

International Journal of Agricultural and Biological Engineering (IJABE)

Open Access at <https://www.ijabe.org>

Table of Contents

Volume 17, Number 3, June, 2024

Overview Articles (OA)

Review of the detasseling techniques for maize (*Zea mays* L.) hybrid seed production

..... Ruirui Zhang, Jiakuan Yang, Liping Chen, Chenchen Ding, Longlong Li, Linhuan Zhang (1)

Applied Science, Engineering and Technology (ASET)

Geometric based apple suction strategy for robotic packaging

..... Zhong Wang, Qingyu Wang, Mingzhao Lou, Fan Wu, Yaonan Zhu, Dong Hu, et al. (12)

Rice stem lodging properties and bending modeling under the influence of circadian temperature difference

..... Bangzhui Wang, Zhong Tang, Liyun Lao, Guoqiang Wang, Tiantian Jing, Yao Yu (21)

Parameter calibration of discrete element model for alfalfa seeds based on EDEM simulation experiments

..... Xinjiu Zhang, Hongti Wang, Fangyan Wang, Zhengguo Lian (33)

Analysis of the mechanical transfer characterization between lodged sugarcane and the cutter by simulation modeling with UMAT subroutine

..... Tao Liu, Qingqing Wang, Jiaxun He, Dongbo Xie, Zhipeng Liu, Lichao Liu, et al. (39)

Impacts of surfactant-based adjuvants on spray droplet size, drift distance, and deposition efficiency

..... Changwei Gong, Yue Liu, Yu Ma, Qiulin Wang, Zhengze Xu, Xuegui Wang, et al. (50)

Animal, Plant and Facility Systems (APFS)

Bicarbonate used as a buffer for controlling nutrient solution pH value during the growth of hydroponic lettuce

..... Mengxue Zhang, Wenxin Wang, Luming Zhong, Fang Ji, Dongxian He (59)

Experimental research on the microclimate in the naturally ventilated multi-span greenhouse

..... Zhenjun Gao, Wenyang Li, Wei Li, Xiaoming Ding (68)

Optimizing the utilization of maize silage in forage blends-based rations to improve production performance and reduce methane emissions from fattening calves

..... Khalid Farooq, Asad Sultan, Assar Ali Shah, Rifat Ullah Khan, Rajwali Khan, Ghazala Yasmeen, et al. (75)

Power and Machinery Systems (PMS)

Simulation and structural parameter optimization of rotary blade cutting soil based on SPH method

..... Xiongye Zhang, Xue Hu, Lixin Zhang, Abdalla Nouredin Osman Kheiry (82)

Design and experimental research on the sweet potato seedling transplanting mechanism of the planetary gear train with deformed elliptical gear transmission

..... Bingliang Ye, Yuxuan Ye, Haili Zhou, Gaohong Yu, Xiong Zhao, Bin Deng (91)

Optimization and experimental analysis of sweet potato ship-shaped transplanting trajectory using particle swarm algorithm

..... Zhengduo Liu, Lin Hua, Zhaoqin Lyu, Jiaji Hu, Wenxiu Zheng (100)

Design and initial testing of a maize cob collection system

..... Bojan Dolšak, Anita Breznik, Klemen Kaučič, Nataša Imenšek, Marko Marčec, Peter Gselman, et al. (108)

Structural parameter optimization of a furrow opener based on EDEM software

..... Longjie Wang, Bin Zhou, Chang Wan, Ling Zhou (115)

Natural Resources and Environmental Systems (NRES)

Effects of warming and drought stress on the growth characteristics, photosynthetic-transpiration rates, and yield of winter wheat

..... Qian Li, Yang Gao, Abdoul Kader Mounkaila Hamani, Guangshuai Wang, Junming Liu, Yuanyuan Fu, et al. (121)

Influences of mechanized tillage and sowing modes on soil physical properties, soybean yield and economic benefits in mollisols region of Northeast China

Haitao Chen, Jian Sun, Yiming Zhang, Jinyou Qiao (130)

Comparison of the capacity of biological desulfurization of *Thiobacillus ferrooxidans* from different sulfur-containing substrates with or without additional ferrous iron

..... Yanjin Wang, Xiaopeng Chang, Hongge Tao, Zhenfeng Wang, Quanguo Zhang (140)

Information Technology, Sensors and Control Systems (ITSCS)

Inversion of maize leaf nitrogen using UAV hyperspectral imagery in breeding fields

..... Qiwen Cheng, Bingsun Wu, Huichun Ye, Yongyi Liang, Yingpu Che, Anting Guo, et al. (144)

Detection of the farmland plow areas using RGB-D images with an improved YOLOv5 model

..... Jiangtao Ji, Zhihao Han, Kaixuan Zhao, Qianwen Li, Shucan Du (156)

Low-cost portable dielectric spectrometer based on mini-vector network analyzer and open-ended coaxial probe technology

Zhuozhuo Zhu, Xinhua Zhu, Wenchuan Guo (166)

Optimal combination of the correction model and parameters for the precision geometric correction of UAV hyperspectral images

Wenzhong Tian, Za Kan, Qingzhan Zhao, Ping Jiang, Xuewen Wang, Hanqing Liu (173)

Fast detection of the early decay in oranges using visible-LED structured-illumination imaging combined with spiral phase transform and feature-based classification model

..... Zhonglei Cai, Chanjun Sun, Yizhi Zhang, Ruiyao Shi, Junyi Zhang, Hailiang Zhang, et al. (185)

Cow-YOLO: Automatic cow mounting detection based on non-local CSPDarknet53 and multiscale neck

..... De Li, Junhao Wang, Zhe Zhang, Baisheng Dai, Kaixuan Zhao, Weizheng Shen, et al. (193)

Novel method for the recognition of Jinnan cattle action using bottleneck attention enhanced two-stream neural network

..... Wangli Hao, Meng Han, Kai Zhang, Li Zhang, Wangbao Hao, Fuzhong Li, et al. (203)

Method for the classification of tea diseases via weighted sampling and hierarchical classification learning

..... Rujia Li, Weibo Qin, Yiting He, Yadong Li, Rongbiao Ji, Yehui Wu, et al. (211)

Method for the multi-view estimation of fish mass using a two-stage neural network with edge-sensitive module

..... Zeyu Jiao, Yingjie Cai, Qi Zhang, Zhenyu Zhong (222)

Renewable Energy and Material Systems (REMS)

Chemical composition evaluation and pyrolysis behavior of biomass tar: Pyrolysis experiment and kinetic studies

..... Weijuan Lan, Yunlong Zhou, Jiabin Liu, Yingxian Wang, Dongxue Yin, Jiangtao Ji, et al. (230)

Feasible strategy for the nitrogen fixation and humification quality improvement by spent mushroom substrate as conditioning agent

Shuang Ai, Yuanbei Zhang, Guoxiang Zheng (235)

Agro-product and Food Processing Systems (AFPS)

Effects of the addition of edible polysaccharides on the properties of soybean protein isolate gels

..... Chonghao Bi, Aoxue Qie, Xueying Wang, Tong Zhou, Shangyi Chi, Yi Liu, et al. (241)

Effects of the extrusion and enzymatic extrusion treatment on the apparent viscosity of degerminated maize grits

..... Mingming Qi, Dongliang Zhang, Chengqian Jin, Shanfeng Chen, Hongjun Li, Chengye Ma (249)

Cover Captions

Rice stem lodging at varying diurnal temperature for smart harvesting from the Intelligent Harvesting Equipment Team at Jiangsu University

(Cover)

Welcome to publish with IJABE (JIF 2.2) in Q2

(Back Cover)

Information

Fourth-term IJABE International Editorial Board

(Front Insert I)