



中国高校优秀科技期刊
《CAJ-CD规范》执行优秀期刊
全国高校实验室工作研究会会刊

ISSN 1672-4550
CN 51-1653/N
CODEN SKYJA9

实验科学与技术

EXPERIMENT SCIENCE AND TECHNOLOGY

第13卷 第1期 Vol.13 No.1



ISSN 1672-4550



四川省高等教育学会 主办
电子科技大学

2015

万方数据

实验科学与技术

SHIYAN KEXUE YU JISHU

第 13 卷第 1 期(总第 68 期)

2015 年 02 月 28 日出版 双月刊

2003 年 6 月创刊

主管单位:四川省教育厅

主办单位:四川省高教学会

电子科技大学

主 编:沈 江

编辑出版:《实验科学与技术》编辑部

地 址:成都市建设北路二段四号

邮政编码:610054

Tel:028-83201742

028-61830178(投稿)

E-mail:syglk@uestc.edu.cn

网 址:www.sy.uestc.edu.cn

印 刷:成都蜀雅印务有限公司

发行范围:国内外公开发售

国内发行:成都市邮政局

国外发行:中国国际图书贸易集团有
限公司,中国学术期刊(光
盘版)国际联合征订

订阅方式:全国各地邮局;

本刊编辑部

中国标准连续出版物号:

ISSN 1672-4550

CN 51-1653/N

邮发代号:62-287

广告经营许可证:5100004001018

定 价:15.00 元/期;

90.00 元/全年

本刊已由下列数据库、信息库收录,
如果作者不同意其文章被收录,请在
来稿时申明。

中国核心期刊(遴选)数据库

万方数据—数字化期刊群

中国科技论文在线(期刊)

中国台湾华艺在线全文数据库

中国期刊全文数据库

中国报刊订阅指南信息库

维普期刊网

期刊基本参数:CN51-1653/N * 2003

* b * 16 * 224 * zh * P * ¥15.00 *

3000 * 70 * 2015 - 02

目 次

· 实验技术 ·

- 基于自平衡加载装置的空间节点加载试验设计 王可怡,朱文正,王富庆 (1)
- 波动光学条纹公式及其条纹级次的讨论 王小平,江 键,许佳捷 (4)
- 关于实验教学录像片制作及应用的思考 白广梅,林兴桃,任海荣 (6)
- 数字图像相关法在力学实验教学中的应用 朱建国 (9)
- 电火花线切割零件方位一致性的探讨与实现 徐永礼,庞祖高,王玉文,等 (12)
- 超声波声速测量实验的拓展 朱道云,吴 肖,庞 玮,等 (15)
- 组合逻辑实验电路设计方法研究 阎 群,韩守梅,木春梅,等 (17)
- 胶体性质实验的综合设计与实践 熊 辉,梅付名,王宏伟,等 (21)
- 硅的反应离子刻蚀实验研究 彭明发,何小蝶,吴海华 (25)
- 红绿蓝三色 LED 调色特性的实验研究 钱惠国 (27)
- 单色 LED 的变温光谱特性研究 李莉君,熊永红 (31)
- 基于 PLC 和变频器的车床控制系统 余松科,方 方,张 晴,等 (34)

· 软件开发与应用 ·

- 神经网络在聚氨酯配方设计中的应用研究 滕 鑫,唐颂超,徐世爱,等 (38)
- 基于 SOPC 及 USB 键盘的简易电子琴综合设计实验 田淑珍,全成斌,董代洁 (44)

· 实验教学改革、探索与创新 ·

- 机电工程实验教学保障体系建设与探索 刘元朋,蒋志强 (49)
- 数字地形测量学教学方法的创新探索与实践 花向红,向 东,邹进贵 (53)
- 基因工程实验课程改革探析与实践 郝 刚,李 卉,智艳平,等 (56)
- 基于 BPR 的实验教学管理系统的功能规划 刘 勇,朱 涛,张 挺,等 (60)
- 电子电路基础实验系统研制 李锡华,施红军,叶险峰 (64)
- 基于 Proteus 的任务驱动型实验教学模式研究 元泽怀,陈晓明 (67)
- 表面处理课程实验的教学改革与探索 张莹琪,赵晓红,李 冰,等 (70)
- 发挥病理标本在动物病理学实验教学中的作用 赖为民,耿 毅,彭 西,等 (72)
- 基于 PBL 理论的电子政务实验教学体系研究 孟川瑾,赵 燕 (74)
- 生物工程本科专业实验教学改革探索 王 蕾,赵宏宇,季 祥 (77)
- 环境科学紧缺专业实验教学改革初探 王 晶,查向浩,韦良焯,等 (80)
- 测控专业“卓越计划”课程体系改革与实践 黄 新,许川佩,殷贤华 (83)
- 物理、虚拟相结合的分层次教学研究 吕宏诗 (86)
- 网络与系统攻击技术实验教学探讨 陈 厅,汪小芬,张小松 (88)
- 电路分析基础实验教学的优化与实践 李艳梅,陈庆华 (91)
- 财政模拟实验教学中的角色扮演及其完善 彭锻炼 (95)

太阳能光伏发电综合设计性实验教学探索	··· 高惠平,田建军,张振龙,等	(100)
分析化学实验教学改革创新与实践	····· 康平利,王月娇,杨琦	(103)
化工等专业本科仪器分析实验教学改革	····· 孙素莉,赵文英,范志先	(106)
应用化学开放性实验教学模式浅析	····· 何丽雯,孙东亚	(109)
高分子材料与工程专业的综合性实验设计	····· 任德财,赵冬梅,杜宇虹,等	(112)
计算机网络编程的教学与实验探讨	····· 刘杰彦,向渝,詹思瑜	(115)
基于 NoteExpress 的经管专业实验教学研究进展分析	····· 李民	(118)
地方工科院校大学物理实验开放教学对策	··· 邢永强,李国峰,武娥,等	(121)
电工电子实习教学改革的探索	····· 胡维,张方樱	(123)
现场及案例融合在纺织机械教学中的应用实践	····· 贾国欣,陈莉娜	(127)
舰船综合导航系统课程综合设计教学方法研究	····· 傅军,朱涛	(130)
论一般应用型本科高校的计算机实验室开放	····· 罗卫敏,熊江,陈晓峰	(133)
工程管理专业课程的一体化实验实践教学改革	····· 刘海山	(137)
基础与创新并重的物理化学实验模式探索	··· 陈萍华,蒋华麟,舒红英,等	(140)
高校开放性实验室的研究与探索	····· 张曼,宋桂珍	(143)

· 实验教学中心与实践(实训)基地 ·

“双实双创”实践教学基地的探索与实践	····· 刘玉荣,张进,涂铭旌,等	(146)
环境工程专业毕业实习存在的问题及对策	··· 李友平,苟兴龙,廖运文,等	(149)
改革线切割实训,培养工程素质和创新能力	····· 蒋海燕,刘敬露,胡蓉	(152)

· 创新型人才培养 ·

国防生的教育与管理	····· 阳超,张银晗,刘喜玲	(154)
电子设计竞赛培训的探索与实践	····· 蒋力立,彭端,杜宇上	(156)
多方法制备乙酰苯胺,培养学生的创新力	····· 蒋玉湘	(160)
理工科高校创新教育体系与平台探究	····· 韩晋东	(163)

· 课程教学改革 ·

测绘程序开发类课程改革研究	····· 张恒,杜文举	(167)
Matlab 公选课的教学改革探究	····· 郭天勇	(170)
任务驱动法在微机原理及应用课程中的应用	····· 张妍,王咏梅	(172)

· 实验室建设与管理 ·

微纳米加工净化间的环境维护与管理	····· 郭党委,冯娟娟	(176)
信息与计算专业创新型实验室设计研究	····· 杜守强	(178)
高校基础化学开放实验室的建设与管理	····· 蔡黄菊,秦敏锐,赵华斌,等	(180)
通过目标管理推动实验教学中心的发展	····· 刘凌,吴元喜	(183)
工业工程专业实验室建设的几点建议	····· 欧阳庆,吴春胤,张建桃,等	(187)
公共卫生与预防医学实验队伍建设与管理探析	····· 罗小峰,张莉,罗斌,等	(189)
高校实验室档案管理模式研究	····· 王卫芳	(191)
基于三菱工业机器人的实验室建设方案设计	····· 戴亦宗,陈旭	(194)

· 实验装备建设与管理 ·

高校大型仪器设备资源共享平台建设与管理	····· 李盛,刘朝晖	(198)
高校大型仪器设备共享的研究与探讨	····· 夏兴有,潘信吉,邹广平,等	(201)

· 仪器设备研制、改进、维护 ·

射流涡流排水采气模拟实验台研制与应用	····· 徐建宁,晏显炜,邵乐	(205)
组合式空调器综合性教学实验台的研发	····· 杜娟丽,程花蕊,刘群生	(209)

· 技术安全与环境保护 ·

高校化学实验室不安全因素分析及 3E 对策	····· 郭成义,朱鹏飞,卿大咏,等	(213)
-----------------------	---------------------	-------

· 学生实验园地 ·

共射放大电路的设计	····· 胡剑琦,王丽丹,吴援明	(216)
绿茶汁对面部痤疮抑制的实验观察	····· 李媛媛,姜辰阳,夏凡,等	(220)

顾问

李乐民 卢铁城 向仲怀

编辑委员会主任 高洁

副主任 (按汉语拼音排序)

敖天其	方东红	冯建跃
冯军煊	何一萍	胡皓全
胡今鸿	胡凯	贾申利
兰中文	李震彪	梁齐
罗正祥	马传峰	沈江
施芝元	唐朝纪	王健
王宁章	武晓峰	熊彩东
熊宏齐	严薇	曾翎
张万光	张新祥	张勇
周涛	朱宏	邹永松

主编 沈江

副主编 余魁

编委 (按汉语拼音排序)

毕先均	曹旭斌	常海波
陈爱祖	陈敬德	陈萃科
程永强	楚丹琪	崔炳谋
丁维俊	杜健民	杜玉丰
段书凯	冯海涛	冯图
傅莉	郭建中	郭平
郭庆	何登旭	何秋钊
和晋	黄榜彪	黄进
黄强	黄湘宁	贾丽霞
贾贤龙	姜文凤	姜周曙
蓝阔波	雷敬炎	李方伟
李刚	李革	李光辉
李鸿飞	李疆	李景保
李树坚	李松峰	李文华
李晓林	梁宏	廖炼忠
林建军	林元乖	刘菊东
刘涛	刘兴彪	钱昌吉
阮尚全	尚太玲	时启国
孙学军	田江	田维毅
佟庆伟	汪必琴	王建军
王杰	王萃兴	王明泉
王钱永	王晓华	王晓琼
王笑君	王永杰	乌尼乌且
伍扬	习友宝	向阳开
谢安建	徐石海	徐四平
杨克虎	杨勇	余魁
俞海洋	张红兵	张宏玉
张华	张洁	张明
张社荣	赵建新	赵鹏
赵玉茹	郑合勤	周艳明
朱红星	自俊青	
特邀编委		
董贾寿	卢亚雄	俞永康

Experiment Science and Technology

Vol. 13 No. 1 Feb. 28 2015

(Serial Number: 68)

Bimonthly Published since 2003

Supervised by

Sichuan Provincial Department of Education

Sponsored by

Sichuan Higher Educational Association

University of Electronic Science & Technology
of China

Consultants

LI Lemin LU Tiecheng

XIANG Zhonghuai

Director of Editorial Board

GAO Jie

Deputy Directors of Editorial Board

AO Tianqi FANG Donghong

FENG Jianyue FENG Junhuan

HE Yiping HU Haoquan

HU Jinhong HU Kai

JIA Shenli LAN Zhongwen

LI Zhenbiao LIANG Qi

LUO Zhengxiang MA Chuanfeng

SHENG Jiang SHI Zhiyuan

TANG Chaoji WANG Jian

WANG Ningjiang WU Xiaofeng

XIONG Caidong XIONG Hongqi

YAN Wei ZENG Ling

ZHANG Wanguang ZHANG Xingxiang

ZHANG Yong ZHOU Tao

ZHU Hong ZOU Yongsong

Editor-in-Chief SHENG Jiang

Deputy Editor-in-Chief YU Mei

Edited & published by

Experiment Science & Technology Editorial
Office

Add: No. 4 Section 2 North Jianshe Road
Chengdu Sichuan 610054

P. R. China

Tel: 028 - 83201742; 028 - 61830178

E-mail: syglk@uestc.edu.cn

http: //www. sy. uestc. edu. cn

Subscription From

The Journal Editorial Office

Subscription Rate

\$ 20/issue (Postage included)

\$ 120/year (Postage included)

Contents

· Experiment Technology ·

- Improved Design of Self-balanced Loading Devices for Spatial Connections WANG Keyi, ZHU Wenzheng, WANG Fuqing (1)
- Discussion on Fringe Formula and Fringe Order in Interference and Diffraction WANG Xiaoping, JIANG Jian, XU Jiajie (4)
- Reflection on Making and Application of Experimental Teaching Videos BAI Guangmei, LIN Xingtao, REN Hairong (6)
- Application of Digital Image Correlation in Course of Mechanical Experiments ZHU Jianguo (9)
- Study and Realization of the Consistency of the Part Orientation in WEDM Process XU Yongli, PANG Zugao, WANG Yuwen, et al. (12)
- Expansion of the Ultrasonic Sound Velocity Measurement Experiment ZHU Daoyun, WU Xiao, PANG Wei, et al. (15)
- Study on Designing Methods of the Combinational Logic Experimental Circuit ... YAN Qun, HAN Shoumei, MU Chunmei, et al. (17)
- Discussion and Practice on the Colloidal Properties Experiment of Iron Hydroxide XIONG Hui, MEI Fuming, WANG Hongwei, et al. (21)
- Experimental Research on the Reactive Ion Etching of Silicon PENG Mingfa, HE Xiaodie, WU Haihua (25)
- Study on the Color Characteristics of RGB LED ... QIAN Huiguo (27)
- Influence of Temperature on the LED Spectrum LI Lijun, XIONG Yonghong (31)
- Lathe Control System Based on PLC and Frequency Converter YU Songke, FANG Fang, ZHANG Qing, et al. (34)

· Software Development and Application ·

- Application of Artificial Neural Network in the Polyurethane Formulation Design TENG Xin, TANG Songchao, XU Shiai, et al. (38)
- USB Electronic Organ Design Experimental Based on SOPC TIAN Shuzhen, QUAN Chengbin, DONG Daijie (44)

· Research, Exploration and Innovation for Experiment Teaching ·

- Exploration on Constructing Experiment Teaching Guarantee System of Mechanical and Electrical Engineering LIU Yuanpeng, JIANG Zhiqiang (49)
- Innovation and Practice of Teaching Methods in Digital Topographic Surveying HUA Xianghong, XIANG Dong, ZOU Jinggui (53)
- Analysis and Practice of Genetic Engineering Experiment Curriculum Reformation ... GAO Gang, LI Hui, ZHI Yanping, et al. (56)
- Function Planning of the Economic and Management Experiment Teaching Management System Based on BPR LIU Yong, ZHU Tao, ZHANG Ting, et al. (60)
- Development of the Electric and Electronic Circuit Experimental System LI Xihua, SHI Hongjun, YE Xianfeng (64)
- Research of Task Driven Experiment Teaching Mode Based on Proteus YUAN Zehuai, CHEN Xiaoming (67)
- Reform and Exploration on Experiment Teaching of Surface Treatment Course ZHANG Yingqi, ZHAO Xiaohong, LI Bing, et al. (70)
- Pathological Specimen Play an Important Role in Experiment Teaching of Animal Pathology LAI Weimin, GENG Yi, PENG Xi, et al. (72)
- Research on Experimental Teaching System of E - government Based on PBL MENG Chuanjin, ZHAO Yan (74)
- Exploration of Teaching Reform at Bioengineering Experiment Teaching WANG Lei, ZHAO Hongyu, JI Xiang (77)
- Tentative Study on the Reformation in Experimental Teaching for the Urgently Needed Talents of Environment Science WANG Jing, ZHA Xianghao, WEI Lianghuan, et al. (80)
- Reform and Practice on Measurement and Control Technology and Instrumentations "Excellence" Curriculum System HUANG Xin, XU Chuanpei, YIN Xianhua (83)
- Combination of Physics and Virtual Hierarchical Teaching Research LU Hongshi (86)
- Discussion on Experiment Teaching for Network and System Attacking Techniques CHEN Ting, WANG Xiaofen, ZHANG Xiaosong (88)
- Implementation and Optimization in the Circuit Analysis Experiment LI Yanmei, CHEN Qinghua (91)

Role-playing and Its Improvement in Fiscal Simulation Experiments	PENG Duanlian	(95)
Teaching Exploration of Comprehensive Design Experiments Based on Solar Photovoltaic System	GAO Huiqing, TIAN Jianjun, ZHANG Zhenlong, et al.	(100)
Reform and Exploration of Fundamental Analytical Chemistry Experiment Teaching	KANG Pingli, WANG Yuejiao, YANG Qi	(103)
Reform of Experiment Teaching in Instrumental Analysis of Chemical Engineering and Technology Specialty	SUN Suli, ZHAO Wenyong, FAN Zhixian	(106)
Study on Open Applied Chemical Experiment of Teaching	HE Liwen, SUN Dongya	(109)
Comprehensive Teaching Experiment Design for Undergraduate of Polymer Material and Engineering	REN Decai, ZHAO Dongmei, DU Yuhong, et al.	(112)
Discussion of Teaching and Experiment Methods on Network Programming	LIU Jieyan, XIANG Yu, ZHAN Siyu	(115)
Analysis on Experimental Teaching Research of Economy and Management Majors Based on NoteExpress	LI Min	(118)
Strategy for Open Teaching in Physical Experiment of Local Engineering College	XING Yongqiang, LI Guofeng, WU E, et al.	(121)
Exploration of the Teaching Reform on the Electrical and Electronic Practice	HU Wei, ZHANG Fangying	(123)
Application of the Scene and Case Fusion Teaching Mode on the Teaching of Textile Machinery	JIA Guoxin, CHEN Lina	(127)
Teaching Method Research of the Integrated Ship Navigation System Course	FU Jun, ZHU Tao	(130)
Discussion of Computer Lab Open of General Application Undergraduate University	LUO Weimin, XIONG Jiang, CHEN Xiaofeng	(133)
Study on Teaching Reform of Integrated Experiment Practice in the Courses for the Project Management Profession	LIU Haishan	(137)
Exploration of Teaching Model for Physical Chemistry Experiment Laying Equal Stress on Basis and Innovation	CHEN Pinghua, JIANG Hualin, SHU Hongying, et al.	(140)
Research and Exploration of Open Laboratory in University	ZHANG Man, SONG Guizhen	(143)
· Experiment Teaching Center and Practice Base ·		
Exploration and Practice of "Dual Practice and Dual Innovation" Practice Teaching Base	LIU Yurong, ZHANG Jin, TU Mingjing, et al.	(146)
Problems and Countermeasures of Environmental Engineering Specialty Graduation Practice	LI Youping, GOU Xinglong, LIAO Yunwen, et al.	(149)
Reform WEDM Practical Training and Cultivate Engineering Quality and Innovation Ability	JIANG Haiyan, LIU Jinglu, HU Rong	(152)
· Cultivation for Innovative Talents ·		
Education and Management of National Defense Students	YANG Chao, ZHANG Yihan, LIU Xiling	(154)
Exploration and Practice on Training of the Electronic Design Contest	JIANG Lili, PENG Duan, DU Yushang	(156)
Syntheses of Acetanilide by Versatile Experimental Means Cultivate Students' Innovation Ability to Cultivate	JIANG Yuxiang	(160)
Research of Innovative Education System and Platform in Science and Engineering University	HAN Jindong	(163)
· Innovation for Course Teaching ·		
Teaching Reform Study of the Geomatics Program Development Course	ZHANG Heng, DU Wenju	(167)
Study on Teaching Reform of Public Elective Course of Matlab	GUO Tianyong	(170)
Application of Task-driven Teaching Method in Microcomputer Principle and Application Course	ZHANG Yan, WANG Yongmei	(172)
· Construction and Management for Laboratories ·		
Environment Maintenance and Management of Cleaning Room for Micro-nano Fabrication	GUO Dangwei, FENG Juanjuan	(176)
Innovative Laboratories Design Research of Information and Computer Science	DU Shouqiang	(178)
Construction and Management of University Fundamental Chemistry Open Laboratory	CAI Huangju, QIN Minrui, ZHAO Huarong, et al.	(180)
Promote the Development of Experiment Teaching Center by Target Management	LIU Ling, WU Yuanxi	(183)
Suggestions on Laboratory Construction of Industrial Engineering	OUYANG Qing, WU Chunyin, ZHANG Jiantao, et al.	(187)
Discussion on Technician Team Construction and Management of the Public Health and Prevention Medicine	LUO Xiaofeng, ZHANG Li, LUO Bin, et al.	(189)
Study of Archives Management Mode of University Laboratory	WANG Weifang	(191)
Design of Laboratory Construction Based on Mitsubishi Industrial Robot	DAI Yizong, CHEN Xu	(194)
· Construction and Management for Laboratory Equipments ·		
Research on Construction and Management of Resource Sharing Platform for Large - scale Instrument and Equipment in College	LI Sheng, LIU Zhaohui	(198)
Research and Discussion on the Sharing of Instrument and Equipment on Campus	XIA Xingyou, PAN Xinji, ZOU Guangping, et al.	(201)
· Development, Improvement and Maintenance for Apparatus and Equipments ·		
Development and Application of Jet and Vortex Tool Drainage Simulation Experimental Platform	XU Jianning, YAN Xianwei, SHAO Le	(205)
Design of Comprehensive Teaching Experiment Device for Combined Air Conditioner	DU Juanli, CHENG Huarui, LIU Qunsheng	(209)
· Technology Safety and Environment Protection ·		
Dangerous Factor Analysis of University Chemistry Laboratory and 3E's Countermove	GUO Chengyi, ZHU Pengfei, QING Dayong, et al.	(213)
· Student Experimental Garden ·		
Design of Common Emitter Amplifier	HU Jianqi, WANG Lidai, WU Yuanming	(216)
Experimental Observation of Green Tea Extractive on the Inhibition of Staphylococcus Epidermids	LI Yuanyuan, JIANG Chenyang, XIA Fan, et al.	(220)

Role-playing and Its Improvement in Fiscal Simulation Experiments	PENG Duanlian	(95)
Teaching Exploration of Comprehensive Design Experiments Based on Solar Photovoltaic System	GAO Huiping, TIAN Jianjun, ZHANG Zhenlong, et al.	(100)
Reform and Exploration of Fundamental Analytical Chemistry Experiment Teaching	KANG Pingli, WANG Yuejiao, YANG Qi	(103)
Reform of Experiment Teaching in Instrumental Analysis of Chemical Engineering and Technology Specialty	SUN Suli, ZHAO Wenyong, FAN Zhixian	(106)
Study on Open Applied Chemical Experiment of Teaching	HE Liwen, SUN Dongya	(109)
Comprehensive Teaching Experiment Design for Undergraduate of Polymer Material and Engineering	REN Decai, ZHAO Dongmei, DU Yuhong, et al.	(112)
Discussion of Teaching and Experiment Methods on Network Programming	LIU Jieyan, XIANG Yu, ZHAN Siyu	(115)
Analysis on Experimental Teaching Research of Economy and Management Majors Based on NoteExpress	LI Min	(118)
Strategy for Open Teaching in Physical Experiment of Local Engineering College	XING Yongqiang, LI Guofeng, WU E, et al.	(121)
Exploration of the Teaching Reform on the Electrical and Electronic Practice	HU Wei, ZHANG Fangying	(123)
Application of the Scene and Case Fusion Teaching Mode on the Teaching of Textile Machinery	JIA Guoxin, CHEN Lina	(127)
Teaching Method Research of the Integrated Ship Navigation System Course	FU Jun, ZHU Tao	(130)
Discussion of Computer Lab Open of General Application Undergraduate University	LUO Weimin, XIONG Jiang, CHEN Xiaofeng	(133)
Study on Teaching Reform of Integrated Experiment Practice in the Courses for the Project Management Profession	LIU Haishan	(137)
Exploration of Teaching Model for Physical Chemistry Experiment Laying Equal Stress on Basis and Innovation	CHEN Pinghua, JIANG Hualin, SHU Hongying, et al.	(140)
Research and Exploration of Open Laboratory in University	ZHANG Man, SONG Guizhen	(143)
· Experiment Teaching Center and Practice Base ·		
Exploration and Practice of "Dual Practice and Dual Innovation" Practice Teaching Base	LIU Yurong, ZHANG Jin, TU Mingjing, et al.	(146)
Problems and Countermeasures of Environmental Engineering Specialty Graduation Practice	LI Youping, GOU Xinglong, LIAO Yunwen, et al.	(149)
Reform WEDM Practical Training and Cultivate Engineering Quality and Innovation Ability	JIANG Haiyan, LIU Jinglu, HU Rong	(152)
· Cultivation for Innovative Talents ·		
Education and Management of National Defense Students	YANG Chao, ZHANG Yihan, LIU Xiling	(154)
Exploration and Practice on Training of the Electronic Design Contest	JIANG Lili, PENG Duan, DU Yushang	(156)
Syntheses of Acetanilide by Versatile Experimental Means Cultivate Students' Innovation Ability to Cultivate	JIANG Yuxiang	(160)
Research of Innovative Education System and Platform in Science and Engineering University	HAN Jindong	(163)
· Innovation for Course Teaching ·		
Teaching Reform Study of the Geomatics Program Development Course	ZHANG Heng, DU Wenju	(167)
Study on Teaching Reform of Public Elective Course of Matlab	GUO Tianyong	(170)
Application of Task-driven Teaching Method in Microcomputer Principle and Application Course	ZHANG Yan, WANG Yongmei	(172)
· Construction and Management for Laboratories ·		
Environment Maintenance and Management of Cleaning Room for Micro-nano Fabrication	GUO Dangwei, FENG Juanjuan	(176)
Innovative Laboratories Design Research of Information and Computer Science	DU Shouqiang	(178)
Construction and Management of University Fundamental Chemistry Open Laboratory	CAI Huangju, QIN Minrui, ZHAO Huarong, et al.	(180)
Promote the Development of Experiment Teaching Center by Target Management	LIU Ling, WU Yuanxi	(183)
Suggestions on Laboratory Construction of Industrial Engineering	OUYANG Qing, WU Chunyin, ZHANG Jiantao, et al.	(187)
Discussion on Technician Team Construction and Management of the Public Health and Prevention Medicine	LUO Xiaofeng, ZHANG Li, LUO Bin, et al.	(189)
Study of Archives Management Mode of University Laboratory	WANG Weifang	(191)
Design of Laboratory Construction Based on Mitsubishi Industrial Robot	DAI Yizong, CHEN Xu	(194)
· Construction and Management for Laboratory Equipments ·		
Research on Construction and Management of Resource Sharing Platform for Large - scale Instrument and Equipment in College	LI Sheng, LIU Zhaohui	(198)
Research and Discussion on the Sharing of Instrument and Equipment on Campus	XIA Xingyou, PAN Xinji, ZOU Guangping, et al.	(201)
· Development, Improvement and Maintenance for Apparatus and Equipments ·		
Development and Application of Jet and Vortex Tool Drainage Simulation Experimental Platform	XU Jianning, YAN Xianwei, SHAO Le	(205)
Design of Comprehensive Teaching Experiment Device for Combined Air Conditioner	DU Juanli, CHENG Huarui, LIU Qunsheng	(209)
· Technology Safety and Environment Protection ·		
Dangerous Factor Analysis of University Chemistry Laboratory and 3E's Countermove	GUO Chengyi, ZHU Pengfei, QING Dayong, et al.	(213)
· Student Experimental Garden ·		
Design of Common Emitter Amplifier	HU Jianqi, WANG Lidan, WU Yuanming	(216)
Experimental Observation of Green Tea Extractive on the Inhibition of Staphylococcus Epidermids	LI Yuanyuan, JIANG Chenyang, XIA Fan, et al.	(220)