

International Journal of Agricultural and Biological Engineering (IJABE)

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

Total Table of Contents

Volume 11, Number 1-6, 2018

Title of the Paper	Author	No.	Page
Overview Articles (OA)			
Advances in greenhouse automation and controlled environment agriculture: A transition to plant factories and urban agricultureRedmond Ramin Shamshiri, Fatemeh Kalantari, K. C. Ting, Kelly R. Thorp, Ibrahim A. Hameed, Cornelia Weltzien, et al.		1	(1)
Review of intelligent sprinkler irrigation technologies for remote autonomous systemXingye Zhu, Prince Chikangaise, Weidong Shi, Wen-Hua Chen, Shouqi Yuan		1	(23)
Considerations of constructing quality, health and safety management system for agricultural products sold via e-commerceChen Ma, Dongyang Wang, Zhiquan Hu, Zhi Li		1	(31)
Progress, problems and prospects for standardization of greenhouse-related technologiesYanzhao Ren, Minjuan Wang, Iftikhar Ahmed Saeeda, Xuerui Chen, Wanlin Gao		1	(40)
Applied Science, Engineering and Technology (ASET)			
Calculation and verification of formula for the range of sprinklers based on jet breakup lengthYue Jiang, Hong Li, Chao Chen, Qingjiang Xiang		1	(49)
Monitoring and analyzing environmental factors favoring outbreaks of <i>Fusarium oxysporum</i> f. sp. <i>vanillae</i> in a vanilla shade houseAntonio Bautista Hernández, Fernando Ramos Quintana, Héctor Sotelo Nava		1	(58)
Animal, Plant and Facility Systems (APFS)			
New control strategy against temperature sudden-drop in the initial stage of pad cooling process in poultry housesXue Hui, Baoming Li, Hongwei Xin, Weichao Zheng, Zhengxiang Shi, Xiao Yang, et al.		1	(66)
Sustainable energy management of solar greenhouses using open weather data on MACQU platformLi Li, Jieyu Li, Haihua Wang, Ts. Georgieva, K. P. Ferentinos, K. G. Arvanitis, et al.		1	(74)
Improving utilization of nests and decreasing mislaid eggs with narrow width of group nestsHongya Zheng, Baoming Li, Gang Chen, Chaoyuan Wang		1	(83)
Power and Machinery Systems (PMS)			
Recognition and localization system of the robot for harvesting Hangzhou White ChrysanthemumsQinghua Yang, Chun Chang, Guanjun Bao, Jun Fan, Yi Xun		1	(88)
Design and test of robotic harvesting system for cherry tomatoQingchun Feng, Wei Zou, Pengfei Fan, Chunfeng Zhang, Xiu Wang		1	(96)
Design and experiment of variable rate orchard sprayer based on laser scanning sensorLonglong Li, Xiongkui He, Jianli Song, Yajia Liu, Aijun Zeng, Liu Yang, et al.		1	(101)
Design of variable-rate liquid fertilization control system and its stability analysisJicheng Zhang, Shouyin Hou, Runtao Wang, Wenyi Ji, Ping Zheng, Shi Wei		1	(109)
Automatic depth control system for a no-till seederJiale Zhao, Longtu Zhu, Honglei Jia, Dongyan Huang, Mingzhuo Guo, Yongjiang Cong		1	(115)
Effects of key parameters of straw chopping device on qualified rate, non-uniformity and power consumptionWeiwei Wang, Jincal Li, Liqing Chen, Haijun Qi, Xiutian Liang		1	(122)
Inertial force balance and ADAMS simulation of the oscillating sieve and return pan of a rice combine harvesterChunca Wei, Lizhang Xu, Jianting Wang, Yaoming Li		1	(129)

Natural Resources and Environmental Systems (NRES)

- Effects of nano carbon on soil erosion and nutrient loss in a semi-arid loess region of Northwestern China
 Beibei Zhou, Xiaopeng Chen, Quanju Wang, Wei Wei, Tiancheng Zhang 1 (138)
- Effects of drip irrigation levels on soil water, salinity and wheat growth in North China
 Zhenhua Wang, Renkuan Liao, Henry Lin, Guojun Jiang, Xinlin He, Wenyong Wu, et al. 1 (146)
- Effects of zeolite application on grain yield, water use and nitrogen uptake of rice under alternate wetting and drying irrigation
 Junlin Zheng, Taotao Chen, Guimin Xia, Wei Chen, Guangyan Liu, Daocai Chi 1 (157)
- Effects of fertigation strategies on water and nitrogen distribution under water storage pit irrigation for orchards
 Jingling Li, Pan Chen, Xihuan Sun, Ping Liu 1 (165)
- Effects of plastic sheet on water saving and yield under furrow irrigation method in semi-arid region
 Muhammad Sohail Memon, Kausar Ali, Altaf Ali Siyal, Jun Guo, Shamim Ara Memon, Shakeel Ahmed Soomro, et al. 1 (172)
- Cropping pattern optimization considering uncertainty of water availability and water saving potential
 Lina Hao, Xiaoling Su, Vijay P. Singh 1 (178)

Information Technology, Sensors and Control Systems (ITSCS)

- Modeling for mung bean variety classification using visible and near-infrared hyperspectral imaging
 Chuanqi Xie, Yong He 1 (187)
- Detection of green apples in natural scenes based on saliency theory and Gaussian curve fitting
 Bairong Li, Yan Long, Huaibo Song 1 (192)
- Detection of egg stains based on local texture feature clustering Qinghua Yang, Mimi Jia, Yi Xun, Guanjuan Bao 1 (199)

Biosystems, Biological and Ecological Engineering (BBEE)

- Microorganism population in two-phase anaerobic fermentation of separated liquid of dairy manure
 Qiang Li, Zhengjun Guan, Guoxiang Zheng 1 (206)

Renewable Energy and Material Systems (REMS)

- Algae optical density sensor for pond monitoring and production process control
 Yao Yao, Yufeng Ge, J. Alex Thomasson, Ruixiu Sui 1 (212)
- Effects of temperature on the performance of anaerobic co-digestion of vegetable waste and swine manure
 Haiwei Ren, Zili Mei, Wenguang Fan, Yujie Wang, Feifei Liu, Tao Luo, et al. 1 (218)
- Ultrasound assisted alkaline pre-treatment of sugarcane filter mud for performance enhancement in biogas production
 Zahir Talha, Abdelbagi Hamid, Dong Guo, Muhammad Hassan, Esmaeil Mehryar, Cedric Okinda, et al. 1 (226)

Agro-product and Food Processing Systems (AFPS)

- Effects of air movement in a hot air dryer on the drying characteristics of colored potato (*Solanum tuberosum* L.) using computational fluid dynamics Hyeon Woo Park, Won Byong Yoon 1 (232)

Cover Caption

- Agricultural Engineering Discipline at Shihezi University 1 (Cover, Inside Covers)
- Briefing IJABE with updated SCI JIF 1 (Back Cover)

Information

- Third-term IJABE International Editorial Board 1 (Front Insert I)

Overview Articles (OA)

- Sensors for measuring plant phenotyping: A review
 Ruicheng Qiu, Shuang Wei, Man Zhang, Han Li, Hong Sun, Gang Liu, et al. 2 (1)

Applied Science, Engineering and Technology (ASET)

- Testing method and distribution characteristics of spatial pesticide spraying deposition quality balance for unmanned aerial vehicle
 Changling Wang, Xiongkui He, Xiaonan Wang, Zhichong Wang, Shilin Wang, Longlong Li, et al. 2 (18)

- Droplet deposition and efficiency of fungicides sprayed with small UAV against wheat powdery mildew
Weicai Qin, Xinyu Xue, Shaoming Zhang, Wei Gu, Baokun Wang 2 (27)

Animal, Plant and Facility System (APFS)

- Effects of environment lighting on the growth, photosynthesis, and quality of hydroponic lettuce in a plant factory
Xin Zhang, Dongxian He, Genhua Niu, Zhengnan Yan, Jinxiu Song 2 (33)
- Improved root zone temperature buffer capacity enhancing sweet pepper yield via soil-ridged substrate-embedded cultivation in solar greenhouseGuohai Fu, Zonggeng Li, Wenke Liu, Qichang Yang 2 (41)

Power and Machinery Systems (PMS)

- Selection and experimental evaluation of shaking rods of canopy shaker to reduce tree damage for citrus mechanical harvesting Yingjun Pu, Arash Toudeshki, Reza Ehsani, Fuzeng Yang, Jaafar Abdulridha 2 (48)
- Design and test of centrifugal disc type sowing device for unmanned helicopter
Cancan Song, Zhiyan Zhou, Xiwen Luo, Yubin Lan, Xingang He, Rui Ming, et al. 2 (55)
- Design of an active seed throwing and cleaning unit for pneumatic rice seed metering device
He Xing, Zaiman Wang, Xiwen Luo, Ying Zang, Wenwu Yang, Minghua Zhang, et al. 2 (62)
- New type of transverse moving box mechanism for pot seedling transplanting machine
Maile Zhou, Zhengyu Hua, Jingyuan Wang, Lei Wang, Yun Zhao, Daqing Yin 2 (70)
- Design and key parameter optimization of an agitated soybean seed metering device with horizontal seed filling
Honglei Jia, Yulong Chen, Jiale Zhao, Mingzhuo Guo, Dongyan Huang, Jian Zhuang 2 (76)
- Field experimental study on optimal design of the rotary strip-till tools applied in rice-wheat rotation cropping system
Yanshan Yang, John Fielke, Qishuo Ding, Ruiyin He 2 (88)
- Design and experimental validation of improved grapevine burying machine
Shuming Yang, Huiyan She, Shuchuan Yang, Xuejun Zhu, Yun Chen, Jinhai Li, et al. 2 (95)

Natural Resources and Environmental Systems (NRES)

- Impact factors and dynamic simulation of tillage-layer temperature in frozen-thawed soil under different cover conditions
Qiang Fu, Zi'ao Ma, Enliang Wang, Tianxiao Li, Renjie Hou 2 (101)
- Controlling threshold in soil salinity when planting spring wheat and sequential cropping silage corn in Northern Xinjiang using drip irrigationZhenhua Wang, Bo Zhou, Lei Pei, Jinzhu Zhang, Xinlin He, Henry Lin 2 (108)
- Hydrochemical characteristics and water quality assessment for drinking and agricultural purposes in District Jacobabad, Lower Indus Plain, PakistanAsfandyar Shahab, Shihua Qi, Muhammad Zaheer, Audil Rashid, Muhammad Afnan Talib, Umer Ashraf 2 (115)
- Effects of straw mulching on microclimate characteristics and evapotranspiration of drip-irrigated winter wheat in North China Plain
Jiandong Wang, Yanqun Zhang, Shihong Gong, Di Xu, Richard Snyder, Yanyu Chen, et al. 2 (122)
- Urease activity and urea hydrolysis rate under coupling effects of moisture content, temperature, and nitrogen application rate
Tao Lei, Qiongqiong Gu, Xianghong Guo, Juanjuan Ma, Yong Zhang, Xihuan Sun 2 (132)
- Land suitability assessment for apple (*Malus domestica*) in the Republic of Korea using integrated soil and climate information, MLCM, and AHPHojung Kim, Kyomoon Shim 2 (139)

Information Technology, Sensors and Control Systems (ITSCS)

- Quantitative identification of crop disease and nitrogen-water stress in winter wheat using continuous wavelet analysis
Wenjiang Huang, Junjing Lu, Huichun Ye, Weiping Kong, A. Hugh Mortimer, Yue Shi 2 (145)
- Precautionary analysis of sprouting potato eyes using hyperspectral imaging technology
Yingwang Gao, Qiwei Li, Xiuqin Rao, Yibin Ying 2 (153)
- Preprocessing method of night vision image application in apple harvesting robot
Weikuan Jia, Yuanjie Zheng, De'an Zhao, Xiang Yin, Xiaoyang Liu, Ruicheng Du 2 (158)
- Rapid detection of chlorophyll content and distribution in citrus orchards based on low-altitude remote sensing and bio-sensors
Kejian Wang, Wentao Li, Lie Deng, Qiang Lyu, Yongqiang Zheng, Shilai Yi, et al. 2 (164)
- Image dehazing based on dark channel prior and brightness enhancement for agricultural monitoring
Xiuyuan Wang, Chenghai Yang, Jian Zhang, Huaibo Song 2 (170)
- Identification of maize seed varieties based on near infrared reflectance spectroscopy and chemometrics
Yongjin Cui, Lanjun Xu, Dong An, Zhe Liu, Jiancheng Gu, Shaoming Li, et al. 2 (177)
- A novel and smart automatic light-seeking flowerpot for monitoring flower growth environment
Xihai Zhang, Dong Liu, Chengguo Fan, Jiali Du, Fanfeng Meng, Junlong Fang 2 (184)

Online ultrasonic terminal for measuring pig backfat thickness

.....Ganghong Zhang, Wanlin Gao, Sha Tao, Lina Yu, Guofeng Zhang, Xuan Luo 2 (190)

Biosystems, Biological and Ecological Engineering (BBEE)

Effects of drought stress on photosynthesis and chlorophyll fluorescence images of soybean (*Glycine max*) seedlings

.....Wensen Wang, Cheng Wang, Dayu Pan, Yakun Zhang, Bin Luo, Jianwei Ji 2 (196)

Renewable Energy and Material Systems (REMS)

Assessment of pollutant emissions and energy efficiency of four commercialized charcoal stoves with modified Chinese cooking stove protocol

.....Yixiang Zhang, Jiong Hao, Yuguang Zhou, Zongxi Zhang, Li Chen, Renjie Dong 2 (202)

Agro-product and Food Processing Systems (AFPS)

Effects of xanthan gum on the rheological properties of soy protein dispersion

.....Chonghao Bi, Fei Gao, Yingdan Zhu, Fang Ji, Yulai Zhang, Dong Li, et al. 2 (208)

Optimization of drying conditions and components to reduce wall sticking during spray drying of infant formula milk

.....Yawen Lin, Yanhong Liu, Lu Wang, Yongkang Xie, Zhenjiang Gao, Shaojin Wang 2 (214)

Cover Caption

Precision Rice Hill-drop Drilling Technology and Machine, Rice Production Mechanization Research Team, College of Engineering, South China Agricultural University

..... 2 (Cover, Inside Covers)

Briefing IJABE with updated SCI JIF

..... 2 (Back Cover)

Information

Third-term IJABE International Editorial Board

..... 2 (Front Insert I)

Overview Articles (OA)

Review of precision rice hill-drop drilling technology and machine for wet paddy

.....Minghua Zhang, Zaiman Wang, Xiwen Luo, Ying Zang, Wenwu Yang, He Xing, et al. 3 (1)

Review of grain threshing theory and technology

.....Jun Fu, Zhi Chen, Lujia Han, Luquan Ren 3 (12)

Review of air disturbance technology for plant frost protection

.....Yongguang Hu, Eric Amoah Asante, Yongzong Lu, Ashraf Mahmood, Noman Ali Buttar, Shouqi Yuan 3 (21)

Applied Science, Engineering and Technology (ASET)

Effects of xanthan gum on atomization and deposition characteristics in water and Silwet 408 aqueous solution

.....Shilin Wang, Xiongkui He, Jianli Song, Shuangshuang Wang, Xiaoming Jia, Yun Ling 3 (29)

Development of agricultural bionic mechanisms: Investigation of the effects of joint angle and pressure on the stability of goats moving on sloping lands

.....Fu Zhang, Limin Zheng, Wei Wang, Yafei Wang, Jiaji Wang 3 (35)

Modeling of flexible wheat straw by discrete element method and its parameter calibration

.....Fanyi Liu, Jian Zhang, Jun Chen 3 (42)

Animal, Plant and Facility System (APFS)

Cooling performance of earth-to-air heat exchangers applied to a poultry barn in semi-desert areas of south Iraq

.....Wasseem Morshed, Lorenzo Leso, Leonardo Conti, Giuseppe Rossi, Stefano Simonini, Matteo Barbari 3 (47)

Physicochemical water quality parameters in typical rice-crayfish integrated systems (RCIS) in China

.....Jixin Yu, Yan Ren, Tao Xu, Wei Li, Mantang Xiong, Tanglin Zhang, et al. 3 (54)

Effects of spent mushroom substrate and slurry on nutritional value of grass and *Medicago x varia T. Martyn* mixtures

.....Kazimierz Jankowski, Elzbieta Malinowska, Jacek Sosnowski, Beata Wiśniewska-Kadzajan, Anna Kaczorek 3 (61)

Power and Machinery Systems (PMS)

Development of single row automatic transplanting device for potted vegetable seedlings

.....Xin Jin, Daoyi Li, Hao Ma, Jiangtao Ji, Kaixuan Zhao, Jing Pang 3 (67)

Design optimization and test for a pendulum suspension of the crop spray boom in dynamic conditions based on a six DOF motion simulator

.....Longfei Cui, Hanping Mao, Xinyu Xue, Suming Ding, Baiyu Qiao 3 (76)

- Innovative circular path harvester for the mechanical harvesting of irregular and large-canopy olive trees
Rafael R. Sola-Guirado, Gregorio L. Blanco-Roldan, Sergio Castro-Garcia,
 Francisco J. Castillo-Ruiz, Jesus A. Gil-Ribes 3 (86)
- Automated detection of parasitized *Cadra cautella* eggs by *Trichogramma bourarachae* using machine vision
Mohammed S. El-Faki, Yuqi Song, Naiqian Zhang, Hamadttu A. El-Shafie, Xin Pan 3 (94)
- Fuel economy of multiple conditions self-adaptive tractors with hydro-mechanical CVT
Maohua Xiao, Jing Zhao, Yuewen Wang, Haijun Zhang, Zhixiong Lu, Weihua Wei 3 (102)

Natural Resources and Environmental Systems (NRES)

- Comparison of three regionalization techniques for predicting streamflow in ungaged watersheds in Nebraska, USA using SWAT model
Michael W. Van Liew, Aaron R. Mittelstet 3 (110)
- Effects of terrain slope on water distribution and application uniformity for sprinkler irrigation
Lin Zhang, Xin Hui, Junying Chen 3 (120)
- Osmotic adjustment and up-regulation expression of stress-responsive genes in tomato induced by soil salinity resulted from nitrate fertilization
Tingting Chang, Yujie Zhang, Huilian Xu, Xiaohou Shao, Qicong Xu, Fenglan Li, et al. 3 (126)
- Effects of irrigation water salinity on soil salt content distribution, soil physical properties and water use efficiency of maize for seed in arid Northwest China
Chengfu Yuan, Shaoyuan Feng, Juan Wang, Zailin Huo, Quanyi Ji 3 (137)
- Coordination and order risk assessment of water and land resource system based on periphery and synergetics theories
Qiuxiang Jiang, Zhimei Zhou, Zilong Wang, Qiang Fu, Youzhu Zhao, Tian Wang 3 (146)

Information Technology, Sensors and Control Systems (ITSCS)

- Automatic determination of optimal spectral peaks for classification of Chinese tea varieties using laser-induced breakdown spectroscopy
Hongyang Zhang, Qibing Zhu, Min Huang, Ya Guo 3 (154)
- Improved method for prediction of milled rice moisture content based on Weibull distribution
Jing Ling, Zhaosheng Teng, Haijun Lin 3 (159)
- Automated extraction of corn leaf points from unorganized terrestrial LiDAR point clouds
Wei Su, Mingzheng Zhang, Junming Liu 3 (166)
- Quality of terrestrial data derived from UAV photogrammetry: A case study of the Hetao irrigation district in northern China
Hongming Zhang, Jiangtao Yang, Jantiene E.M. Baartman, Shuqin Li, Bei Jin, Wenting Han, et al. 3 (171)
- Measurements and analysis of water content in winter wheat leaf based on terahertz spectroscopy
Bin Li, Yuan Long, Hao Yang 3 (178)
- Multi-kernel dictionary learning for maize varieties classification
Hua Zhu, Jun Yue, Zhenbo Li, Zhiwang Zhang 3 (183)
- Classification and recognition scheme for vegetable pests based on the BOF-SVM model
Deqin Xiao, Jianzhao Feng, Tanyu Lin, Chunhua Pang, Yaowen Ye 3 (190)
- Fast and robust image sequence mosaicking of nursery plug tray images
Suiyan Tan, Xu Ma, Long Qi, Zehua Li 3 (197)

Renewable Energy and Material Systems (REMS)

- Determination of biogas production potential from animal manure and GHG emission abatement in Turkey
Cengiz Karaca 3 (205)

Agro-product and Food Processing Systems (AFPS)

- Effects of gibberellic acid (GA3) and salicylic acid (SA) postharvest treatments on the quality of fresh Barhi dates at different ripening levels in the Khalal maturity stage during controlled atmosphere storage
Ahmed Atia, Diaeldin Abdelkarim, Mahmoud Younis, Abdullah Alhamdan 3 (211)
- Evaluation of a heating block system for accurate temperature-time controlled pasteurization treatments on various foods
Xiaoxi Kou, Rui Li, Lixia Hou, Teng Cheng, Xu Zhou, Shaojin Wang 3 (220)

Cover Caption

- Intelligent vegetable production Laboratory, Henan University of Science and Technology 3 (Cover, Inside Covers)
- Briefing IJABE with updated SCI JIF 3 (Back Cover)

Information

- Third-term IJABE International Editorial Board 3 (Front Insert I)

Overview Articles (OA)

- Research and development in agricultural robotics: A perspective of digital farming Redmond Ramin Shamshiri, Cornelia Weltzien, Ibrahim A. Hameed, Ian J. Yule, Tony E. Grift, Siva K. Balasundram, et al. 4 (1)
- Simulation software and virtual environments for acceleration of agricultural robotics: Features highlights and performance comparison Redmond Ramin Shamshiri, Ibrahim A. Hameed, Lenka Pitonakova, Cornelia Weltzien, Siva K. Balasundram, Ian J. Yule, et al. 4 (15)
- Deep learning for smart agriculture: Concepts, tools, applications, and opportunities Nanyang Zhu, Xu Liu, Ziqian Liu, Kai Hu, Yingkuan Wang, Jinglu Tan, et al. 4 (32)

Applied Science, Engineering and Technology (ASET)

- Slipping detection and control in gripping fruits and vegetables for agricultural robot Guangzhao Tian, Jun Zhou, Baoxing Gu 4 (45)
- Mechanical strength of wheat grain varieties influenced by moisture content and loading rate Yaoming Li, Farman Ali Chandio, Zheng Ma, Imran Ali Lakhiar, Abdul Razaque Sahito, Fiaz Ahmad, et al. 4 (52)

Animal, Plant and Facility System (APFS)

- Improved greenhouse cucumber production under deficit water and fertilization in Northern China Shaikh Abdullah Al Mamun Hossain, Lixue Wang, Haisheng Liu 4 (58)
- Wolfberry tree dual-model detection method and orchard target-oriented fertilization system based on photoelectric sensors Shuo Yang, Changyuan Zhai, John Long, Bo Zhang, Hanzhe Li 4 (65)

Power and Machinery Systems (PMS)

- Influences of wide-narrow seeding on soil properties and winter wheat yields under conservation tillage in North China Plain Hongnan Hu, Caiyun Lu, Qingjie Wang, Hongwen Li, Jin He, Dijuan Xu, et al. 4 (74)
- Design and experimental study of seed precise delivery mechanism for high-speed maize planter Quanwei Liu, Tao Cui, Dongxing Zhang, Li Yang, Yunxia Wang, Xiantao He, et al. 4 (81)
- Study on round rice straw bale wrapping silage technology and facilities Liqiao Li, Defu Wang, Xing Yang 4 (88)
- Design and experimental validation of sliding knife notch-type disc opener for a no-till combine harvester cum seed drill Kuan Qin, Weimin Ding, Fiaz Ahmad, Zhichao Fang 4 (96)
- Design and test of 4ZZ-4A2 full-hydraulic self-propelled jujube harvester Wei Fu, Zhiyuan Zhang, Kai Ding, Weibin Cao, Za Kan, Junbing Pan, et al. 4 (104)
- Computational and experimental investigation of laminar flow mixing system in a pitched-blade turbine stirred tank Yanyan Cui, Huabo Zhang, Xiwen Li, Mingjin Yang, Zailin Guan 4 (111)

Natural Resources and Environmental Systems (NRES)

- Spectral reflectance response to nitrogen fertilization in field grown corn Chuanqi Xie, Ce Yang, Alexander Hummel Jr, Gregg A Johnson, Forrest T Izuno 4 (118)
- Characteristics of soil nutrients and their relationship with soil microbial properties in *Artemisia sacrorum* communities in the loess hilly region Lijuan Song, Weiyang Liu, Huifeng Wu, Tian Gao, Wenfang Hao 4 (127)
- Climate change impact assessment on three major crops in the north-central region of Bangladesh using DSSAT Atikur Rahman, Mohammad Abdul Mojid, Selina Banu 4 (135)
- Effects of irrigation water regime, soil clay content and their combination on growth, yield, and water use efficiency of rice grown in South China Yousef Alhaj Hamoud, Xiangping Guo, Zhenchang Wang, Sheng Chen, Ghulam Rasool 4 (144)
- Assessing effects of deficit irrigation techniques on water productivity of tomato for subsurface drip irrigation system Mahmoud S Hashem, Tarek Zin El-Abedin, Hussein M Al-Ghobari 4 (156)
- Soil acidification of alfisols influenced by nitrate and ammonium nitrogen level in tea plantation Hui Wang, Hao Zhang, Yan Zhao, Renkou Xu 4 (168)

Information Technology, Sensors and Control Systems (ITSCS)

- Natural UAV tele-operation for agricultural application by using Kinect sensor Xuanchun Yin, Yubin Lan, Sheng Wen, Jiantao Zhang, Shifan Wu 4 (173)
- Automatic monitoring method of cow ruminant behavior based on spatio-temporal context learning Yujuan Chen, Dongjian He, Huaibo Song 4 (179)

Design and evaluation of a maize monitoring system for precision plantingYanxin Yin, Liping Chen, Zhijun Meng, Bin Li, Changhai Luo, Weiqiang Fu, et al.	4	(186)
Cucumber appearance quality detection under complex background based on image processingHaijian Ye, Chengqi Liu, Peiyun Niu	4	(193)
Convolutional neural network-based automatic image recognition for agricultural machineryKun Yang, Hui Liu, Pei Wang, Zhijun Meng, Jingping Chen	4	(200)
Water-efficient sensing method for soil profiling in the paddy fieldZhenran Gao, Jun Ni, Yan Zhu, Qi Jiang, Weixing Cao	4	(207)
High performance vegetable classification from images based on AlexNet deep learning modelLing Zhu, Zhenbo Li, Chen Li, Jing Wu, Jun Yue	4	(217)

Renewable Energy and Material Systems (REMS)

Anaerobic co-digestion of sodium hydroxide pretreated sugarcane leaves with pig manure and dairy manureJuan Luo, Haibo Meng, Zonglu Yao, Akiber Chufo Wachemoa, Hairong Yuan, Liang Zhang, et al.	4	(224)
--	---	-------

Agro-product and Food Processing Systems (AFPS)

Effects of extrusion conditions on physicochemical properties of soy protein/gluten compositeMin Wu, Yang Sun, Chonghao Bi, Fang Ji, Borui Li, Junjie Xing	4	(230)
Analysis of moisture and total sugar content of Huizao based on surface imagesJunxiong Zhang, Qingqing Ma, Fen He, Feng Qu, Wei Li	4	(238)

Safety, Health and Ergonomics (SHE)

Automatic cruise system for water quality monitoringChengyun Zhu, Xingqiao Liu, Hailei Chen, Xiang Tian	4	(244)
---	---	-------

Cover Caption

Agricultural Product Harvesting and Post-production Processing Engineering Technology Innovation Team, NRIAM	4	(Cover, Inside Covers)
Briefing IJABE with updated SCI JIF	4	(Back Cover)

Information

Third-term IJABE International Editorial Board	4	(Front Insert I)
--	---	------------------

Overview Articles (OA)

Analysis of journal content characteristics and metrics reported in the Clarivate Analytics Journal Citation Reports and Web of Science Core Collection Agricultural Engineering categoriesYuanjie Wang, Philip W. Gassman, Yingkuan Wang, Yingjun Pu	5	(1)
Review of theoretical methods and research aspects for detecting leaf water content using terahertz spectroscopy and imagingFangfang Qu, Pengcheng Nie, Lei Lin, Chengyong Cai, Yong He	5	(27)
Mini-review of application of IoT technology in monitoring agricultural products quality and safetyHua Ping, Jihua Wang, Zhihong Ma, Yuanfang Du	5	(35)

Applied Science, Engineering and Technology (ASET)

Effect of aerial spray adjuvant applying on the efficiency of small unmanned aerial vehicle for wheat aphids controlYanhua Meng, Yubin Lan, Guiying Mei, Yongwang Guo, Jianli Song, Zhiguo Wang	5	(46)
Drift potential of UAV with adjuvants in aerial applicationsXiaonan Wang, Xiongkui He, Jianli Song, Zhichong Wang, Changling Wang, Shilin Wang, et al.	5	(54)
Experimental study of ultrasonic atomizer effects on values of EC and pH of nutrient solutionImran Ali Lakhari, Xingda Liu, Guanqun Wang, Jianmin Gao	5	(59)
Feasibility of terahertz spectroscopy for hybrid purity verification of rice seedsYaling Yang, Shengling Zhou, Jie Song, Jie Huang, Guanglin Li, Shiping Zhu	5	(65)

Animal, Plant and Facility System (APFS)

Adaptability of pullets from cages to a large cage aviary unit system during the initial settling-in periodLiu Yang, Qin Tong, Haipeng Shi, Gang Chen, Zhengxiang Shi, Weichao Zheng, et al.	5	(70)
---	---	------

Power and Machinery Systems (PMS)

- Design and evaluation of a two-section canopy shaker with variable frequency for mechanical harvesting of citrus
Yingjun Pu, Arash Toudeshki, Reza Ehsani, Fuzeng Yang 5 (77)
- Factorial significance on tractor stability under variation of terrain roughness employing the Taguchi method
Zhen Li, Zhongxiang Zhu, Jiahao Qin, Enrong Mao, Muneshi Mitsuoka, Eiji Inoue, et al. 5 (88)
- Development and evaluation of a low-cost precision seeding control system for a corn drill
Xiang Yin, Noboru Noguchi, Tengxiang Yang, Chengqian Jin 5 (95)
- Performance analysis and test of a maize inter-row self-propelled thermal fogger chassis
Liqing Chen, Pinpin Wang, Peng Zhang, Quan Zheng, Jin He, Qingjie Wang 5 (100)
- Performance experiment and numerical prediction on the optimization design of the micro-sized water turbine for the hose reel irrigator
Lingdi Tang, Shouqi Yuan, Yue Tang, Haofang Yan 5 (108)
- Design and experiment of multi-row pneumatic precision metering device for rapeseed
Elebaid Jabir Ibrahim, Qingxi Liao, Lei Wang, Yitao Liao, Lu Yao 5 (116)

Natural Resources and Environmental Systems (NRES)

- Importance of considering nutrient loadings from small watersheds to a lake – A case study of the Lake Shinji watershed, Shimane Prefecture, Japan
Hiroaki Somura, Hidenobu Kunii, Yasumichi Yone, Ikuo Takeda, Hirokazu Sato 5 (124)
- Spatial-temporal distribution and impact factors of irrigation water use efficiency in the grain production of China
Xiangping Guo, Mengyang Wu, Xinchun Cao, Zhenchang Wang 5 (131)
- Effects of continuous and pulse irrigation with different nitrogen applications on soil moisture, nitrogen transport and accumulation in root systems
Lingmiao Huang, Peiling Yang, Shumei Ren, Haobo Cui 5 (139)
- Different growing strategies of two winter wheat cultivars under rainfed conditions during dry years in North China Plain
Baodi Dong, Hong Yang, Yunzhou Qiao, Mingming Zhang, Yakai Wang, Lele Jin, et al. 5 (150)
- Optimization of equitable irrigation water delivery for a large-scale rice irrigation scheme
Md Rowshon Kamal, Muhammad Iqbal, Md Abdul Mojid, Mohd Amin Mohd Soom, Lai Sai Hin 5 (160)
- Water extractable plant nutrients in soils amended with cow manure co-composted with maple tree residues
Zobia Anwar, Muhammad Irshad, An Ping, Farhan Hafeez, Shao Yang 5 (167)

Information Technology, Sensors and Control Systems (ITSCS)

- Auto-steering based precise coordination method for in-field multi-operation of farm machinery
Jie Wang, Yuting Zhu, Zhibo Chen, Lili Yang, Caicong Wu 5 (174)
- Extracting body surface dimensions from top-view images of pigs
Mingzhou Lu, Tomas Norton, Ali Youssef, Nemanja Radojkovic, Alberto Peña Fernández, Daniel Berckmans 5 (182)
- Multi target pigs tracking loss correction algorithm based on Faster R-CNN
Longqing Sun, Yuanbing Zou, Yan Li, Zhengda Cai, Yue Li, Bing Luo 5 (192)
- Waterlogging risk assessment for winter wheat using multi-source data in the middle and lower reaches of Yangtze River
Yuanyuan Chen, Jingfeng Huang, Xiaodong Song, Hongyan Wu, Shaoxue Sheng, Zhixiong Liu, et al. 5 (198)
- Grain flow rate sensing for a 55 kW full-feed type multi-purpose combine
Moon-Chan Choi, Kyu-Ho Lee, Bo-Eun Jang, Yong-Joo Kim, Sun-Ok Chung, Jong-Soon Lee, et al. 5 (206)

Renewable Energy and Material Systems (REMS)

- Comparison of lipid extraction methods for the microalgae *Acutodesmus obliquus*
Diana Ximena Hurtado, Claudia Lorena Garzán-Castro, Jhon Cortés-Romero, Edisson Tello Camacho 5 (211)
- Effects of different heating patterns on the decomposition behavior of white pine wood during slow pyrolysis
Yajun Wang, Kang Kang, Zonglu Yao, Guotao Sun, Ling Qiu, Lixin Zhao, et al. 5 (218)
- Formation process and properties of hydrogen-producing granular sludge in UASB reactor
Lili Yin, Shuang Liu, Mengyi Wang, Wencong Ju, Donghui Wei, Wenzhe Li 5 (224)

Agro-product and Food Processing Systems (AFPS)

- Physicochemical properties, flavor intensity and oxidative stability of different camellia oils
Xiaofei Jiang, Shimin Wu, Dan Yuan, Ciji Lamu, Qiang Wang, Zhiheng Zhang 5 (230)
- Optimization of the ultrasonic-microwave assisted enzymatic hydrolysis of freshwater mussel meat
Yajun Zhou, Xiaoli Yi, Jingya Wang, Qi Yang, Shujie Wang 5 (236)

Cover Caption

- Second National Invention Award, Qingdao Agricultural University 5 (Cover, Inside Covers)
 Briefing IJABE with updated SCI JIF 5 (Back Cover)

Information

- Third-term IJABE International Editorial Board 5 (Front Insert I)

Overview Articles (OA)

- Promoting agricultural and rural modernization through application of information and communication technologies in China
 Dongyu Qu, Xiaobing Wang, Chunpeng Kang, Yang Liu 6 (1)

Applied Science, Engineering and Technology (ASET)

- Drift and deposition of pesticide applied by UAV on pineapple plants under different meteorological conditions
 Juan Wang, Yubin Lan, Huihui Zhang, Yali Zhang, Sheng Wen, Weixiang Yao 6 (5)
 Determining soil organic carbon concentration in agricultural fields using a handheld spectroradiometer: Implication for soil fertility
 measurement ElKamil Tola, Khalid A. Al-Gaadi, Rangaswamy Madugundu, Ahmed G. Kayad,
 Ahmed A. Alameen, Haroon F. Edrees, et al. 6 (13)
 Trunk detection based on laser radar and vision data fusion Jinlin Xue, Bowen Fan, Jia Yan, Shuxian Dong, Qishuo Ding 6 (20)

Animal, Plant and Facility System (APFS)

- Reducing feather pecking and cloacal cannibalism by providing layer breeders with nest boxes in colony cages for natural mating
 Haipeng Shi, Weichao Zheng, Jiang Tu, Baoming Li 6 (27)

Power and Machinery Systems (PMS)

- Design and field evaluation of hill-drop pneumatic central cylinder direct-seeding machine for hybrid rice
 Baolong Wang, Xiwen Luo, Zaiman Wang, Le Zheng, Minghua Zhang, Yizheng Dai, et al. 6 (33)
 Fertilization strategy and application model using a centrifugal variable-rate fertilizer spreader
 Yinyan Shi, Zhichao Hu, Xiaochan Wang, Morice O. Odhiambo, Guoxiang Sun 6 (41)
 Improving uniform scattering device for straw-smashing, back-throwing, no-tillage planter under complete straw mulching condition
 Fengwei Gu, Xuemei Gao, Feng Wu, Zhichao Hu, Youqing Chen, Chong Zhang 6 (49)
 Information acquisition system of multipoint soil surface height variation for profiling mechanism of seeding unit of precision corn planter
 Bo Zhang, Wei Zhang, Liqiang Qi, Haiba Fu, Lijuan Yu, Rui Li, et al. 6 (58)
 Parameter optimization of fluted-roller meter using discrete element method
 Yuxiang Huang, Botao Wang, Yuxiang Yao, Shangpeng Ding, Junchang Zhang, Ruixiang Zhu 6 (65)
 Tilting stability analysis and experiment of the 3-DOF lifting platform for hilly orchards
 Zhenhua Duan, Wei Qiu, Weimin Ding, Yande Liu, Yuping Ouyang, Liang Huang 6 (73)
 Mechanical properties and finite element analysis of walnut under different cracking parts
 Hong Zhang, Liuyang Shen, Haipeng Lan, Yong Li, Yang Liu, Yurong Tang, et al. 6 (81)
 Development of autonomous navigation system for rice transplanter
 Xiang Yin, Juan Du, Noboru Noguchi, Tengxiang Yang, Chengqian Jin 6 (89)

Natural Resources and Environmental Systems (NRES)

- Application and evaluation of Stanghellini model in the determination of crop evapotranspiration in a naturally ventilated greenhouse
 Samuel Joe Acquah, Haofang Yan, Chuan Zhang, Guoqing Wang, Baoshan Zhao, Haimei Wu, et al. 6 (95)
 Hydraulic performance characteristics of impact sprinkler with a fixed water dispersion device
 Zakaria Issaka, Hong Li, Yue Jiang, Pan Tang, Chao Chen, Ransford Opoku Darko 6 (104)

Information Technology, Sensors and Control Systems (ITSCS)

- Adaptive turning control for an agricultural robot tractor Hao Wang, Noboru Noguchi 6 (113)
 Inspection of maleic anhydride in starch powder using line-scan hyperspectral Raman chemical imaging technique
 Jianwei Qin, Moon S. Kim, Kuanglin Chao, Lisa Bellato, Walter F. Schmidt, Byoung-Kwan Cho, et al. 6 (120)

Hyperspectral diagnosis of nitrogen status in arbuscular mycorrhizal inoculated soybean leaves under three drought conditionsYinli Bi, Weiping Kong, Wenjiang Huang	6	(126)
Estimation of chlorophyll content in maize canopy using wavelet denoising and SVR methodHaojie Liu, Minzan Li, Junyi Zhang, Dehua Gao, Hong Sun, Liwei Yang	6	(132)
Impact of spectral interval on wavelet features for detecting wheat yellow rust with hyperspectral dataJingcheng Zhang, Bin Wang, Xuexue Zhang, Peng Liu, Yingying Dong, Kaihua Wu, et al.	6	(138)
Phenotyping of poplar seedling leaves based on a 3D visualization methodChunhua Hu, Pingping Li, Zhou Pan	6	(145)
Response characteristics and efficiency of variable rate fertilization based on spectral reflectanceMan Chen, Zhenjie Yang, Xiaochan Wang, Yinyan Shi, Yu Zhang	6	(152)
Image detection and verification of visual navigation route during cotton field management periodJingbin Li, Rongguang Zhu, Bingqi Chen	6	(159)

Renewable Energy and Material Systems (REMS)

Effects of different biochars on antibiotic resistance genes during swine manure thermophilic compostingJian Wang, Bin Sui, Yujun Shen, Haibo Meng, Lixin Zhao, Haibin Zhou, et al.	6	(166)
Survey on heavy metal concentrations and maturity indices of organic fertilizer in ChinaXi Zhang, Haibo Meng, Yujun Shen, Ji Li, Jiarui Wang, Haibin Zhou, et al.	6	(172)
Thermogravimetric analysis of bamboo-tar under different heating rates based on distributed activation energy modelHuan Zhang, Beibei Yan, Tingzhou Lei, Tao Liu, Jianjun Hu, Yameng Li, et al.	6	(180)

Agro-product and Food Processing Systems (AFPS)

Application and optimization of solid-state fermentation process for enhancing polygalacturonase production by <i>Penicillium expansum</i>Mingming Zhu, Hongju He, Mingtao Fan, Hanjun Ma, Haiwei Ren, Jie Zeng, et al.	6	(187)
Detection of rice seed vigor by low-field nuclear magnetic resonancePing Song, Peng Song, Hongwei Yang, Tao Yang, Jing Xu, Kaitian Wang	6	(195)
Effects of hydrogen sulfide on storage quality, water mobility and cell wall metabolism of strawberry fruitHuanhuan Zhi, Qiqi Liu, Yu Dong	6	(201)
Evolution of pore structure during microwave freeze-drying of Chinese yamLiuliu Duan, Xu Duan, Guangyue Ren	(208)	

Cover Caption

National Center for International Collaboration Research on Precision Agricultural Aviation Pesticide Spraying Technology, South China Agricultural University	6	(Cover, Inside Covers)
Briefing IJABE with updated SCI JIF	6	(Back Cover)

Information

2018 IJABE Reviewer Acknowledgement	6	(213)
Total Table of Contents in 2018	6	(221)
Third-term IJABE International Editorial Board	6	(Front Insert I)