

International Journal of Agricultural and Biological Engineering (IJABE)

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

Table of Contents

Volume 14, Number 4, July, 2021

Overview Articles (OA)

- Development status and trend of agricultural robot technology
..... Yucheng Jin, Jizhan Liu, Zhujie Xu, Shouqi Yuan, Pingping Li, Jizhang Wang (1)
- Review of conceptual and systematic progress of precision irrigation
..... Zhongwei Liang, Xiaochu Liu, Jinrui Xiao, Changhong Liu (20)
- Review of research progress on soil moisture sensor technology
..... Limin Yu, Wanlin Gao, Redmond R. Shamshiri, Sha Tao, Yanzhao Ren, Yanjun Zhang, et al. (32)

Applied Science, Engineering and Technology (ASET)

- Performance evaluation of a multi-rotor unmanned agricultural aircraft system for chemical application
..... Hang Zhu, Hongze Li, Anderson P. Adam, Liujun Li, Lei Tian (43)
- Influence of nozzle enabling strategy on spray deposition of crop protection unmanned aerial system
..... Wei Gu, Xinyu Xue, Chen Chen, Qingqing Zhou, Songchao Zhang, Bin Peng (53)
- Hanging force analysis for realizing low vibration of grape clusters during speedy robotic post-harvest handling
..... Muhammad Faheem, Jizhan Liu, Guozheng Chang, Ibrar Ahmad, Yun Peng (62)
- Contact parameter analysis and calibration in discrete element simulation of rice straw
..... Honglei Jia, Jiayu Deng, Yanling Deng, Tianyou Chen, Gang Wang, Zaijin Sun, et al. (72)
- Model construction for field operation machinery selection and configuration in wheat-maize double cropping system
..... Fu Zhang, Tianhua Chen, Shuai Teng, Jiajia Wang, Ruiliang Xu, Zhijun Guo (82)

Animal, Plant and Facility System (APFS)

- Estimated viability of greenhouse cooling technologies for growing a tomato crop under various climates
..... Yating Yang, Shirong Guo, Yongsheng Chen (90)
- Effects of water and salt coordinated regulation at the different growth stages on water consumption and yield of tomato
..... Weihua Wang, Yidan Gong (96)
- Performance evaluation of mechanical blossom thinning in trunk type pear orchard
..... Xiaohui Lei, Xiaolan Lyu, Meina Zhang, Daipeng Lu, Shilin Wang, Youhong Chang, et al. (106)

Power and Machinery Systems (PMS)

- Design and experimental analysis of rice pneumatic seeder with adjustable seeding rate
..... He Xing, Zaiman Wang, Xiwen Luo, Ying Zang, Siyu He, Peng Xu, et al. (113)
- Design and experiment of bionic stubble breaking-deep loosening combined tillage machine
..... Jiale Zhao, Yun Lu, Mingzhuo Guo, Jun Fu, Yijia Wang (123)
- Design and experiment of vertical pneumatic fertilization system with spiral Geneva mechanism
..... Haibo Chen, Jingfu Zheng, Shaojie Lu, Shan Zeng, Silong Wei (135)
- Pneumatic webbed soft gripper for unstructured grasping
..... Shibo Cai, Chun'e Tang, Lufeng Pan, Guanjuan Bao, Wenyu Bai, Qinghua Yang (145)

- Effects of cutter parameters on shearing stress for lettuce harvesting using a specially developed fixture
 Yongjie Cui, Wenqi Wang, Minghui Wang, Yidong Ma, Longsheng Fu (152)
- Performance analysis of a spring-tooth drum pickup of straw baler via coupling simulation
 Qingqing Wang, Yongcheng Jiang, Lianhao Li, Junwei Qin, Liqing Chen (159)
- Design and experiment of a hydraulic lifting wind field test platform for crop protection UAS
 Songchao Zhang, Wei Gu, Baijing Qiu, Xinyu Xue, Lixin Zhou (166)

Natural Resources and Environmental Systems (NRES)

- Improving harvest efficiency of maize varieties via accumulated temperature in a certain planting area
 Zhaofu Huang, Liangyu Hou, Jun Xue, Keru Wang, Ruizhi Xie, Peng Hou, et al. (175)
- Effects of initial soil moisture content on soil water and nitrogen transport under muddy water film hole infiltration
 Lihua Liu, Liangjun Fei, Lin Chen, Kun Hao, Quanju Zhang (182)

Information Technology, Sensors and Control Systems (ITSCS)

- Recognition of weeds at asparagus fields using multi-feature fusion and backpropagation neural network
 Yafei Wang, Xiaodong Zhang, Guoxin Ma, Xiaoxue Du, Naila Shaheen, Hanping Mao (190)
- Multi-target pig tracking algorithm based on joint probability data association and particle filter
 Longqing Sun, Yiyang Li (199)
- Design and experiment of intelligent sorting and transplanting system for healthy vegetable seedlings
 Mingyong Li, Xin Jin, Jiangtao Ji, Pengge Li, Xinwu Du (208)
- Autonomous detection of crop rows based on adaptive multi-ROI in maize fields
 Yang Zhou, Yang Yang, Boli Zhang, Xing Wen, Xuan Yue, Liqing Chen (217)
- Measurement of the distance from grain divider to harvesting boundary based on dynamic regions of interest
 Jin Chen, Jie Song, Zhuohuai Guan, Yi Lian (226)
- Cost-effective method for degradability identification of MSW using convolutional neural network for on-site composting
 Jingjing Huang, Sihui Dai, Heming Hu, Hongduo Zhang, Jingxin Xie, Ming Li (233)
- Enhanced Mask R-CNN for herd segmentation
 Rotimi-Williams Bello, Ahmad Sufril Azlan Mohamed, Abdullah Zawawi Talib (238)

Renewable Energy and Material Systems (REMS)

- Airflow field simulation model building and application for aerobic compost using CFD
 Qiongyi Cheng, Haibo Meng, Haibin Zhou, Yujun Shen, Hongsheng Cheng, Jingtao Ding, et al. (245)

Agro-product and Food Processing Systems (AFPS)

- Optimization of hot-air microwave combined drying control system based on air outlet temperature and humidity monitoring
 Fujie Zhang, Anqi'er Hu, Ruikai Song, Lixia Li (255)
- Prediction of salmon (*Salmo salar*) quality during refrigeration storage based on dielectric properties
 Jialing He, Feng Li, Yang Jiao (262)
- Prediction and evaluation method of TVB-N values distribution in pork by hyperspectral imaging
 Yuweiyi Tang, Xiwei Wang, Xiaoyang Xing, Zhong Li, Maocheng Zhao (270)

Cover Caption

- Grape-harvesting robot from UJS (Cover)
- IJABE's SCI Journal Impact Factor reached 2.032 in JCR 2020 (Back Cover)

Information

- Fourth-term IJABE International Editorial Board (Front Insert I)