

农业工程

7
2018

AGRICULTURAL ENGINEERING

NONGYE GONGCHENG

第8卷 Vol.8

招募
开始
2018

Q K 1 8 4 7 9 4 7



2018农业机械意德
专业技术考察培训团

FARM MACHINERY INVESTIGATION GROUP

2大国际农机知名展会/意大利EIMA展、德国汉诺威畜牧展

3家农机制造企业+1家农场+1家经销商

1个职业农民培训中心/3个国家12个知名城市观光

联系人：冉佳 手机：18600023173（微信）

农业工程

NONGYE GONGCHENG

2018年 第7期(第8卷)

目 次

• 装备与机械化 •

基于文献计量的农业机械国际研究态势	袁建霞	胡小鹿	柏雨岑	邢 颖	张秋菊	(1)
农用高架作业车技术发展现状	秦伟桦	张红梅	种东风	赵永伟	马京民	(5)
基于 DEA 的湖北省农业机械化投入产出效率			徐 密	邹 韵	涂 鸣	(12)
浙江省青毛豆全程机械化研究及发展建议	童一宁	楼婷婷	姚爱萍	王 涛	柳国光	(17)
天津市蓟州区苗木生产机械化存在问题与对策					赵 静	(21)

• 信息与电气化 •

基于 PIC 单片机的家禽在线自动称量分级控制系统	张银桥	伟利国	张小超	赵化平	(24)	
物联网技术应用于农业发展			温留伟	孙战胜	王 勇	(27)
基于北斗自动驾驶比例电磁阀的控制方法	耿 鹏	李 欢	张胜荣	彭少然	(30)	
信息技术在农机领域的应用及发展					张艳丽	(32)
基于 Arduino 的简易水情检测系统设计与试验					田 华	(34)
基于深度学习的植物病虫害图像识别	安强强	张 峰	李赵兴	张雅琼	(38)	
基于 GPS 技术的土地移动监控测量系统优化设计	山 锋	张 亚	刘 杰		(41)	

• 生物环境与能源 •

生态文明视域下农村地质灾害防治工作对策建议	陈 鹏	李想姣	(45)			
新时代化肥使用量零增长行动措施和实施效果	程兆东	王永刚	康怀启	李群铭	王会海	(49)
车库式干发酵产沼技术在农业废弃物资源化利用领域的参数分析			盛力伟	李 剑	(54)	
基于资源循环利用的种养生态工程发展对策					黄琼君	(59)

• 农副产品加工与贮藏 •

基于机器视觉的香梨雌雄自动识别方法	李亚硕	祁雁楠	吕程序	毛文华	周丽萍	赵 博	(61)
PDMS 在油脂工厂三维设计中的应用	闫雪峰	任嘉嘉	马邦淋	徐长荣	韩高峰		(66)

• 水土工程 •

农村小水电增效扩容装机复核及机组选型	谭剑波	何自立	王立青	(70)	
甘肃省公路建设中的水土保持措施			贺 洁	(74)	
农田水利管理体制改革困境				王兴华	(77)

• 土地资源管理 •

- 珠江口耕地土壤有机碳影响因子体系构建 周伟文 (79)
福清市耕地质量现状及提升对策 林明义 (82)

• 设计制造及理论研究 •

- 空化条件下轴流泵叶轮静应力特性 高江永 侯永胜 杨正军 张桐林 (84)
秸秆粉碎机关键部件设计 王启芳 (91)
青贮饲料收获机电控磨刀装置设计 李雷霞 赫志飞 顾玲玲 张丽丽 华荣江 (95)
马铃薯微型原种播种机关键部件设计 宋元萍 (98)
巨菌草播种机漏播补种系统设计 陆麟麟 郑书河 祝金虹 杨 薇 (101)
栅条滚筒式干果分级机设计 史增录 唐学鹏 赵守瑞 白圣贺 张学军 (105)

• 教学研究 •

- 控制理论类课程的案例法教学设计 刘莫尘 娄 伟 李 扬 宋成宝 (110)
工序质量统计分析实验的一体化教学法 郭文斌 李旭英 韩宝生 郁志宏 (113)
翻转课堂在农业专业英语教学中的应用 景秀娟 (117)
高校园林专业英语课程教学模式改革 张彦春 (119)

• 农学与生物技术 •

- 海南省瓜果病虫害防治成效、问题及对策 薛英健 (122)
日照市夏玉米“三位一体”高产栽培技术 丰 燕 高丽华 (125)
温度和光照对藜麦幼苗生长发育的影响 曲 波 张谨华 王 鑫 赵红梅 (128)
设施蔬菜水肥一体化技术应用 张 烨 (132)

• 农业经济管理 •

- 政策性农业保险问题与对策 刘 健 高倩文 (134)
陕西省周至县猕猴桃营销推广策略 王粉萍 (137)
中国农业资本深化对农业经济的影响 段 磊 (140)
菲律宾农业基本状况及政策 文双雅 高志强 (142)
乡村旅游与精准扶贫融合发展实践
——以吉林省敦化市六顶山地区为例 韩燕妮 (146)

- 乡村旅游资源可持续发展评价指标体系构建 范彬彬 (148)

• 行业动态 •

- 器利农桑一甲子 辛勤耕耘六十载
——纪念《农业机械》杂志创刊 60 周年 晓 琳 (前插 1)

AGRICULTURAL ENGINEERING

Vol. 8 No. 7 2018

Contents

Equipment and Mechanization

- International Research Situation of Agricultural Machinery Based on Bibliometrics YUAN Jianxia, HU Xiaolu, BAI Yucen, XING Ying, ZHANG Qiuju (1)
Technology Development Status of Agricultural High Frame Field Operation Vehicle QIN Weihua, ZHANG Hongmei, CHONG Dongfeng, ZHAO Yongwei, MA Jingmin (5)
Input-output Efficiency of Agricultural Mechanization in Hubei Province Based on DEA XU Mi, ZOU Yun, TU Ming (12)
Study and Development Suggestion on Green Soybean Entire Mechanization in Zhejiang Province TONG Yining, LOU Tingting, YAO Aiping, WANG Tao, LIU Guoguang (17)
Problems and Strategies of Mechanization of Seedling Production in Jizhou Area of Tianjin City ZHAO Jing (21)

Information and Electrification

- Design of Online Automatic Weighing and Grading Control System for Poultry Based on PIC Single Chip Microcomputer ZHANG Yiniao, WEI Liguo, ZHANG Xiaochao, ZHAO Huaping (24)
IoT Technology Applied to Agricultural Development WEN Liuwei, SUN Zhansheng, WANG Yong (27)
Control Method of Automatic Driving Proportional Electromagnetic Valve Based on Beidou GENG Biao, LI Huan, ZHANG Shengrong, PENG Shaoran (30)
Application and Development of Information Technology in Agricultural Machinery Field ZHANG Yanli (32)
Design and Implementation of Water Regime Detection System Based on Arduino TIAN Hua (34)
Plant Diseases and Insect Pests Images Identification Based on Deep Learning AN Qiangqiang, ZHANG Feng, LI Zhaoxing, ZHANG Yaqiong (38)
Optimization Design of Land Mobile Monitoring and Measuring System Based on GPS Technology SHAN Feng, ZHANG Ya, LIU Jie (41)

Biological Environment and Energy

- Countermeasures for Prevention and Control of Geological Disasters in Countryside under Vision of Ecological Civilization CHEN Biao, LI Xiangjiao (45)
Action Measures and Effects of Zero Growth Action of Fertilizer Use in New Era CHENG Zhaodong, WANG Yonggang, KANG Huaiqi, LI Qunming, WANG Huihai (49)
Parameter Analysis of Garage Type Dry Fermentation Biogas Production Technology in Field of Agriculture Waste Utilization SHENG Liwei, LI Jian (54)
Development Countermeasures of Breeding Ecological Engineering Based on Resource Recycling HUANG Qiongjun (59)

Processing and Storage of Farm and Sideline Products

- Automatic Identification of Male and Female Pear Based on Machine Vision LI Yashuo, QI Yannan, LV Chengxu, MAO Wenhua, ZHOU Liping, ZHAO Bo (61)
Application of PDMS for 3D Oil Plant Design YAN Xuefeng, REN Jiajia, MA Banglin, XU Changrong, HAN Gaofeng (66)

Water- soil Engineering

Turbine Selection and Installation Review of Synergism and Capacity Enlarging for Rural Hydropower Stations	TAN Jianbo, HE Zili, WANG Liqing (70)
Soil and Water Conservation Measures in Highway Construction in Gansu Province	HE Jie (74)
Difficulties of Management System in Reform of Water Conservancy	WANG Xinghua (77)

Land Resource Management

Construction of Soil Organic Carbon Influencing Factors System in Pearl River Estuary	ZHOU Weiwen (79)
Present Situation and Promotion Countermeasures of Cultivated Land Quality in Fuqing City	LIN Mingyi (82)

Design, Manufacture and Theoretical Research

Stress Characteristics of Axial Flow Pump Impeller under Cavitation Conditions	GAO Jiangyong, HOU Yongsheng, YANG Zhengjun, ZHANG Tonglin (84)
Design of Key Components of Straw Pulverizer	WANG Qifang (91)
Design of Electric Control Sharpener Device for Silage Harvester	LI Leixia, HE Zhifei, GU Lingling, ZHANG Lili, HUA Rongjiang (95)
Key Components Design of Potato Micro Seed Planter	SONG Yuanping (98)
Design for Sowing Resow System of Giant Juncao Planter	LU Linlin, ZHENG Shuhe, ZHU Jinhong, YANG Wei (101)
Design of Grid Cylinder Type Dried Fruit Sorting Machine	SHI Zenglu, TANG Xuepeng, ZHAO Shourui, BAI Shenghe, ZHANG Xuejun (105)

Research on Teaching

Case Teaching Design of Control Theory Courses	LIU Mochen, LOU Wei, LI Yang, SONG Chengbao (110)
Integrated Teaching Method of Procedure Quality Statistical Analysis Experiment	GUO Wenbin, LI Xuying, HAN Baosheng, YU Zhihong (113)
Application of Flipped Class in Agricultural English Teaching	JING Xiujuan (117)
Reform of Teaching Mode of English Curriculum for Garden Specialty in Colleges and Universities	ZHANG Yanchun (119)

Agronomy and Biotechnology

Achievements, Problems and Countermeasures of Disease and Pest Control of Melon and Fruit in Hainan Province	XUE Yingjian (122)
Trinity High Yield Cultivation Techniques for Summer Maize in Rizhao	FENG Yan, GAO Lihua (125)
Effects of Temperature and Light on Growth and Development of Quinoa Seedlings	QU Bo, ZHANG Jinhua, WANG Xin, ZHAO Hongmei (128)
Application of Integrated Water and Fertilizer Technology for Facilities Vegetables	ZHANG Ye (132)

Management of Agricultural Economy

Problems and Countermeasures of Policy-based Agricultural Insurance in China	LIU Jian, GAO Qianwen (134)
Marketing and Promotion Strategies of Kiwifruit in Zhouzhi County, Shaanxi Province	WANG Fenping (137)
Impact of Agricultural Capital Deepening on Agricultural Economy in China	DUAN Lei (140)
Basic Situation and Policy in Philippines Agriculture	WEN Shuangya, GAO Zhiqiang (142)
Integration and Development of Rural Tourism and Precision Poverty Alleviation Taking Sixdingshan District of Duanhua City, Jilin Province as an Example	HAN Yanni (146)
Construction of Evaluation Index System for Sustainable Development of Rural Tourism Resources	FAN Binbin (148)

