

TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL ENGINEERING 《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







中国稿品科技期刊

ISSN 1002-6819 CN 11-2047/S CODEN NGOXEO www.tcsae.org



NONGYE GONGCHENG XUEBAO HAGRICULTURAL ENGINEERING 2022年(第38巻 VOL. 38



中国农业工程学会

农业工程学报

2022 年 3 月第 5 期 (总第 429 期) 第 38 卷

目 次

农业装备工程与机械化・

基于北斗的农机作业大数据系统构建

农业水土工程・

滴头堵塞程度分级和评价及堵塞风险预测方法…………………………………………… 董爱红,张文倩,张二信,王彦邦,牛文全(56) 旋转式喷头空间流道设计及低压水力性能试验…………………………………………………………………………刘俊萍,李 红,张 前,李一鸣(65) 磷素添加对土壤水分一维垂直入渗特性的影响……………………………………………………………………曲 植,李 健,李铭江,陆江岳(72) 基于特征线法的含气输水管道水锤特性分析 …………… 张巧玲,黄铋匀,杨振东,严 悦,李国栋,郭利豪(79) 基于模型平均法的表层土壤含水率多模型综合反演 ………………………… 王思楠,李瑞平,吴英杰,赵水霞,王秀青(87) 不同物料配施对微咸水灌溉黄瓜土壤质量及产量的影响 降解周期可调控的甘蔗渣生物降解地膜的增温保墒性能分析 ………………… 李丽霞,秦 淘,张付杰,陈星智(112) 原位酶谱技术分析旱地长期覆盖下根际酶活性空间分布 ……………黄冬琳,同斯捷,岳 良,李 彦,张雪辰,郑 伟,王朝辉,张绪成,翟丙年,李紫燕(123) 黄淮海北部地区夏玉米稳产高产的播期优选 农业信息与电气技术。 基于姿态与时序特征的猪只行为识别方法

基于时空滤波 Sentinel-1 时序数据的田块尺度岭南作物分布提取

农业生物环境与能源工程。

设施内 PBAT/秸秆基地膜降解特性及对番茄生长的影响

土地保障与生态安全・

近 20 年海南省耕地林果化的时空分异及驱动因素分析

	杨绪红,	金明	尧斌,	贾培宏	, 范	包:	渊,	顾铮鸣,	周寅	康	(233)
转型期	用矿业乡村综合效能评价及障碍诊断	田	超,	程琳琳	к, Э	E义:	方,	孙海元,	殷婷	婷	(241)
陕西シ	关中农业现代化时空分异特征	龙,	小翠,	凌莉	Ī, 文	(I)	京,	徐仲炜,	尉	芳	(250)

.

•农产品加工工程•

・专题论坛・

新疆高温热浪的人口与耕地暴露度研究 ………………………………………………………董弟文, 陶 辉, 丁 刚, 张增信(288) 基于双层数据分解混合模型预测鄱阳湖 COD

..... 陈 伟,金柱成,俞真元,王晓丽,彭士涛,朱 哲,魏燕杰 (296)

•研究速报•

6-苄基腺嘌呤对大豆内部水分分布及其生长状态的影响…………… 顾 莹,陈 毅,岳 霞,程恩思,宋 平 (303) 致谢:感谢新疆农业大学张学军团队提供的封面图片 "棉花精量铺膜智能播种机春播作业场景"

Transactions of the Chinese Society of Agricultural Engineering Vol.38 No.5 (Total No.429) Mar. 2022 CONTENTS

• Agricultural Equipment Engineering and Mechanization •

Construction of big data system of agricultural machinery based on BeiDou Wan Chuanfeng, Li Guangyuan, Huang Jiahua, Tian Weize, Fan Xuefeng, Tan Lujun, Su Chunhua (1) Design and experiments of seed pickup status monitoring system for cotton precision dibblersZhang Xuejun, Zhang Haitao, Shi Zenglu, Jin Wei, Chen Yong, Yu Yongliang (9) Effects of mechanical direct seeding synchronous deep fertilization on winter rapeseed stem lodging resistance and yield Chen Hui, Gao Liping, Chen Yong, Lin Jianxin, Liao Yitao, Liao Qingxi (20) Design and test of a coreless-roll packing device for residual film Wang Xuenong, Liu Jie, Liu Xuanfeng, Jiang Yongxin, Zhang Haichun, Zhang Jiaxi, Zhang Li (28) Numerical investigation on transient characteristics of self-priming process in a centrifugal pump using opening boundary conditions Chen Weisheng, Li Yaojun, Liu Zhuqing (36) Axial piston pump fault diagnosis under variable working conditions based on feature transfer learning Jiang Wanlu, Yue Yi, Zhang Shuqing, Ma Jun, Ma Xinyu, Zou Jiayun (45) Soil and Water Engineering • Classification and evaluation of emitter clogging degree and prediction method of emitter clogging risk

Space flow channel design of rotary sprinkler and hydraulic performance experiments at low pressure

Liu Junping, Li Hong, Zhang Qian, Li Yiming (65)

Effects of phosphorus addition on one-dimensional vertical infiltration characteristics of soil water

Water hammer properties of gas-bearing water pipeline using characteristics methodZhang Qiaoling, Huang Biyun, Yang Zhendong, Yan Yue, Li Guodong, Guo Lihao (79) Multi-model comprehensive inversion of surface soil moisture based on model averaging method Wang Sinan, Li Ruiping, Wu Yingjie, Zhao Shuixia, Wang Xiuqing (87) Effects of different materials on soil quality and yield of cucumber under brackish irrigation Wei Yanfeng, Shen Jiali, An Mingyuan, Lan Zhengfang, Yin Cui, Tian Yongqiang, Cao Yun'e (95) Evaluation of the heat pulse method for determining evaporation of a red soil in southern China Zhang Mouhui, Tian Zhengchao (105) Performance analysis of temperature increasing and moisture retaining of sugarcane bagasse biodegradable film with adjustable degradation cycleLi Lixia, Oin Tao, Zhang Fujie, Chen Xingzhi (112) Spatial distribution of enzyme activities in rhizosphere soil under long-term mulching of dryland with in-situ zymography Wang Zhaohui, Zhang Xucheng, Zhai Bingnian, Li Ziyan (123) Suitable sowing date for stable and high yield of summer maize in the northern region of Huang-Huai-Hai, China Liu Jiahong, He Qijin, Guan Yue, Su Cheng, Yang Su, Qin Zhiheng, Mi Xinyuan, Pan Xuebiao, Tang Xinning, Yan Mengling (131) Characteristics of soil nitrogen and phosphorus nutrients in different Pisha sandstone areas Li Xuefeng, Rao Liangyi, Xu Yeqin (139)

Agricultural Information and Electrical Technologies

Recognizing pig behavior on posture and temporal features using computer vision
Dong Lizhong, Meng Xiangbao, Pan Ming, Zhu Yi, Liang Yubin, Gao Xiang, Liu Honggang (148)
Extracting field-scale crop distribution in Lingnan using spatiotemporal filtering of Sentinel-1 time-series data
Qian Lisha, Jiang Hao, Chen Shuisen, Li Dan, Wang Chongyang, Chen Jinyue, Dai Xuemei (158)
Extracting navigation line to detect the maize seedling line using median-point Hough transform
Li Xia, Su Junhao, Yue Zhenchao, Wang Sichao, Zhou Haibo (167)
Heterologous sources images in the apple orchard registration method using EM-PCNN

Zhou Yubo, Liu Liqun (175)

• Agricultural Bioenvironmental and Energy Engineering •

PBAT/straw based mulching film degradation characteristics and effect on tomato growth in facilities			
Wang Min, Xu Lei, Yan Nina, Jiang Xizhi, Feng Min, Zhang Xiaomei, Chen Gang, Xu Cunfa (184)			
Enhanced phosphorus recovery from biogas slurry by biochar of straw with Mg/La oxide			
Ma Yanru, Meng Haibo, Shen Yujun, Ding Jingtao, Zhou Haibin,			
Zhang Pengyue, Zhu Ming, Niu Zhiyou, Ai Ping (194)			
Effects of biochar from Cd-containing rice straw on stabilization of Cd in soils			
Biomimetic co-culture of rumen fungi and Saccharomyces cerevisiae to improve ethanol production from straw fermentation			
Tong Jin, Ma Yunhai, Ren Luquan (212)			
Analysis of the performance of the oval tube arch of single-tube solar greenhouses			
Yan Dongmei, Hu Lin, Zhou Changji, Yan Junyue (217)			
Effects of fixed - point air supply cooling system on airflow and temperature around sows and convective heat transfer of sows			
Zhang Xiaojun, Wang Hua, Long Shenfei, Wu Zhenlong, Wang Meizhi,			
Chen Zhaohui, An Jie, Wang Fengjun, Feng Guangjun (225)			

• Land Security and Ecological Safety •

Spatial-temporal variation and driving factors of cropland conversion to forest or fruit production in Hainan Province during
2000-2020
Comprehensive effectiveness evaluation and obstacle diagnosis of mining villages in the transition period
Tian Chao, Cheng Linlin, Wang Yifang, Sun Haiyuan, Yin Tingting (241)
Spatiotemporal differentiation characteristics of agricultural modernization in Guanzhong Plain
Long Xiaocui, Ling Li, Liu Jing, Xu Zhongwei, Wei Fang (250)

• Agricultural Produce Processing Engineering •

• Special Forum •

Historical population and cropland exposure to heatwaves in Xinjiang, China

COD forecasting of Poyang lake using a novel hybrid model based on two-layer data decomposition

..... Chen Wei, Kim Jusong, Yu Jinwon, Wang Xiaoli, Peng Shitao, Zhu Zhe, Wei Yanjie (296)

• Reseach Letters •

Effects of 6-Benzylaminopurine on internal water distribution and growth state of soybean

..... Gu Ying, Chen Yi, Yue Xia, Cheng Ensi, Song Ping (303)