



中国化工教育协会会刊  
第39卷·第3期

ISSN 1000-6168

CN 31-1043/G4

# 化工高等教育

HIGHER EDUCATION IN CHEMICAL ENGINEERING

化工高等教育 HIGHER EDUCATION IN CHEMICAL ENGINEERING

第39卷·第3期

2022年6月

2022年/6月

华东理工大学主办

# 化工高等教育

第 39 卷第 3 期 2022 年 6 月

## 目 次

### 特稿与约稿

西部地区高等教育投入减贫效应的空间溢出和门槛特征…………… 蔡文伯,田璐(2)

### 国外高等教育

美国高校工程教育质量保障权力探析:主体辨识、功能塑造及参与路径…………… 李明(15)

康奈尔大学办学理念渐进研究:基于 1865—1914 年的考察…………… 岳伊明(23)

### 卓越工程师培养

化工安全复合型人才培养探索与实践——以华南理工大学为例  
…………… 严宗诚,陈砺,吴妙娴,张正国,王秀军(33)

基于“合作、共享、交叉”的地方应用型化工人才培养机制探索…………… 胡国琦,沈梁钧,仇丹,王家荣(37)

“双导师”和“双平台”协同育人模式探索与实践…………… 戚燕俐,张帅,林本才,薛冰,任玉荣(42)

### 研究生教育

化工安全工程硕士研究生培养模式创新与实践…………… 刘义,李建国,杨朝合,赵东风(48)

分析型研究生课程考试之命题设计…………… 程振民(53)

### 学科与专业建设

新农科背景下应用化学一流本科专业建设探索与实践——以东北农业大学为例  
…………… 白靖文,杨昱,付颖,徐雅琴,叶非,邢志勇,许晶,邹月利(58)

高校实验室“五位一体,多元融合”安全文化体系的构建  
…………… 叶美玲,邵文尧,陈翠雪,张秋根,陈晓兰,宋毅(64)

我国新能源材料与器件专业培养方案对比研究…………… 林妹平,马晓波,曹志杰,张铁炳,马玲(70)

## 课程建设与改革

以建构为导向的实效型混合式教学模式初探..... 靳晓芸,程波,江南,吕中(79)

“金课”视域下基于 OBE 理念的制药工艺学教学改革与实践

..... 施秀芳,史进进,孙凯,路翔,张秋荣,秦上尚(83)

基于学科交叉融合的创新研修课程建设与实践——以人工智能与化学课程为例

..... 周佳,朱要云(90)

化学反应工程课程思政教学的设计与实施..... 郭艳,李常艳(94)

## 实验与实践教学

面向新工科人才培养的“双通道”实践教育模式探索——以河北工业大学为例

..... 方静,李春利,纪志永,姜艳军,李浩,齐俊杰(100)

基于专创融合的精细化工工艺学综合实验教学体系构建

..... 罗辉,南国枝,刘东,李鹏,殷长龙(107)

基于“4R”理论的高校实验室应急管理研究..... 阳富强,黄玉杰,施永乾,余龙星(115)

一流专业建设背景下创新实训的探索与实践..... 曹亚峰,李沅,谭凤芝,汪源浩(121)

基于科研项目的本科生自主创新能力培养路径研究——以贵州大学化学与化工学院为例

..... 刘彤(126)

涉海专业微生物学实验“3+1”教学模式的探索..... 马红梅,李晓梅,黄海(131)

加强实验室安全管理举措执行力的心理因素探讨..... 吴乃昕,施小芳,张孟佳,陈晓彦,李玲(136)

以科研案例为引导的“可燃气体燃爆惰化”教学实践..... 王金贵,陈发祥,郭进(140)

## 教学经验交流

研究导向型教学在化工专业写作课程中的应用探索..... 张竹修,崔咪芬,汤吉海(145)

化学反应工程课程案例教学之膜反应器基本原理及应用..... 闫鹏,程易(151)

主编寄语..... (1)

## Main Contents

Spatial Spillover and Threshold Characteristics of Poverty Reduction Effect of Higher Education Investment in Western China .....	Cai Wenbo, Tian Lu(2)
Research on the Power of Quality Assurance in Engineering Education within Colleges and Universities of the United States; Subjectivity Identification, Function Formation and Participation Ways .....	Li Ming(15)
A Progressive Study of Cornell University's Educational Philosophy; Based on an Investigation from 1865 to 1914 .....	Yue Yiming(23)
Exploration and Practice of Cultivation of Compound Talents in Chemical Industry Safety—Taking South China University of Technology as an Example .....	Yan Zongcheng, Chen Li, Wu Miaoxian, Zhang Zhengguo, Wang Xiujun(33)
Exploration of Cultivating Mechanism for Chemical Engineering Talents Based on Cooperation, Sharing and Multiple Cross .....	Hu Guoqi, Shen Liangjun, Qiu Dan, Wang Jiarong(37)
Exploration and Practice of Dual Mentor and Dual Platform Collaborative Education Model .....	Qi Yanli, Zhang Shuai, Lin Bencai, Xue Bing, Ren Yurong(42)
Innovation and Practice of Postgraduate Training Mode of Chemical Safety Engineering .....	Liu Yi, Li Jianguo, Yang Chaohe, Zhao Dongfeng(48)
Proposition Design in Analysis Type Postgraduate Course Examination .....	Cheng Zhenmin(53)
Exploration and Practice on the Construction of First-class Applied Chemistry Major under the Background of New Agricultural Science—Taking Northeast Agricultural University as an Example .....	Bai Jingwen, Yang Yu, Fu Ying, Xu Yaqin, Ye Fei, Xing Zhiyong, Xu Jing, Zou Yueli(58)
Construction of Five-in-one and Multi-integration Safety Culture System in University Laboratory .....	Ye Meiling, Shao Wenyao, Chen Cuixue, Zhang Qiugen, Chen Xiaolan, Song Yi(64)
Comparative Study of Training Program of the New Energy Materials and Devices Specialty in China .....	Lin Meiping, Ma Xiaobo, Cao Zhijie, Zhang Yibing, Ma Ling(70)
Exploration of Efficient Blended Teaching Mode Guided by Constructivism .....	Jin Xiaoyun, Cheng Bo, Jiang Nan, Lü Zhong(79)
Teaching Reform and Practice for Pharmaceutical Technology Based on OBE Concept from the	

Perspective of "Golden Courses"

..... Shi Xiufang, Shi Jinjin, Sun Kai, Lu Xiang, Zhang Qiurong, Qin Shangshang(83)	
Construction and Practice of Innovation Courses Based on Interdisciplinary Integration: Taking the Course of Artificial Intelligence and Chemistry as an Example .....	Zhou Jia, Zhu Yaoyun(90)
Design and Implement of Ideological and Political Education in the Course of Chemical Reaction Engineering.....	Guo Yan, Li Changyan(94)
Exploration of the "Dual-channel" Practical Teaching Mode for Talents Training Based on Emerging Engineering—Taking Hebei University of Technology as an Example	
..... Fang Jing, Li Chunli, Ji Zhiyong, Jiang Yanjun, Li Hao, Qi Junjie(100)	
Construction of Comprehensive Experiments Teaching System of Fine Chemical Technology Based on Integration of Professional and Entrepreneurial Education	
..... Luo Hui, Nan Guozhi, Liu Dong, Li Peng, Yin Changlong(107)	
Research on University Laboratory Emergency Management Based on 4R Theory	
..... Yang Fuqiang, Huang Yujie, Shi Yongqian, Yu Longxing(115)	
Exploration and Practice of Innovation Practice Training Project under the Background of First-class Major Construction .....	Cao Yafeng, Li Yuan, Tan Fengzhi, Wang Yuanhao(121)
Research on the Cultivation Path of Undergraduates' Independent Innovation Ability Based on Scientific Research Projects: Taking the School of Chemistry and Chemical Engineering of Guizhou University as an Example .....	Liu Tong(126)
Exploration on the Teaching Mode of "3+1" Microbiology Experiment in Marine-oriented Specialty .....	Ma Hongmei, Li Xiaomei, Huang Hai(131)
Discussion on Psychological Factors of Strengthening the Execution of Laboratory Safety Management Measures .....	Wu Naixin, Shi Xiaofang, Zhang Mengjia, Chen Xiaoyan, Li Ling(136)
Teaching Reform Practice of "Flammable Gas Combustion and Explosion Inerting" Guided by Scientific Research Cases .....	Wang Jingui, Chen Faxiang, Guo Jin(140)
Quest for the Use of Research-led Education in Professional Writing Course for Chemical Engineering .....	Zhang Zhuxiu, Cui Mifen, Tang Jihai(145)
The Principle and Its Application of Membrane Reactor as a Teaching Case in Chemical Reaction Engineering Course .....	Yan Peng, Cheng Yi(151)
The Chief Editor's Words .....	(1)