

# 广州化工

GUANGZHOU CHEMICAL INDUSTRY



扫码关注

第12期  
2022年6月  
(下半月)  
第50卷

- 《中国学术期刊综合评价数据库》统计源刊
- 《中国期刊全文数据库》全文收录期刊
- 《中国核心期刊(遴选)数据库》全文收录期刊

多彩化工 · 专业视角

全网首推

## 产业链资源全公开 快人一步进入生意圈

活动日期 7月1日-8月31日



### 水处理



扫码进入小程序

ISSN 1001-9677



主办：  
广州化工研究设计院  
广州市化工行业协会

# 广州化工

## GUANGZHOU HUAGONG

《中国学术期刊综合评价数据库》统计源刊  
《中国核心期刊(遴选)数据库》全文收录期刊  
《中国期刊全文数据库》全文收录期刊  
高、中级化工职称资格评审认定期刊  
广东省特色科技期刊  
全国石油和化工期刊百强榜学术期刊 50 强

1973 年创刊(半月刊)

第 50 卷第 12 期

2022 年 6 月(下半年)

主 管:广州化工集团有限公司  
主 办:广州化工研究设计院  
广州市化工行业协会

编辑出版:《广州化工》编辑部

主 编:吴文莉

副 主 编:林珺颖

编 辑:何启宏,曹 欣

地 址:广州市黄埔区科学大道 111 号科学信息  
大厦主楼西座 609-610 号

邮 码:510670

电 话:020-31801512

13560218977(林副主编)

官方网站:<http://www.gzhgbjb.cn>

<http://gzha.cbpt.cnki.net>

邮 箱:gzhgbjb@vip.126.com

gzhgqks@163.com

印 刷:广州市德佳彩色印刷有限公司

发行范围:国内外公开发行

国外发行:中国出版对外贸易总公司  
(北京 782 信箱)

国际标准刊号:ISSN1001-9677

国内统一刊号:CN44-1228/TQ

广告经营许可证:穗工商广字 4401004002668 号

出版物经营许可证:新出发粤刊总批字第 226 号

国内定价:28.00 元/期 全年 672.00 元(共 24 期)

### 第九届编委会成员名单(按姓氏笔画排序)

马小明 方岩雄 尹国强 卢 江 叶代勇  
叶家灿 吕满庚 刘自力 闫 利 麦堪成  
麦裕良 李伟华 李攻科 李雪辉 杨丽庭  
杨育农 吴文莉 余 林 陈旭东 周添国  
郑 成 赵建红 赵建青 徐志达 章明秋  
彭 峰 童叶翔 曾松峰 楼宏铭 蔡卫权  
廖 兵 谭志良

# 目 次

## 化工信息

广化交易轮胎月度监测报告 2022 第 6 期(6 月)…………… (1)

## 专论与综述

稀土元素在镁合金中应用的研究进展……………

…………… 王红亮,谢圣中,高小庆(7)

硫酸新霉素的研究…………… 胡永彬,徐礼生(10)

纳米材料在食品安全多残留免疫层析检测中的应用……………

…………… 黄佳佳,张燕姬,曾宝钿,刘颖谊,洪日韦婷,翟 培(12)

融雪剂的研究进展及发展方向…………… 崔禹晴,吕 丹,王 威(17)

超临界水氧化在难处理废水领域中的工程应用进展……………

…………… 吴 辉,康文斌,彭 践,廖子轩(20)

## 科学实验

中性席夫碱单核稀土配合物的合成、晶体结构及荧光性质……………

…………… 杨 慧,刘姗姗,罗 洁,勾 雪,王周玉(24)

GQDs@ Gel 纳米体系的制备及其抑菌性能研究……………

…………… 朱 韬,吴可馨,贺煜添,朱凤池,杨冬芝(28)

碳源浓度对 MPCVD 金刚石涂层的影响研究……………

… 王天乐,刘义林,朱家诚,楼可旦,仇乐怡,杨 涛,黄国波(31)

海绵状凝胶吸附-光催化协同去除甲基橙研究……………

…………… 谢 磊,谢颖俊,吴伟旗(35)

二步法制备亚麻油微胶囊及在自修复涂层中的应用……………

…………… 童晓梅,段 宁,郝芹芹(39)

磷负载对 ZSM-22 结构性能的影响……………

…………… 方 昕,黄克旺,张 伟,雍晓静,张安贵(43)

3-(3-香豆素基)丙烯醛的制备及其多组分反应构建双杂环化合物……………

…………… 朱陈浩,苏梦洋,宗斯轶,王慧彦(47)

利用风淬钢渣制备导电盲道砖的实验研究…………… 彭 佳(53)

尼群地平栓剂的初步研究…………… 黄 召,施 璐,凌智群(57)

XAD-7HP 树脂纯化款冬花多糖工艺研究……………

…………… 韩毅丽,张 澍,裴晓丽(60)

一种新希夫碱的合成及其荧光性质研究……………

…………… 刘巧茹,王静霞,李伟利,曹可生(63)

Sm<sup>3+</sup> 离子激活的 Ba<sub>3</sub>ZnNb<sub>2</sub>O<sub>9</sub> 荧光粉的制备及发光性能……………

…………… 王 晶,逯纪涛,宋明君(65)

有色金属冶炼废水中铈去除新工艺研究…………… 方志斌,

毛腾芳,赵 婉,窦路敏,侯 磊,刘 葵,石春芬,李先柏(68)

- 抗肿瘤药醋酸阿比特龙相关杂质的合成 ..... 牛帅星,姚凯,申晓婷,张辉(72)
- 混合载体制备低浓度二氧化硫气体检测管的研究 ..... 苏召飞,蒋淑敏,刘佳南(75)
- 吡蚜酮在土壤中的吸附-解吸附热力学行为研究 ..... 朱会军,李菁华(78)
- 基于响应面法对卫红花中红花黄色素提取条件的优化 .....  
..... 王婷婷,王鑫蒙,李金平,苏亚东,李爽,邢沂海,李保林,张伟,郭娇(81)

## 分析测试

- 多环芳烃污染物两种提取方法比较和含量测定方法验证 ..... 杨金辉,罗亚君,张小毅,朱思佳(85)
- 基于数值模拟与响应面法的折流板捕雾器分离性能研究 ..... 魏有波,邓雨琪,何苗,李超(88)
- 塔河油田污水对非金属材料 PVDF 的影响分析 ..... 陈钰文,张其敏,孟江,李洪涛,李凌风,李志越(92)
- 红外碳硫仪测定焊剂中碳、硫含量的不确定度 ..... 刘小娴,杨金艳(96)
- 蒙脱石中各物相的定量分析研究 ..... 陈红,施颖,廉向金,黎萍,杨华承,杨梅(99)
- 分光光度法测定地表水中叶绿素 a 的进一步研究 ..... 王一会,王志瑞,吴德景,郭莹(103)
- 自配溶液体系用于伏安法测定抗氧化剂含量的可行性研究 .....  
..... 鄢豪,管亮,左秀丽,谷科城,段纪森,刘君玉,林科宇,王建,舒建华(106)
- 原子吸收分光光度计测定纺织品中总铅和总镉的含量 ..... 周慧,马义虔(110)

## 环境保护

- 上流式反硝化滤池在城镇污水处理厂提标改造中的应用 ..... 卢泽海,陈柱堆,郑从交,袁俊锋(112)
- 某化工企业地块土壤污染修复效果评估 ..... 张运超,任路遥(115)
- 用于 PTA 装置中反应釜及地沟结晶废料回收方法的应用 ..... 郭少华(118)
- 全自动化学需氧量分析测定仪在环境监测中的应用 ..... 宋盈,任佳豪,陈利粉(121)
- 丰乐河徽州区段水体营养水平分析 ..... 刘忠煌,马明海,徐盛,尤家伟(123)
- 关于柔性 AMOLED 工厂废气的处置概述 ..... 马尚学,向能清,颜霞,王权(126)
- 活性炭吸附-蒸汽脱附工艺治理医药厂污水站废气的工程案例 ..... 王宁(129)

## 化工机械

- 反应系统安全系统的研究——安全罐的设计 ..... 张宏(132)
- 油田回注污水对管线腐蚀性研究 ..... 徐吕(136)

## 生产技术

- 常压渣油与煤共炼的研究 ..... 许辽辽,冯欢,崔智辉,王骁,高磊,侯自强(139)
- 硫磺回收单元超低负荷技术改造应用研究 ..... 胡建君(142)

## 教学园地

- 综合化学实验:氮化碳纳米复合材料的制备及研究 ..... 冯勇,尹国杰,高亚辉,许艳杰,张少文(146)
- 全氟滤芯微孔膜虚拟仿真实验的应用 ..... 王伟,付争兵,朱磊,肖祖峰,颜永斌,李伟(149)
- 基于三聚氰胺案例的《分析化学》教学设计 ..... 罗春燕,陈卫星,伏芋桥(152)
- 影响化学平衡的几大因素 ..... 周海,康敏(155)

虚拟仿真软件在药物分析课程中的应用与改进 .....	黄宇倩, 钦富华(158)
基于虚拟仿真技术的有机化学实验教学改革与探索 .....	李丹丹, 鞠志宇, 侯旭锋, 牛亮峰, 黄夕瑶(161)
基于互动视频的高分子化学虚拟实验设计与实施研究 .....	周俐军, 王冬梅, 滕 腾, 姚同杰(164)
《化工原理》课程教学改革初探 .....	尹晓杰, 韩 阳, 秦国旭, 王新运, 黑金培, 尹艳君(167)
某高校药学院《生物化学》模块化教学初探 .....	胡艳瑾, 刁 欢, 陶阿丽, 刘自平, 许 燕(170)
“线上”+“线下”混合式仪器分析实验教学模式的建立与运行 .....	王会镇, 郭芸芸, 赖欣悦, 勾 雪(174)
《仪器分析》教学改革与探索 .....	刘 波, 谭建娟, 彭永利(177)
虚拟仿真在有机化学实验教学中的应用研究与实例 .....	于金涛, 滕巧巧(180)
工程化学多元化教学方法探索与实践 .....	谢云鹏(182)
PBL 教学模式在油脂工艺学混合式教学中应用 .....	李 雪, 王俊颖, 郑海波, 蔡易辉(185)
“以学生为中心”的无机化学实验教学改革与探究——以河南大学为例 .....	孙 琳, 程宇婕, 李 红, 李明雪(187)
中药专业“物理化学”课程思政教育建设初探 .....	李 莉, 李 伟, 张明波, 张 旭(190)
课程思政背景下高分子材料专业课程建设的探索 .....	梅群波, 宋 娟(193)
《环境影响评价》教学改革初探 .....	孙金华, 杨 柳, 孔玉华, 郭二辉, 吴明作(196)
无机化学-混合式教学法探讨 .....	海力茜·陶尔大洪(199)
地方高校材料专业《信息检索》课程教学改革的思考 .....	李 静, 桂成梅, 孟祥珍(202)
高职化学实验教学改革探索与实践 .....	黄秋妹, 倪明龙, 王 珍, 肖春芬, 石 茗(205)
“金课”背景下探究性药学实验的设计与实践 .....	孔继川, 李 杨, 周景春(207)
应用思维导图构建人血白蛋白含量测定方法的教学研究 .....	司鑫鑫, 张 晓, 付 免, 李婷婷, 马卫兴(211)
基于课程思政理念的物理化学教学改革探索与实践 .....	李 斌, 许航线(213)
《现代仪器分析》教学创新体系在研究生教学中的研究与实践 .....	姚 军(216)
化工设计教学中课程思政探索与实践 .....	谭亚南(219)
化工专业创新创业能力培养的学科竞赛实践分析 .....	邵梅玲, 史 展(221)
基于学生手机制作实验微视频的化学教学改革 .....	郑 权(224)
关于非化学专业《普通化学》课程教学的几点探索 .....	李 波, 王晓焕, 陈书阳, 孙红先, 李奇洋(227)
“特色案例”在课程思政建设中的应用探索——以《材料力学性能》课程为例 .....	何 寒, 王 琳, 赵亚东, 张阳明(230)
“CDIO”工程教育理念指导下药物化学教学改革的探索 .....	李凌凌, 左振宇, 黄 皓, 杨忠华, 陈 俊, 秦晓蓉(233)
化工原理课程设计线上教学方法探索 .....	祝 杰, 李惠茗, 李红梅(236)
基于工程能力培养的化工专业设计类课程改革实践 .....	王小艳, 常文贵, 徐光年(239)
“OPCE”体系中无机化学双语课程线上线下混合教学模式研究 .....	葛素香, 郑 直, 张艳鸽, 关会娟, 李彩霞, 蔡 琨(241)
学徒制模式下化工类专业课程考核机制探究 .....	杨永波, 王建强(244)

## 安全与管理

新时期煤矿通风安全现状和对策探讨 .....	刘福新(247)
危险化学品企业风险点管理模型研究 .....	杨瑞霞, 杨 倩, 徐晓峰(249)
高校化学实验室安全管理绩效评价指标体系构建 .....	赵建华, 邓舜心(254)
民办院校化学实验室仪器管理存在问题及对策 .....	武 云, 马红霞(258)

# CONTENTS

Research Progress on Application of Rare Earth Elements in Magnesium Alloys .....	7
..... WANG Hong-liang, XIE Sheng-zhong, GAO Xiao-qing	
Study on Neomycin Sulfate .....	10
..... HU YONG-bin, XU Li-sheng	
Application of Nanomaterials in Multiplex Immunochromatographic Technology .....	12
..... HUANG Jia-jia, ZHANG Yan-ji, ZENG Bao-dian, LIU Ying-yi, HONG Ri-wei-ting, ZHAI Pei	
Research Progress and Development Direction of Snow Melting Agent .....	17
..... CUI Yu-qing, LV Dan, WANG Wei	
Research Progress on Supercritical Water Oxidation ...	20
..... WU Hui, KANG Wen-bin, PENG Jian, LIAO Zi-xuan	
Synthesis, Crystal Structures and Fluorescence Properties for Mononuclear Rare Earth Complexes Based on Neutral Schiff Base .....	24
..... YANG Hui, LIU Shan-shan, LUO Jie, GOU Xue, WANG Zhou-yu	
Preparation of QGDs@ Gel Nanosystem and Study on Its Antibacterial Properties .....	28
..... ZHU Tao, WU Ke-xin, HE Yu-tian, ZHU Feng-chi, YANG Dong-zhi	
Preparation and Properties of MPCVD Diamond Coatings with Different Carbon Source Concentrations .....	31
..... WANG Tian-le, LIU Yi-lin, ZHU Jia-cheng, LOU Ke-dan, CHOU Le-yi, YANG Tao, HUANG Guo-bo	
Synergistic Removal of Methyl Orange by Spongy Gel Adsorption and Photocatalysis .....	35
..... XIE Lei, XIE Ying-jun, WU Wei-qi	
Preparation of Linseed Oil Filled Microcapsule by A Two-step Method and Application in Self-healing Coating ...	39
..... TONG Xiao-mei, DUAN Ning, HAO Qin-qin	
Effect of Phosphorus Loading on Structure and Properties of ZSM-22 .....	43
..... FANG Xin, HUANG Ke-wang, ZHANG Wei, YONG Xiao-jing, ZHANG An-gui	
Preparation of 3-(3-coumarinyl) Acrylaldehyde and Construction of Biheterocyclic Compounds by Multicomponent Reaction .....	47
..... ZHU Chen-hao, SU Meng-yang, ZONG Si-yi, WANG Hui-yan	
Experimental Study on Conductive Blind Brick Madefrom Steel Slag Quenching with Wind .....	53
..... PENG Jia	
Preliminary Study on Nitrendipine Suppositories .....	57
..... HUANG Zhao, SHI Lu, LING Zhi-qun	
Study on Purification of Polysaccharide from Farfarae Flos by MAR of XAD-7HP .....	60
..... HAN Yi-li, ZHANG Shu, PEI Xiao-li	
Synthesis and Fluorescence Property of A New Schiff Base .....	63
..... LIU Qiao-ru, WANG Jing-xia, LI Wei-li, CAO Ke-sheng	
Synthesis and Luminescent Properties of Sm <sup>3+</sup> Activated Ba <sub>3</sub> ZnNb <sub>2</sub> O <sub>9</sub> Phosphors .....	65
..... WANG Jing, LU Ji-tao, SONG Ming-jun	
Study on New Technology of Thallium Removal from Nonferrous Metal Smelting Wastewater .....	68
..... FANG Zhi-bin, MAO Teng-fang, ZHAO Wan, DOU Lu-min, HOU Lei, LIU Kui, SHI Chun-fen, LI Xian-bai	
Synthesis of Impurities Related to Abiraterone Acetate .....	72
..... NIU Shuai-xing, YAO Kai, SHEN Xiao-ting, ZHANG Hui	
Study on Preparation of Low Concentration Sulfur Dioxide Gas Detection Tube with Mixed Carrier .....	75
..... SU Zhao-fei, JIANG Shu-min, LIU Jian-nan	
Thermodynamics Study on Adsorption-desorption of Pymetrozine in Three Soils .....	78
..... ZHU Hui-jun, LI Jing-hua	
Optimization of Safflower Yellow Pigment and Carthamin Extraction Condition from Weihui Safflower by Response Surface Method .....	81
..... WANG Ting-ting, WANG Xin-meng, Li Jin-ping, SU Ya-dong, LI Shuang, XING Yi-hai, LI Bao-lin, ZHANG Wei, GUO Jiao	
Comparison of Two Extraction Methods and Validation of Content Determination Methods for Polycyclic Aromatic Hydrocarbons Pollutants .....	85
..... YANG Jin-hui, LUO Ya-jun, ZHANG Xiao-yi, ZHU Si-jia	
Study on Separation Efficiency of A Mist Eliminator Based on Numerical Simulation and Response Surface Methodology .....	88
..... WEI You-bo, DENG Yu-qi, HE Miao, LI Chao	
Influence of Tahe Oilfield Sewage on Non-metallic Material PVDF .....	92
..... CHEN Yu-wen, ZHANG Qi-min, MENG Jiang, LI Hong-tao, LI Ling-feng, LI Zhi-yue	
Uncertainty Evaluation for Determination of Total Carbon and Sulfu Content in Flux by High-frequency Infrared Carbon and Sulfur Analyzer .....	96
..... LIU Xiao-xian, YANG Jin-yan	
Study on Quantitative Phase Analysis in Montmorillonite .....	99
..... CHEN Hong, SHI Ying, LIAN Xiang-jin, LI Ping, YANG Hua-cheng, YANG Mei	
Further Study on Determination of Chlorophyll a in Surface Water by Spectrophotometry .....	103
..... WANG Yi-hui, WANG Zhi-rui, WU De-jing, GUO Ying	
Feasibility Study on Self-prepared Solution System Used in Voltammetric Determination of Antioxidant Content ...	106
..... YAN Hao, GUAN Liang, ZUO Xiu-li, GU Ke-cheng, DUAN Ji-miao, LIU Jun-yu, LIN Ke-yu, WANG Jian, SHU Jian-hua	
Determination of Total Lead and Total Cadmium in Textiles by Atomic Absorption Spectrophotometer .....	110
..... ZHOU Hui, MA Yi-qian	

Application of Upflow Denitrification Filter in Upgrading and Renovation of Urban Sewage Treatment Plant .....	LU Ze-hai, CHEN Zhu-dui, ZHENG Cong-jiao, YUAN Jun-feng(112)
Evaluation on Remediation Effect of Soil Pollution in A Chemical Enterprise Plot .....	ZHANG Yun-chao, REN Lu-yao(115)
Application of Waste Recovery Method for Reactor and Trench in PTA Plant .....	GUO Shao-hua(118)
Automatic Chemical Oxygen Demand Analyzer in Environment Monitoring Application .....	SONG Ying, REN Jia-hao, CHEN Li-fen(121)
Analysis of Water Eutrophication in Huizhou Section of Fengle River .....	LIU Zhong-huang, MA Ming-hai, XU Sheng, YOU Jia-wei(123)
Study on AMOLED Plant Waste Gases Treatment .....	MA Shang-xue, XIANG Neng-qing, YAN Xia, WANG Quan(126)
Engineering Case of Activated Carbon Adsorption—steam Desorption Process to Treat Waste Gas from Sewage Station of Pharmaceutical Factory .....	WANG Ning(129)
Reactor System Safety Study——Catch Tank Design .....	ZHANG Hong(132)
Study on Sewage Backfill with Pipeline Corrosion of Oilfield .....	XU Lv(136)
Study on Corefining of Atmospheric Residuum and Coal .....	XU Liao-liao, FENG Huan, CUI Zhi-hui, WANG Xiao, GAO Lei, HOU Zi-qiang(139)
Study on Application of Ultra-low Load Technology Transformation in Sulfur Recovery Unit .....	HU Jian-jun(142)
Comprehensive Chemical Experiment of Preparation and Investigation of Carbon Nitride Nanocomposites .....	FENG Yong, YIN Guo-jie, GAO Ya-hui, XU Yan-jie, ZHANG Shao-wen(146)
Application of Virtual Simulation Experiment of Perfluorinated Filter Element's Microporous Membrane .....	WANG Wei, FU Zheng-bing, ZHU Lei, XIAO Zu-feng, YAN Yong-bin, LI Wei(149)
Teaching Design of Analytical Chemistry Based on Melamine Case .....	LUO Chun-yan, CHEN Wei-xing, FU Yu-qiao(152)
Several Major Factors Affecting Chemical Balance .....	ZHOU Hai, KANG Min(155)
Application and Improvement of Virtual Simulation Software in Pharmaceutical Analysis Course .....	HUANG Yu-qian, QIN Fu-hua(158)
Reform and Exploration on Organic Chemistry Experiment Teaching Based on Virtual Simulation Technology .....	LI Dan-dan, JU Zhi-yu, HOU Xu-feng, NIU Liang-feng, HUANG Xi-yao(161)
Design and Implementation of Polymer Chemistry Irtual Experiment Based on Interactive Video .....	ZHOU Li-Jun, WANG Dong-Mei, TENG Teng, YAO Tong-Jie(164)
Teaching Reform on Course of Principles of Chemical Engineering .....	YIN Xiao-jie, HAN Yang, QIN Guo-xu, WANG Xin-yun, HE Jin-pei, YIN Yan-jun(167)
Preliminary Study on Modular Teaching of Biochemistry in College of Pharmacy of A University .....	HU Yan-jin, DIAO Huan, TAO A-li, LIU Zi-ping, XU Yan(170)
Establishment and Application of Online and Offline Hybrid Instrumental Analysis Experiment Teaching Mode .....	WANG Hui-zhen, GUO Yun-yun, LAI Xin-yue, GOU Xue(174)
Analysis of Teaching Reform and Exploration on Instrumental Analysis .....	LIU Bo, TAN Jian-juan, PENG Yong-li(177)
Application of Virtual Simulation in Organic Chemistry Experiment Teaching .....	YU Jin-tao, TENG Qiao-qiao(180)
Exploration and Practice on Diversified Teaching Methods in Engineering Chemistry .....	XIE Yun-peng(182)
Application of PBL Teaching Mode on Mixed Online and Offline Teaching Modes on Oil Processing Technology.....	LI Xue, WANG Jun-ying, ZHENG Hai-bo, CAI Yi-hui(185)
Teaching Reform and Practice on Inorganic Chemistry ExperimentsBased on “Student Centered ”——Taking Henan University as An Example .....	SUN Lin, CHENG Yu-jie, LI Hong, LI Ming-xue(187)
Preliminary Exploration on Course Ideology and Politics Education for Course of Physical Chemistry .....	LI Li, LI Wei, ZHANG Ming-bo, ZHANG Xu(190)
Exploration on Curriculum Construction of Polymer Materials Specialty under the Background of Ideological and Political Education .....	MEI Qun-bo, SONG Juan (193)
Preliminary Study on Educational Reform of Environmental Impact Assessment Course .....	SUN Jin-hua, YANG Liu, KONG Yu-hua, GUO Er-hui, WU Ming-zuo(196)
Teaching Exploration on Inorganic Chemistry—Mixed Pedagogy .....	HAILIQIAN · Tao-er-da-hong(199)
Reflection on Reform of Information Retrieval for Materials Specialty in Local Colleges .....	LI Jing, GUI Cheng-mei, MENG Xiang-zhen(202)
Exploration and Practice of Teaching Reform on Chemical Experiment in Higher Vocational Education .....	HUANG Qiu-mei, NI Ming-long, WANG Zhen, XIAO Chun-fen, SHI Ming(205)
Exploration and Practice on Pharmaceutical Exploratory Experiment under the Background of “Gold Course” .....	KONG Ji-chuan, LI Yang, ZHOU Jing-chun(207)

Teaching Research on Human Blood Albumin Content Determination Method with Mind Mapping .....  
*SI Xin-xin, ZHANG Xiao, FU Mian, LI Ting-ting, MA Wei-xing* (211)

Exploration and Practice on Physical Chemistry Teaching Reform Based on Curriculum Ideological and Political Concepts .....  
 ..... *LI Bin, XU Hang-xian* (213)

Research and Practice on Teaching Innovation System of Modern Instrumental Analysis in Postgraduate Teaching .....  
 ..... *YAO Jun* (216)

Exploration and Practice on Ideological and Political Education in Chemical Engineering Design Teaching ..... *TAN Ya-nan* (219)

Exploration on Relationship Between Innovation and Entrepreneurship Ability and Teaching Reform Depended on Academic Competition .....  
 ..... *SHAO Mei-ling, SHI Zhan* (221)

Chemistry Teaching Reform Based on Making Experiment Micro Video by Students' Mobile Phone ..... *ZHENG Quan* (224)

Exploration on Teaching of General Chemistry Courses for Non-chemistry Specialty ..... *LI Bo, WANG Xiao-huan, CHEN Shu-yang, SUN Hong-xian, LI Qi-yang* (227)

Application of Featured Cases in Ideological and Political Construction of College Courses—Taking Course of Mechanical Properties of Materials as An Example .....  
 ...*HE Han, WANG Lin, ZHAO Ya-dong, ZHANG Yang-ming* (230)

Teaching Reform on Pharmaceutical Chemistry Based on Concept of “CDIO” Engineering Education ... *LI Ling-ling, ZUO Zhen-yu, HUANG Hao, YANG Zhong-hua, CHEN Jun, QIN Xiao-rong* (233)

Exploration on Online Teaching Methods for Course Design of Chemical Engineering Principles .....  
 ..... *ZHU Jie, LI Hui-ming, LI Hong-mei* (236)

Reform and Practice on Design-type Courses of Chemical Engineering and Technology Based on Training of Engineering Ability .....  
 ..... *WANG Xiao-yan, CHANG Wen-gui, XU Guang-nian* (239)

Study on Online and Offline Mixed Teaching Mode for Inorganic Chemistry Bilingual Curriculum in “OPCE” System .....  
 ..... *GE Su-xiang, ZHENG Zhi, ZHANG Yan-ge, GUAN Hui-juan, LI Cai-xia, CAI Kun* (241)

Study on Evaluation Mechanism of Chemical Technology Specialized Courses under Modern Apprenticeship Mode .....  
 ..... *YANG Yong-po, WANG Jian-qiang* (244)

Discussion on Current Situation and Countermeasures of Coal Mine Ventilation Safety in New Period ..... *LIU Fu-xin* (247)

Study on Risk Point Management Model of Chemical Enterprise .....  
 ..... *YANG Rui-xia, YANG Qian, XU Xiao-feng* (249)

Construction of Performance Evaluation Index System for Safety Management of Dangerous Chemicals in University Laboratory.....  
 ..... *ZHAO Jian-hua, DENG Shun-xin* (254)

Problems and Countermeasures in Instrument Management of Chemical Laboratories in Private Colleges .....  
 ..... *WU Yun, MA Hong-xia* (258)

## GUANGZHOU CHEMICAL INDUSTRY

Open Publishing

Established in 1973 (Semimonthly)

Vol. 50 No. 12

Jun. 2022

### Managed by:

Guangzhou Chemical Industrial Group Co., Ltd.

### Sponsored by:

Guangzhou Research & Design Institute of Chemical Industry

Guangzhou Society of Chemistry and Chemical Engineering

### Edited by:

Editorial Office of “GUANGZHOU CHEMICAL INDUSTRY”

**Chief Editor:** WU Wen-li

**Vice Chief Editor:** LIN Jun-ying

**Editor:** HE Qi-hong, CAO Xin

**Address:** No. 609-610, West Block, Main Building, Science Information Building, 111 Huangpu District Science Avenue, Guangzhou, P. R. China

**Postcode:** 510670

**Tel:** 020-31801512

13560218977 (Associate Editor Lin)

**Official website:** <http://www.gzhgbjb.cn>

<http://gzha.cbpt.cnki.net>

**E-mail:** [gzhgbjb@vip.126.com](mailto:gzhgbjb@vip.126.com)

[gzhgqks@163.com](mailto:gzhgqks@163.com)

### Printed by:

Guangzhou Dejia Color Printing Co., Ltd.

### Overseas Distributed by:

China National Publishing Industry Trading Corporation

**Journal Code:** ISSN 1001-9677  
CN 44-1228/TQ

**Advertising Business License No.:** 4401004002668