

International Journal of Agricultural and Biological Engineering (IJABE)

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

Total Table of Contents

Volume 12, Number 1-6, 2019

Title of the Paper	Author	No.	Page
Applied Science, Engineering and Technology (ASET)			
Stereovision system for estimating tractors and agricultural machines transit area under orchards canopy Corrado Costa, Paolo Febbi, Federico Pallottino, Massimo Cecchini, Simone Figorilli, Francesca Antonucci, et al.		1	(1)
Real-time monitoring of optimum timing for harvesting fresh tea leaves based on machine vision Liang Zhang, Hongduo Zhang, Yedong Chen, Sihui Dai, Xumeng Li, Kenji Imou, et al.		1	(6)
Design and anti-sway performance testing of pesticide tanks in spraying UAVs Yu Zang, Ying Zang, Zhiyan Zhou, Xiuyan Gu, Rui Jiang, Lingxi Kong, et al.		1	(10)
Modeling and analysis of pelletization process based on a multi-hole pelletizing device Qinghai Jiang, Kai Wu, Yu Sun		1	(17)
Animal, Plant and Facility Systems (APFS)			
Comparison of thermal and light performance in two typical Chinese solar greenhouses in Beijing Fan Xu, Chao Shang, Hongling Li, Xuzhang Xue, Weituo Sun, Hong Chen, et al.		1	(24)
Power and Machinery Systems (PMS)			
Powertrain parameter matching and optimal design of dual-motor driven electric tractor Yanni Chen, Bin Xie, Yuefeng Du, Enrong Mao		1	(33)
Design and test of bionic wide-ridge soybean tilling-sowing machine Honglei Jia, Mingzhuo Guo, Jiale Zhao, Dongyan Huang, Jian Zhuang, Jiangtao Qi		1	(42)
Design and experiment of spray and rotary tillage combined disinfection machine for soil Jinwu Wang, Wenpan Yang, Xiaobo Sun, Xiang Li, Han Tang		1	(52)
Optimized design and field experiment of a staggered vibrating subsoiler for conservation tillage Yunxia Wang, Abdalla N Osman, Dongxing Zhang, Li Yang, Tao Cui, Xiangjun Zhong		1	(59)
Motion simulation and test on threshed grains in tapered threshing and transmission device for plot wheat breeding based on CFD-DEM Fei Dai, Xuefeng Song, Wuyun Zhao, Zhengsheng Han, Fengwei Zhang, Shilin Zhang		1	(66)
Models for economic evaluation of multi-purpose apple harvest platform and software development Zhao Zhang, Zhaohua Zhang, Xinmiao Wang, Hu Liu, Yuanjie Wang, Weijie Wang		1	(74)
Natural Resources and Environmental Systems (NRES)			
Impacts of global climate change on stream low flows: A case study of the great Miami river watershed, Ohio, USA Sabin Shrestha, Suresh Sharma, Rishabh Gupta, Rabin Bhattarai		1	(84)
Parameter evaluation for soil erosion estimation on small watersheds using SWAT model Fiaz Hussain, Ghulam Nabi, Ray-Shyan Wu, Bashir Hussain, Tanveer Abbas		1	(96)
Effects of irrigation regimes on soil NO ₃ ⁻ -N, electrical conductivity and crop yield in plastic greenhouse Tingting Chang, Yujie Zhang, Zhanyu Zhang, Xiaohou Shao, Weina Wang, Jie Zhang, et al.		1	(109)
Distribution and storage of soil organic and inorganic carbon under different ecological zones in Xinjiang, China An Yan, Baoguo Li, Feng Huang, Wentai Zhang, Pingan Jiang, Jiandong Sheng		1	(116)
Impact of center pivot irrigation system uniformity on growth of potato crop and residual soil nitrogen Khalid A. Al-Gaadi, Abdalhaleem A. Hassaballa, ElKamil Tola, Ahmed G. Kayad, Rangaswamy Madugundu, Fahad Assiri, et al.		1	(126)
Effects of drip irrigation on components of water cycle in arid inland areas: a case study of Manas river basin in northwestern China Pengfei Li, Guang Yang, Xinlin He, Fadong Li, Ke Yan, Zelin Wang		1	(132)
Variations of soil quality from continuously planting greenhouses in North China Jing Li, Yan Xu, Hongguang Liu		1	(139)

Information Technology, Sensors and Control Systems (ITSCS)

- Design and performance of a robotic arm for farm use Ali Roshanianfard, Noboru Noguchi, Tatsuki Kamata 1 (146)
- Automatic diagnosis of strawberry water stress status based on machine vision
..... Han Li, Jian Yin, Man Zhang, Nick Sigrimis, Yu Gao, Wengang Zheng 1 (159)
- Assessment of canopy vigor information from kiwifruit plants based on a digital surface model from unmanned aerial vehicle imagery
..... Jinru Xue, Yeman Fan, Baofeng Su, Sigfredo Fuentes 1 (165)
- Evaluation of droplet deposition and effect of variable-rate application by a manned helicopter with AG-NAV Guía system
..... Weixiang Yao, Yubin Lan, Sheng Wen, Huihui Zhang, Yali Zhang, Juan Wang, et al. 1 (172)
- Model for tomato photosynthetic rate based on neural network with genetic algorithm
..... Jin Hu, Pingping Xin, Siwei Zhang, Haihui Zhang, Dongjian He 1 (179)
- Automatic detection of ruminant cows' mouth area during rumination based on machine vision and video analysis technology
..... Yanru Mao, Dongjian He, Huaibo Song 1 (186)
- Mapping fractional cropland covers in Brazil through integrating LSMA and SDI techniques applied to MODIS imagery
..... Changming Zhu, Xin Zhang, Qiaohua Huang 1 (192)

Biosystems, Biological and Ecological Engineering (BBEE)

- Energy balance and environmental impacts of rice and wheat production: A case study in Nepal
..... Anil Pokhrel, Peeyush Soni 1 (201)

Renewable Energy and Material Systems (REMS)

- Comparative study on thermal cracking characteristics and bio-oil production from different microalgae using Py-GC/MS
..... Gang Li, Fang Ji, Xue Bai, Yuguang Zhou, Renjie Dong, Zhigang Huang 1 (208)
- Co-composting of Chinese milk vetch with rice straw and using the compost as a peat substitute of seeding substrate of vegetables
..... Yunfeng Chen, Cheng Hu, Donghai Liu, Shuanglai Li, Yan Qiao 1 (214)

Agro-product and Food Processing Systems (AFPS)

- Investigation of energy-efficient solid desiccant system for wheat drying
..... Shazia Hanif, Muhammad Sultan, Takahiko Miyazaki, Shigeru Koyama 1 (221)
- Effects of dynamic ultra-high pressure homogenization on the structure and functional properties of casein
..... Chunyan Wang, Yaping Ma, Benguo Liu, Zhuangli Kang, Sheng Geng, Jianan Wang, et al. 1 (229)

Cover Caption

- Key technology for deep liquid fertilizer applicator and its application, Northeast Agricultural 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)

- Review of electrostatic system parameters, charged droplets characteristics and substrate impact behaviour from pesticides spraying
..... Samuel Appah, Pei Wang, Mingxiong Ou, Chen Gong, Weidong Jia 2 (1)

Applied Science, Engineering and Technology (ASET)

- Optimization of variables for maximizing efficacy and efficiency in aerial spray application to cotton using unmanned aerial systems
..... Juan Liao, Ying Zang, Xiwen Luo, Zhiyan Zhou, Yubin Lan, Yu Zang, et al. 2 (10)
- Test and evaluation method for endurance performance of electric multi-rotors spraying drones
..... Rui Ming, Zhiyan Zhou, Xiwen Luo, Yubin Lan, Xingang He, Cancan Song, et al. 2 (18)
- Design of precision variable-rate spray system for unmanned aerial vehicle using automatic control method
..... Qi Lian, Feng Tan, Xiaoming Fu, Ping Zhang, Xin Liu, Wei Zhang 2 (29)
- A dynamic tire model based on HPSO-SVM Yuexia Chen, Long Chen, Chen Huang, Ying Lu, Chen Wang 2 (36)

Animal, Plant and Facility Systems (APFS)

- Estimating EC and ionic EC contribution percentage of nutrient solution based on ionic activity
..... Jinxiu Song, Lin Xu, Dongxian He, Satoru Tuskagoshi, Toyoki Kozai, Yutaka Shinohara 2 (42)

- Unevenly distributed LED light produces distinct behavioral preferences and production performance of broilers
 Chenghao Pan, Minsi Lu, Yingping Zhang, Yue Yu, Qiuyan Lu, Yefeng Yang, et al. 2 (49)

Power and Machinery Systems (PMS)

- Evaluating system of rice intensification using a modified transplanter: A smart farming solution toward sustainability of paddy fields in Malaysia Redmond R. Shamshiri, Bala Ibrahim, Siva K. Balasundram, Desa Ahmad, Sima Taheri, Cornelia Weltzien 2 (54)
- Effects of seed furrow liquid spraying device on sowing quality and seedling growth of maize
 Wenjun Wang, Wanpeng Wang, Honglei Jia, Jian Zhuang, Qi Wang 2 (68)
- Development and test of an electric precision seeder for small-size vegetable seeds
 Xin Jin, Qianwen Li, Kaixuan Zhao, Bo Zhao, Zhitao He, Zhaomei Qiu 2 (75)
- Development of a variable rate applicator for uniform fertilizer spreading
 Cheol-woo Han, Sang-yoon Lee, Young-ki Hong, Gi-young Kweon 2 (82)
- Experimental study on driver seat vibration characteristics of crawler-type combine harvester
 Lizhang Xu, Xiaoyu Chai, Zhipeng Gao, Yaoming Li, Yading Wang 2 (90)

Natural Resources and Environmental Systems (NRES)

- Heavy metal contamination in soils of greenhouse vegetable production systems in a cold region of China
 Pin Lv, Zimin Wei, Zhimin Yu, Jizhou Zhang, Limin Wang 2 (98)
- Micro-nondestructive detection of the moisture and ion of rice seeds during germination under salt stress
 Hongwei Yang, Jianwei Ji, Cheng Wang, Liying Zhang, Xiaodong Wang, Ping Song, et al. 2 (103)
- Quantifying extreme climatic conditions for maize production using RZWQM in Siping, Northeast China
 Haijun Liu, Yu Liu, Liwei Zhang, Zhijun Zhang, Zhuangzhuang Gao 2 (111)

Information Technology, Sensors and Control Systems (ITSCS)

- Automated Chinese medicinal plants classification based on machine learning using leaf morpho-colorimetry, fractal dimension and visible/near infrared spectroscopy
 Jinru Xue, Sigfredo Fuentes, Carlos Poblete-Echeverria, Claudia Gonzalez Viejo, Eden Tongson, Hejuan Du, et al. 2 (123)
- Monitoring model for predicting maize grain moisture at the filling stage using NIRS and a small sample size
 Xue Wang, Tiemin Ma, Tao Yang, Ping Song, Zhengguang Chen, Huan Xie 2 (132)
- Design and test of stem diameter inspection spherical robot
 Longzhe Quan, Ci Chen, Yajun Li, Yajing Qiao, Dejun Xi, Tianyu Zhang, et al. 2 (141)
- Radon transform-based motion blurred silkworm pupa image restoration
 Dan Tao, Zhengrong Wang, Guanglin Li, Guangying Qiu 2 (152)

Biosystems, Biological and Ecological Engineering (BBEE)

- Kinetic models of peroxidase activity in potato leaves infected with late blight based on hyperspectral data
 Qinyu Li, Yaohua Hu 2 (160)

Renewable Energy and Material Systems (REMS)

- Comparison and rapid prediction of lignocellulose and organic elements of a wide variety of rice straw based on near infrared spectroscopy
 Abdoulaye Aguibou Diallo, Zengling Yang, Guanghui Shen, Jinyi Ge, Zichao Li, Lujia Han 2 (166)

Agro-product and Food Processing Systems (AFPS)

- Numerical simulation and experimental study on eggshell membrane separation device
 Yuan Chi, Yong Wang, Mengfu Li, Jie Ren, Yujie Chi 2 (173)
- Simulation-based optimization of control policy on multi-echelon inventory system for fresh agricultural products
 Guangyin Xu, Jihao Feng, Fenglei Chen, Heng Wang, Zhenfeng Wang 2 (184)
- Prediction of protein content in rice using a near-infrared imaging system as diagnostic technique
 Lian-Hsiung Lin, Fu-Ming Lu, Yung-Chiung Chang 2 (195)
- Optimization of tracer coating parameters and their effects on the mechanical properties and quality of food-grade tracers for grain traceability Kun Liang, Lingling Zhang, Xiaohe Chen, Mingxia Shen 2 (201)

Safety, Health and Ergonomics (SHE)

- Ergonomic and efficiency analysis of conventional apple harvest process
 Zhao Zhang, Yuanjie Wang, Zhaohua Zhang, Dapeng Li, Zhengze Wu, Rui Bai, et al. 2 (210)

Identification of a novel hydrolase encoded by hy-1 from *Bacillus amyloliquefaciens* for bioremediation of carbendazim contaminated soil and food Ying Li, Miaomiao Chi, Xizhen Ge 2 (218)

Cover Caption

Intelligent vegetable production Laboratory, Henan University of Science and Technology 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)

Overview of emerging technologies in sprinkler irrigation to optimize crop production
 Hong Li, Zakaria Issaka, Yue Jiang, Pan Tang, Chao Chen 3 (1)

Applied Science, Engineering and Technology (ASET)

Influence of UAV flight speed on droplet deposition characteristics with the application of infrared thermal imaging
 Meiqiao Lv, Shupeixiao, Yu Tang, Yong He 3 (10)

Power and Machinery Systems (PMS)

Vision-based adaptive variable rate spraying approach for unmanned aerial vehicles
 Linhui Wang, Yubin Lan, Xuejun Yue, Kangjie Ling, Zhenzhao Cen, Ziyao Cheng, et al. 3 (18)
 Design of bionic mole forelimb intelligent row cleaners
 Honglei Jia, Qi Wang, Dongyan Huang, Longtu Zhu, Mingwei Li, Jiale Zhao 3 (27)

Natural Resources and Environmental Systems (NRES)

Effects of degradable films with different degradation cycles on soil temperature, moisture and maize yield
 Lixia Shen, Yumeng Zhang, Yinchao Lan, Ruofan Li 3 (36)
 Water and nitrogen input optimization for jujube trees under surge root irrigation based on weighted grey correlation model
 Zhiguang Dai, Liangjun Fei, Yun Zhong, Deliang Huang 3 (45)
 Effects of regulated deficit irrigation on soil salinity, physiological processes and fruit quality of gray jujube under desert conditions
 Zhipeng Liu, Chengli Zhu, Shuyu Wu, Weihua Guo, Yitikaer Abudushalamu, Xiyun Jiao, et al. 3 (52)
 Effects of water and nitrogen coupling on growth, physiology and yield of rice
 Yuanyuan Li, Xiaohou Shao, Daoxi Li, Menghua Xiao, Xiujun Hu, Jing He 3 (60)
 Effects of water stress at different growth stages on comprehensive fruit quality and yield in different bunches of tomatoes in greenhouses
 Shuxue Hao, Hongxia Cao, Hubing Wang, Xiaoyan Pan 3 (67)
 Measurement errors on sediment concentration from traditional runoff collection tanks and its correction possibility
 Yuhan Huang, Hui Zhao, Fahu Li, Pujin Yuan, Wei Wang, Guanghui Zhang 3 (77)
 Estimation of infiltration models parameters and their comparison to simulate the onsite soil infiltration characteristics
 Hafiz Umar Farid, Zahid Mahmood-Khan, Ijaz Ahmad, Aamir Shakoor, Muhammad Naveed Anjum,
 Muhammad Mazhar Iqbal, et al. 3 (84)

Information Technology, Sensors and Control Systems (ITSCS)

Intelligent automated system based on a fuzzy logic system for plant protection product control in orchards
 P. Berk, A. Belšak, D. Stajanko, M. Lakota, N. Muškinja, M. Hočevar, J. Rakun 3 (92)
 Classification method of cultivated land based on UAV visible light remote sensing
 Weicheng Xu, Yubin Lan, Yuanhong Li, Yangfan Luo, Zhenyu He 3 (103)
 Fish as a source of acoustic signal measurement in an aquaculture tank: Acoustic sensor based time frequency analysis
 Shahbaz Gul Hassan, Shakeel Ahmad, Shafqat Iqbal, Ehsan Elahi, Murtaza Hasan, Daoliang Li, et al. 3 (110)
 Optimal control algorithm of fertigation system in greenhouse based on EC model
 Yong Wu, Li Li, Shuaishuai Li, Hongkang Wang, Man Zhang, Hong Sun, et al. 3 (118)
 Structural design and thermal performance simulation of shade roof of double-slope greenhouse for mushroom-vegetable cultivation
 Yunfei Ma, Xinxing Li, Zetian Fu, Lingxian Zhang 3 (126)
 Spectral difference analysis and identification of different maturity blueberry fruit based on hyperspectral imaging using spectral index
 Hao Ma, Kaixuan Zhao, Xin Jin, Jiangtao Ji, Zhaomei Qiu, Song Gao 3 (134)

Biosystems, Biological and Ecological Engineering (BBEE)

- A photosynthesis continuous monitoring system for CAM plants Yongsan Cheng, Dongxian He 3 (141)
- Effects of Cu stress on physiological, biochemical, and spectral properties of wheat at different growth stages
..... Zhongliang Su, Guodong Wang, Liqiang Xu, Jinheng Zhang, Xueyan Liu 3 (147)

Renewable Energy and Material Systems (REMS)

- Prediction of methane production performances based on determination of organic components for different vegetable wastes
..... Fanfan Cai, Hu Yan, Ruihong Zhang, Guangqing Liu, Chang Chen 3 (154)
- Impacts of fuel feeding methods on the thermal and emission performance of modern coal burning stoves
..... Riaz Ahmad, Yuguang Zhou, Nan Zhao, Crispin Pemberton-Pigott, Harold John Annegarn, Muhammad Sultan, et al. 3 (160)
- Optimization of fermentation factors to enhance rice straw degradation ability using a microbial consortium LZP-12
..... Guoxiang Zheng, Chenyang Zhou, Ting Yin, Zhaoxin Lu, Shuang Ai 3 (168)

Agro-product and Food Processing Systems (AFPS)

- Developing a screw conveyor in radio frequency systems to improve heating uniformity in granular products
..... Hongxue Zhou, Shaojin Wang 3 (174)
- LW-NIR hyperspectral imaging for rapid prediction of TVC in chicken flesh
..... Hui Wang, Hongju He, Hanjun Ma, Fusheng Chen, Zhuangli Kang, Mingming Zhu, et al. 3 (180)
- Effects of different drying methods on drying kinetics and physicochemical properties of *Chrysanthemum morifolium* Ramat
..... Borui Li, Jueyi Lin, Zhian Zheng, Hao Duan, Dong Li, Min Wu 3 (187)

Safety, Health and Ergonomics (SHE)

- Graphene oxide/multi-walled carbon nanotubes/gold nanoparticle hybridfunctionalized disposable screen-printed carbon electrode to determine Cd (II) and Pb (II) in soil
..... Hui Wang, Yuan Yin, Guo Zhao, Fernando Bienvenido, Isabel M. Flores-Parrad, Zhiqiang Wang, et al. 3 (194)

Cover Caption

- Research Team of Mechanized Maize Production, China Agricultural University 3 (Cover, Inside Covers)
- Briefing IJABE with updated SCI JIF 3 (Back Cover)

Information

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

Applied Science, Engineering and Technology (ASET)

- Optimization of control parameters of droplet density in citrus trees using UAVs and the Taguchi method
..... Chaojun Hou, Yu Tang, Shaoming Luo, Jintian Lin, Yong He, Jiajun Zhuang, et al. 4 (1)
- Development of agricultural bionic four-legged robot: Effect of head movement adjustment on the stability of goats
..... Fu Zhang, Yafei Wang, Shuai Teng, Limin Zheng, Jiajia Wang, Zijun Chen 4 (10)
- Convergent evolution inspired serrated structure for improving efficiency of soil imprinting and its mechanism investigation
..... Zhihong Zhang, Ying Li, Jin Tong, Stephen Carr 4 (16)

Animal, Plant and Facility System (APFS)

- Effects of different litters on ammonia emissions from chicken manure
..... Hequn Tan, Meng Li, Dengfei Jie, Yafang Zhou, Xin'an Li 4 (27)
- Modification of perchery system: Preference for ramps rather than ladders during early adaptation period for cage-reared pullets
..... Hongya Zheng, Baoming Li, Qin Tong, Gang Chen, Xuanyang Li 4 (34)
- Effects of ripple cross angles and turbulence models on wet curtain resistance
..... Tao Ding, Lumeng Fang, Zhengxiang Shi, Baoming Li, Yang Zhao 4 (43)

Power and Machinery Systems (PMS)

- Design and experiment of anti-vibrating and anti-wrapping rotary components for subsoiler cum rotary tiller
..... Kan Zheng, Allen D. McHugh, Hongwen Li, Qingjie Wang, Caiyun Lu, Hongnan Hu, et al. 4 (47)

Effects of subsoiling on working quality and total power consumption of high stubble straw returning machine	Hua Zhou, Jumin Zhang, Junfang Xia, H. M. Tahir, Yinghao Zhu, Chunling Zhang	4	(56)
Design method and experiment of machinery for combined application of seed, fertilizer and herbicide	Xin Huang, Weiwei Wang, Zhaodong Li, Qingqing Wang, Cunxi Zhu, Liqing Chen	4	(63)
Design and experiment of electro hydraulic active suspension for controlling the rolling motion of spray boom	Longfei Cui, Xinyu Xue, Feixiang Le, Hanping Mao, Suming Ding	4	(72)
Development of a low-cost quadrotor UAV based on ADRC for agricultural remote sensing	Songchao Zhang, Xinyu Xue, Chen Chen, Zhu Sun, Tao Sun	4	(82)
Design and field test of crosswise belt type whole plastic-film ridging-mulching corn seeder on double ridges	Fei Dai, Wenjuan Guo, Xuefeng Song, Ruijie Shi, Wuyun Zhao, Fengwei Zhang	4	(88)
Design and experiment of seeding performance monitoring system for suction corn planter	Kun Liu, Shujuan Yi	4	(97)
Structure optimization of cam executive component and analysis of precisely applying deep-fertilization liquid fertilizer	Wenqi Zhou, Jinwu Wang, Han Tang	4	(104)

Natural Resources and Environmental Systems (NRES)

Development of yield forecast model using multiple regression analysis and impact of climatic parameters on spring wheat	Purbasha Mistry, Ganesh Bora	4	(110)
---	------------------------------	---	-------

Information Technology, Sensors and Control Systems (ITSCS)

Detection and tracking of pigs in natural environments based on video analysis	Deqin Xiao, Aijing Feng, Jian Liu	4	(116)
Segmentation algorithm for Hangzhou white chrysanthemums based on least squares support vector machine	Qinghua Yang, Shaoliang Luo, Chun Chang, Yi Xun, Guanjun Bao	4	(127)
Leaf shape simulation of castor bean and its application in nondestructive leaf area estimation	Hailin Wei, Xumeng Li, Ming Li, Huang Huang	4	(135)
Depth recovery for unstructured farmland road image using an improved SIFT algorithm	Lijian Yao, Dong Hu, Zidong Yang, Haibin Li, Mengbo Qian	4	(141)
Estimating the severity of apple mosaic disease with hyperspectral images	Songtao Ban, Minglu Tian, Qingrui Chang	4	(148)
Maturity assessment of tomato fruit based on electrical impedance spectroscopy	Jinyang Li, Yao Xu, Wenjing Zhu, Xinhua Wei, Hongwei Sun	4	(154)

Biosystems, Biological and Ecological Engineering (BBEE)

Environmental sustainability of grey water footprints in Peshawar Basin: Current and future reduced flow scenarios for Kabul River	Tariq Khan, Hizbullah Khan	(162)
---	----------------------------	-------

Renewable Energy and Material Systems (REMS)

Effects of urea ammonia pretreatment on the batch anaerobic fermentation efficiency of corn stovers	Qiang Li, Fuli Yang, Guoxiang Zheng, Zhengjun Guan	4	(169)
Full utilization of nutrients in rice straw by integrating mushroom cultivation, biogas production, and fertilizer use	Wenbo Huang, Akiber Chufo Wachemo, Hairong Yuan, Xiujin Li	4	(174)
Effects of compost particle size, moisture content and binding agents on co-compost pellet properties	Lakshika Hettiarachchi, Nilanthi Jayathillake, Sudarshana Fernando, Sanja Gunawardena	4	(184)

Agro-product and Food Processing Systems (AFPS)

Effects of dry fog humidification on pericarp browning and quality of litchi fruit stored at low temperature	Lu Xiao, Taotao Li, Guoxiang Jiang, Afiya John, Dandan Zhang, Wenyan Jin, et al.	4	(192)
Dimensionless variable groups for the free-fall grain dryer	Supitchar Meesukchaosumran, Tawit Chitsomboon	4	(197)

Cover Caption

Crop Protection and Environmental Engineering Technology Research Center of Nanjing Research Institute for Agricultural Mechanization		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)

- Research exploring greenhouse environment control over the last 50 years Tadashi Takakura 5 (1)
- Nutrients removal and biomass production from anaerobic digested effluent by microalgae: A review
..... Gang Li, Xue Bai, Huan Li, Zhitao Lu, Yuguang Zhou, Yingkuan Wang, et al. 5 (8)

Applied Science, Engineering and Technology (ASET)

- An effective spray drift-reducing method for a plant-protection unmanned aerial vehicle
..... Yayong Chen, Chaojun Hou, Yu Tang, Jiajun Zhuang, Jintian Lin, Shaoming Luo 5 (14)
- Visual response effects of western flower thrips manipulated by different light spectra
..... Qihang Liu, Yueli Jiang, Jin Miao, Zhongjun Gong, Tong Li, Yun Duan, et al. 5 (21)

Animal, Plant and Facility System (APFS)

- Towards sustainable plant factories with artificial lighting (PFALs) for achieving SDGs Toyoki Kozai 5 (28)
- Effects of short light/dark cycles on photosynthetic pathway switching and growth of medicinal *Dendrobium officinale* in aeroponic cultivation Yongsan Cheng, Dongxian He, Jie He, Genhua Niu, Fang Ji 5 (38)
- Effects of LED light quality on the growth of pepper seedling in plant factory
..... Nan Liu, Fang Ji, Lijun Xu, Dongxian He 5 (44)
- Light spectrum preference of Nile Tilapia (*Oreochromis niloticus*) under different hunger levels
..... Guang Jin, Jian Zhao, Yadong Zhang, Gang Liu, Dezhao Liu, Songming Zhu, et al. 5 (51)
- Damage index estimation by analysis of meteorological disasters on film plastic greenhouses
..... Heeryong Ryu, Mankwon Choi, Myeongwhan Cho, Inho Yu, Seungyu Kim 5 (58)

Power and Machinery Systems (PMS)

- Performance of waterjet on cutting maize stalks: A preliminary investigation
..... Hongnan Hu, Hongwen Li, Qingjie Wang, Jin He, Caiyun Lu, Yingbo Wang, et al. 5 (64)
- Experiment and analysis of potato-soil separation based on impact recording technology
..... Zhongcai Wei, Hongwen Li, Yijin Mao, Chuanzhu Sun, Xueqiang Li, Wenzheng Liu, et al. 5 (71)
- Simulation and experiment on prediction of total rice seeds mass in vibrating tray for vacuum plate seeder
..... Zhan Zhao, Mingzhi Jin, Chunjie Tian, Fang Qin 5 (81)
- Critical equation of seedling block falling off in transplanting process and the optimization experiment of rape blanket seedling transplanter
..... Lan Jiang, Chongyou Wu, Qing Tang, Min Zhang, Gang Wang, Jun Wu 5 (87)
- Range formula based on angle of dispersion and nozzle configuration from an impact sprinkler
..... Yue Jiang, Zakaria Issaka, Hong Li, Pan Tang, Chao Chen 5 (97)
- Analysis and evaluation of vibration characteristics of a new type of electric mini-tiller based on vibration test
..... Po Niu, Jian Chen, Jindou Zhao, Zeyong Luo 5 (106)
- Development of a PVDF sensor for potted seedling clamping force of vegetable transplanting
..... Jiangtao Ji, Jingwei Sun, Xin Jin, Mingyong Li, Xinwu Du 5 (111)

Natural Resources and Environmental Systems (NRES)

- Quantitative analysis of irrigation water productivity in the middle reaches of Heihe River Basin, Northwest China
..... Donghao Li, Taisheng Du, Yue Cao, Manoj Kumar Shukla, Di Wu, Xiuwei Guo, et al. 5 (119)
- Modelling soil water dynamics and root water uptake for apple trees under water storage pit irrigation
..... Xianghong Guo, Tao Lei, Xihuan Sun, Juanjuan Ma, Lijian Zheng, Shaowen Zhang, et al. 5 (126)
- Influence analysis of sprinkler irrigation effectiveness using ANFIS
..... Zhongwei Liang, Xiaochu Liu, Guilin Wen, Xuefeng Yuan 5 (135)

Information Technology, Sensors and Control Systems (ITSCS)

- A novel wavelength selection strategy for chlorophyll prediction by MWPLS and GA
..... Haojie Liu, Minzan Li, Junyi Zhang, Dehua Gao, Hong Sun, Man Zhang, et al. 5 (149)
- Measurement and prediction of tomato canopy apparent photosynthetic rate
..... Jian Yin, Xinying Liu, Yanlong Miao, Yang Gao, Ruicheng Qiu, Man Zhang, et al. 5 (156)
- Association rule mining algorithm based on Spark for pesticide transaction data analyses
..... Xiaoning Bai, Jingdun Jia, Qiwen Wei, Shuaiqi Huang, Weicheng Du, Wanlin Gao 5 (162)

Biosystems, Biological and Ecological Engineering (BBEE)

- Development of automatic and efficient immuno-separator of foodborne pathogenic bacteria using magnetophoresis and magnetic mixing Yuhe Wang, Gaozhe Cai, Maohua Wang, Jianhan Lin 5 (167)
- Reduction of environmental pollution by using RTK-navigation in soil cultivation Damijan Kelc, Denis Stajniko, Peter Berk, Jurij Rakun, Peter Vindiš, Miran Lakota 5 (173)

Renewable Energy and Material Systems (REMS)

- Treatment of recalcitrant wastewater and hydrogen production via microbial electrolysis cells Ruixia Shen, Lixin Zhao, Jianwen Lu, Jamison Watson, Buchun Si, Xi Chen, et al. 5 (179)
- Biorefinery process for production of bioactive compounds and bio-oil from *Camellia oleifera* shell Yunpu Wang, Linyao Ke, Qi Yang, Yujie Peng, Yanzhe Hu, Leilei Dai, et al. 5 (190)

Cover Caption

- Plant Environmental Physiology Laboratory, China Agricultural University 5 (Cover, Inside Covers)
- Congratulations on the 40th Anniversary of AAPE 5 (Back Cover)

Information

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

Applied Science, Engineering and Technology (ASET)

- Development of droplet characteristics prediction models for air induction nozzles based on wind tunnel tests Juan Liao, Andrew John Hewitt, Pei Wang, Xiwen Luo, Ying Zang, Zhiyan Zhou, et al. 6 (1)

Animal, Plant and Facility System (APFS)

- Evaluation of nesting behavior of individual laying hens in an enriched colony housing by using RFID technology Jofran L. Oliveira, Hongwei Xin, Kailao Wang, Yang Zhao 6 (7)
- Impacts of LED spectral quality on leafy vegetables: Productivity closely linked to photosynthetic performance or associated with leaf traits? Jie He, Lin Qin, Wah Soon Chow 6 (16)
- Effects of light intensity and photoperiod on runner plant propagation of hydroponic strawberry transplants under LED lighting Jianfeng Zheng, Dongxian He, Fang Ji 6 (26)
- Usefulness of LED lightings in cereal breeding on example of wheat, barley and oat seedlings Piotr Stefański, Patrycja Siedlarz, Przemysław Matysik, Krystyna Rybka 6 (32)

Power and Machinery Systems (PMS)

- Development of transplanting manipulator for hydroponic leafy vegetables Bo Li, Song Gu, Qi Chu, Yanli Yang, Zhongjian Xie, Kaijun Fan, et al. 6 (38)
- Optimized design and experiments of a rotary-extensive-type flowerpot seedling transplanting mechanism Daqing Yin, Jiazhao Wang, Shuo Zhang, Nuoyi Zhang, Maile Zhou 6 (45)
- Design and performance evaluation of a variable-rate orchard sprayer based on a laser-scanning sensor Jichen Cai, Xiu Wang, Yuanyuan Gao, Shuo Yang, Chunjiang Zhao 6 (51)
- Design of obstacle avoidance controller for agricultural tractor based on ROS Zhengduo Liu, Zhaoqin Lü, Wenxiu Zheng, Wanzhi Zhang, Xiangxun Cheng 6 (58)
- Behavior modelling and sensing for machinery operation using smartphone sensor data: A case study of forage maize sowing Caicong Wu, Zhibo Chen, Dongxu Wang, Zhihong Kou, Yaping Cai, Weizhong Yang 6 (66)
- Effects of blade sliding cutting angle and stem level on cutting energy of rice stems Chunling Zhang, Liqing Chen, Junfang Xia, Jumin Zhang 6 (75)

Natural Resources and Environmental Systems (NRES)

- Divergent responses of soil carbon and nitrogen pools to short-term nitrogen addition between two plantations in Northeast China Yedong Li, Bo Wang, Sen Dou, Haoyue Shen, Liyong Mei, Yang Zhang, et al. 6 (82)
- Water use efficiency and yield responses of cotton to field capacity-based deficit irrigation in an extremely arid area of China Haifeng Li, Zhiming Qi, Dongwei Gui, Fanjiang Zeng 6 (91)

Effects of regulated deficit irrigation on the growth and berry composition of <i>Cabernet Sauvignon</i> in Ningxia	Rui Wang, Pengke Yan, Quan Sun, Baofeng Su, Junxiang Zhang	6 (102)
--	--	---------

Information Technology, Sensors and Control Systems (ITSCS)

Fuzzy intelligent control method for improving flight attitude stability of plant protection quadrotor UAV	Zhihui He, Wanlin Gao, Xiongkui He, Minjuan Wang, Yunling Liu, Yue Song, et al.	6 (110)
Classification of different walnut varieties using low-field nuclear magnetic resonance technology and cluster analysis	Ping Song, He Gao, Baojun Zhao, Aiguo Zhang, Feng Liu	6 (116)
Rice seeds identification based on back propagation neural network model	Xuebin Feng, Peijun He, Huaxi Zhang, Wenqing Yin, Yan Qian, Peng Cao, et al.	6 (122)
Research on recognition for cotton spider mites' damage level based on deep learning	Lili Yang, Jun Luo, Zhenpeng Wang, Yan Chen, Caicong Wu	6 (129)
Method for segmentation of overlapping fish images in aquaculture	Chao Zhou, Kai Lin, Daming Xu, Jintao Liu, Song Zhang, Chuanheng Sun, et al.	6 (135)
Determination of water content in corn stover silage using near-infrared spectroscopy	Maoqun Zhang, Chao Zhao, Qianjun Shao, Zidong Yang, Xuefen Zhang, Xiaofeng Xu, et al.	6 (143)
Estimating leaf water content at the leaf scale in soybean inoculated with arbuscular mycorrhizal fungi from in situ spectral measurements	Weiping Kong, Wenjiang Huang, Xianfeng Zhou, Hugh Mortimer, Lingling Ma, Lingli Tang, et al.	6 (149)
New collision detection method for simulating virtual plant populations	Weilong Ding, Zangxin Wan, Yan Xu, Nelson Max	6 (156)
Measurement of soil electrical conductivity based on direct digital synthesizer (DDS) and digital oscilloscope	Xiaoshuai Pei, Chao Meng, Minzan Li, Wei Yang, Peng Zhou	6 (162)
Comparison of manual and automatic barcode detection in rough horticultural production systems	Felix Eyahanyo, Thomas Rath	6 (169)

Biosystems, Biological and Ecological Engineering (BBEE)

Metagenome analysis reveals potential microbial functions in topsoil of wheat–maize rotation system with five-year application of fertilizers	Yujun Shen, Lixin Zhao, Haibo Meng, Hongsheng Cheng, Jingtao Ding, Jiarui Wang, et al.	6 (177)
Assessing heavy metal pollution and potential ecological risk of tea plantation soils	Zuoping Zhao, Sha Yan, Min Duan, Jing Fu, Qi Wang, Zhifeng Liu, et al.	6 (185)
Bioremediation of nitrogen- and phosphorus-polluted aquaculture sediment by utilizing combined immobilized effective microorganisms and sediment aeration technology	Liangkai Wang, Xiaohou Shao, Ming Xu, Shuang Chen	6 (192)

Renewable Energy and Material Systems (REMS)

Microwave-assisted pyrolysis of vegetable oil soapstock: Comparative study of rapeseed, sunflower, corn, soybean, rice, and peanut oil soapstock	Yunpu Wang, Shumei Zhang, Qiuhaoh Wu, Dengle Duan, Yuhuan Liu, Roger Ruan, et al.	6 (202)
---	---	---------

Agro-product and Food Processing Systems (AFPS)

Detection of blood spots in eggs by hyperspectral transmittance imaging	Zhe Feng, Chengqiao Ding, Weihao Li, Di Cui	6 (209)
--	---	---------

Cover Caption

Centre for Chemicals Application Technology of CAU		6 (Cover, Inside Covers)
Briefing IJABE with updated SCI JIF		6 (Back Cover)

Information

2019 IJABE Reviewer Acknowledgement		6 (215)
Total Table of Contents in 2019		6 (220)
Third-term IJABE International Editorial Board		6 (Front Insert I)