

废气自循环利用生物质炭化装备设计与性能研究	缪 宏, 江 城, 梅 庆, 张善文, 张燕军 (222)
糠醛渣和废菌棒的热解气化多联产再利用	成 亮, 周建斌, 章一蒙, 田 霖, 马欢欢, 宋建忠, 张齐生 (231)
基于 LCA 的秸秆沼气集中供气工程环境影响评价	王红彦, 王亚静, 高春雨, 王道龙, 覃 诚, 毕于运 (237)
鲍放养密度对循环水养殖水质的影响及生物滤器净化效果	高霄龙, 刘 鹰, 李 贤, 李文亚, 徐建平, 郝静薇 (244)

• 土地整理工程 •

高潜水位采煤沉陷区土地损毁程度评价	程琳琳, 赵云肖, 陈 良 (253)
-------------------------	---------------------

• 农产品加工工程 •

蜂王浆三针夹取式拣虫机的设计与试验	王明旭, 李建永, 高兴华, 罗春阳, 杨 泽 (261)
不同工艺参数下苜蓿草粉环模制粒机流场的模拟与验证	王咏梅, 黄晓鹏, 吴劲锋 (267)
基于电子鼻传感器阵列优化的甜玉米种子活力检测	张婷婷, 孙 群, 杨 磊, 杨丽明, 王建华 (275)
基于温度感知 RFID 标签的冷链厢体中温度监测	钱建平, 范蓓蕾, 张 翔, 杜晓伟, 孙立涛, 王以忠 (282)
预糊化条件对萌芽糙米蒸煮质构特性及品质的影响	刘庆庆, 朱松明, 张 洁, 于 勇 (289)
基于 CFD 数值模拟的豆腐干软罐头杀菌工艺优化	王 磊, 邓 力, 李慧超, 彭 静, 何聪颖, 徐 嘉 (298)
磁性壳聚糖微球吸附苹果汁有机酸的动力学及热力学特性	姜飞虹, 袁亚宏, 任婷婷, 孟捍琴, 岳田利 (307)

Transactions
of the Chinese Society of Agricultural Engineering
Vol.33 No.21 Nov. 2017
CONTENTS

• Comprehensive Research •

Temporal and spatial distribution characteristics of crop straw nutrient resources and returning to farmland in China

..... *Liu Xiaoyong, Li Shutian* (1)

• Agricultural Equipment Engineering and Mechanization •

Structure operation parameter optimization for elastic steel pole oscillating screen of semi-feeding four rows peanut combine harvester *Wang Bing, Hu Zhichao, Peng Baoliang, Zhang Yanhua, Gu Fengwei, Shi Lili, Gao Xuemei* (20)

Verification for EDEM simulation of process of jacking tray-seedling by steel needle in grafting machine and parameter optimization *Gao Guohua, Wang Kai, Sun Xiaona* (29)

Structural optimization of grooved-roller seed metering device for *Pennisetum* and simulation and experiment of seed metering dynamics *Zheng Shuhe, Lin Changshan, Ye Dapeng, Liu Bin* (36)

Experiment on sliding friction characteristics between rice straw and baler steel-roll

..... *Wang Defu, Jiang Zhiguo, Li Baiqiu, Wang Guofu, Jiang Yiyuan* (44)

Influence of working order on working quality and power consumption of subsoiling and rotary tillage combined machine

..... *Zheng Kan, He Jin, Li Hongwen, Chen Liqing, Hu Hongnan, Liu Wenzheng* (52)

Kinematic/static performance evaluation and geometric parameter design of parallel-driving leg mechanism

..... *Zhang Jinzhu, Jin Zhenlin, Zhang Tianhao* (61)

Simulation on internal flow characteristics of nozzle for diesel engine fueled with biomass blend fuel

..... *Geng Limin, Wang Cheng, Wei Youtao, Li Qi* (70)

Power, economy and emission characteristics of low power non-road diesel

..... *Ma Zhihao, Chen Zhanyao, Jia Yi, Li Yanan, Ma Fanhua* (78)

Theoretical model and verification of hydraulic characteristics of air lift pump under different air injection methods

..... *Zuo Juanli, Li Fengchao, Guo Pengcheng, Sun Shuaihui, Luo Xingqi* (85)

Study on anti-speed saturation of PID governor for isolated hydraulic turbines

..... *Men Chuangshe, Nan Haipeng, Guan Xin, Liao Weili* (92)

• Agricultural Aviation Engineering •

Prediction of trees diameter at breast height based on unmanned aerial vehicle image analysis

..... *Liu Wenping, Zhong Tingyu, Song Yining* (99)

• Soil and Water Engineering •

Two-stage interval parameters water resources model considering ecology and application in irrigation district

..... *Li Chenyang, Yu Weiming, Chen Zhengrui, Cao Mengke, Guo Tingting* (105)

Suitable evaluation for crops and water-saving irrigation methods for arable sandy land in Inner Mongolia

..... *Fan Yuchuan, Yan Xudong, Zhang Hongfei, Pang Haosheng, Liu Lining,
Wang Tianshu, Li Shujuan, Yu Yangliu, Zuo Qiang, Shi Jianchu* (115)

Analysis on yield reduced law of rice in Huaibei plain under drought-flood abrupt alternation

..... *Gao Yun, Hu Tiesong, Yuan Hongwei, Yang Jiwei* (128)

Suitable bunch pieces and planting density saving water and increasing yield of potato with black plastic film mulching and ridge planting in dryland

..... *Wang Yong, Gao Yingping, Dang Yi, Shi Yuzhang, Zhao Gang, Li Xueying, Zhang Jianjun, Wu Yongbin, Wang Lei* (137)

Optimal drip irrigation and fertilization amount enhancing root growth and yield of spring maize in Hexi region of China

..... *Zou Haiyang, Zhang Fucang, Zhang Yuxin, Chen Dongfeng, Lu Junsheng, Zheng Jing* (145)

Effect of different irrigation amount based on transpiration model on yield and quality of muskmelon

..... *Li Jianming, Fan Xiangyu, Yan Fangfang, Li Hui, Cai Dongsheng* (156)

Oxygation improving soil aeration around tomato root zone in greenhouse

..... *Zhu Yan, Cai Huanjie, Song Libing, Chen Hui* (163)

Soil salinity retrieval model based on OLI and HSI image fusion

..... *Li Yanling, Zhao Gengxing, Chang Chunyan, Wang Zhuoran, Wang Ling, Zheng Jiarong* (173)

Parameter calibration of soil particles contact model of farmland soil in northwest arid region based on discrete element method

Shi Linrong, Zhao Wuyun, Sun Wei (181)

Impact of repellent levels on drainage soil water characteristic curve

..... *Chen Junying, Liu Chang, Zhang Lin, Xiang Youzhen, Leonid Gillerman, Chai Hongyang* (188)

Runoff estimation for hillslope land in Miyun based on improved model of soil conservation service curve number

..... *Jiao Jian, Song Boyan, Wang Shilei, Wang Fenzhong, Zhang Ting* (194)

• Agricultural Information and Electrical Technologies •

Cotton growth statuses investigation and decision support system based on smartphone

..... *Dai Jianguo, Wang Shouhui, Lai Junchen, Zhao Qingzhan, Ma Fuyu* (200)

Extraction of planting areas of main crops based on Fourier transformed characteristics of time series leaf area index products

..... *Wang Pengxin, Xun Lan, Li Li, Xie Yi, Wang Lei* (207)

Origin traceability of Heilongjiang soybean using fingerprint of mineral elements

Lu Baoxin, Zhang Dongjie (216)

• Agricultural Bioenvironmental and Energy Engineering •

Design and performance of waste gas self-circulation biomass carbonization equipment

..... *Miao Hong, Jiang Cheng, Mei Qing, Zhang Shanwen, Zhang Yanjun* (222)

Re-utilization of furfural residues and wasted mushroom inoculation bags by multi-production gasification technology

..... *Cheng Liang, Zhou Jianbin, Zhang Yimeng, Tian Lin, Ma Huanhuan, Song Jianzhong, Zhang Qisheng* (231)

Environment impact evaluation of straw biogas project for central gas supply based on LCA

..... *Wang Hongyan, Wang Yajing, Gao Chunyu, Wang Daolong, Qin Cheng, Bi Yuyun* (237)

Effects of stocking density on water quality of *Haliothis discus hannai* Ino in recirculating aquaculture and purification effect of biofilter *Gao Xiaolong, Liu Ying, Li Xian, Li Wenya, Xu Jianping, Hao Jingwei* (244)

• Land Consolidation and Rehabilitation Engineering •

Evaluation of land damage degree of mining subsidence area with high groundwater level
..... *Cheng Linlin, Zhao Yunxiao, Chen Liang* (253)

• Agricultural Produce Processing Engineering •

Design and test of three-pin clip-picking royal jelly larvae sorting machine
..... *Wang Mingxu, Li Jianyong, Gao Xinghua, Luo Chunyang, Yang Ze* (261)

Numerical simulation and verification of flow field in ring die pellet mill at different process parameters for alfalfa
..... *Wang Yongmei, Huang Xiaopeng, Wu Jinfeng* (267)

Vigor detection of sweet corn seeds by optimal sensor array based on electronic nose
..... *Zhang Tingting, Sun Qun, Yang Lei, Yang Liming, Wang Jianhua* (275)

Temperature monitoring in cold chain chamber based on temperature sensing RFID labels
..... *Qian Jianping, Fan Beilei, Zhang Xiang, Du Xiaowei, Sun Litao, Wang Yizhong* (282)

Effects of parboiling conditions on cooking properties, textural properties and quality characters of germinated brown rice
..... *Liu Qingqing, Zhu Songming, Zhang Jie, Yu Yong* (289)

Optimization of sterilization process of retort pouch tofu cake based on CFD numerical simulation
..... *Wang Lei, Deng Li, Li Huichao, Peng Jing, He Congying, Xu Jia* (298)

Adsorption kinetics and thermodynamics characters of organic acids from apple juice by magnetic chitosan microspheres
..... *Jiang Feihong, Yuan Yahong, Ren Tingting, Meng Diaoqin, Yue Tianli* (307)