

中国知网、万方、维普数据库收录期刊
中国学术期刊综合评价数据库统计源期刊
中国核心期刊(遴选)数据库收录期刊
美国《化学文摘》(CA)收录期刊
全国石油和化工行业优秀期刊一等奖

国际标准连续出版物号: ISSN 1007-1865
国内统一连续出版物号: CN44-1238/TQ
半月刊 创刊于1974年

广东化工(半月刊)

广东化工

Guangdong Chemical Industry

2022 **19**
10月上半月刊
第49卷 (总第477期)

主办单位: 广东省科学院化工研究所

第四十九卷 第十九期 (总第四百七十七期)

二〇二三年 十月上半月刊



邮发代号: 46-211

ISSN 1007-1865



广东化工

Guangdong Chemical Industry

第 49 卷 第 19 期 (总第 477 期)

10 月上半月刊

2022 年 10 月 15 日出版

刊号 $\frac{\text{ISSN } 1007 - 1865}{\text{CN } 44 - 1238/\text{TQ}}$

1974 年创刊 半月刊

●全国石油与化工行业优秀期刊一等奖

●中国核心期刊(遴选)数据库收录期刊

●中国学术期刊综合评价数据库统计源

主 管: 广东省科学院

主 办: 广东省科学院化工研究所

社 长: 麦裕良

出版发行: 《广东化工》编辑部

发行范围: 国内外公开发行

地 址: 广州市越秀区越华路 116 号

电话/传真: (020) 83302517 83336009

微 信: gdcic20

电子邮箱: gdcic200@163.com

投稿网址: <http://www.gdchem.com>

广告经营许可证号: 440000100138

印 刷: 广州一龙印刷有限公司

订 购: 全国各地邮局、所

邮发代号: 46 - 211

邮局全年定价:

国内 480 元



目 次

◆ 试验与研究

- 1 一种新型 AIE/AIEE 特征荧光染料的合成与光谱性质研究
周晓红, 何佳宇, 彭金赛
- 4 磷酸铁锂软包与铝壳电池性能比较 于维珂, 施凯霞, 汪涛
- 7 成核剂对无规共聚聚丙烯性能影响的比较研究
朱锦美, 杨营, 姚棋, 等
- 11 黄腐酸钾接枝丙烯酸/丙烯酰胺保水剂的制备和性能研究
宋跃, 靳瑞文, 谷雨, 等
- 14 硅烷-二氧化硅涂层的疏液性能研究
王建辉, 温艺琳, 刘文锋, 等
- 17 掺杂聚吡咯涂层合成及其对铜防腐蚀性能研究 汪涛
- 20 满足喷涂工艺的阻燃热熔胶 曹少波
- 23 新型固态荧光碳点复合物的制备及其用于快速潜在指纹识别
侯婉毅, 张鹏翔, 王乾, 等
- 28 席夫碱铋配合物的开发及应用科研成果转化为创新实验的探索及实践
李传华, 徐佳丽, 邝洁, 等
- 30 一种用于检测羧酸酯酶荧光探针的合成及表征
游辉, 滕明刚, 谢国旺, 等
- 34 三草酸合铁(III)酸钾制备新方法的探讨及其条件优化
曹韩源, 程彬, 崔培培, 等
- 38 覆膜铁罐用于酸性食品包装的金属元素迁移问题浅析 顾婕
- 40 一种乙基香兰素共晶的合成、结构与表征
夏童, 李鑫, 王子宁, 等
- 43 复方二甲双胍格列吡嗪胶囊的溶出度研究和方法学验证
何劼毅, 黄翰林, 漆欣筑, 等
- 46 藏荆芥药材质量标准研究 泽仁拉姆, 袁瑞瑛, 徐福春, 等
- 49 化妆品中保湿剂的拮抗与增效作用探究
钱进, 邓慧, 李华真, 等
- 55 长效保湿身体乳的研究与应用 黄小梅, 刘海军, 亓玉锋
- 58 化妆品常见保湿剂在较低浓度下的保湿效果探究
冯锋, 黄全胜, 包计贤, 等
- 61 废弃果皮发酵制备絮凝剂研究 李沛莲, 黄文艺, 杨涵, 等
- 65 不同驯化方式对微生物抑尘剂性能的影响
王佩瑶, 耿志, 赵艳云, 等
- 69 氟丙菊酯合成工艺研究 王教飞, 顾双双
- 72 搅拌槽内废树脂-水混合特性数值模拟
段治强, 邓建华, 邓建军

75 管流中微粒污垢剥蚀机制研究 陈曦宇, 王柯栩

◆ 专论与综述

- 80 电化学传感器检测 γ -氨基丁酸的研究进展
武浩桐, 李爱学, 王清涛
- 84 二氧化钛光催化降解甲基橙废水的研究进展 李伟
- 86 多功能光热材料在海水淡化中研究进展与应用
毛钦清, 张丽莎
- 88 锂离子电池高容量层状正极材料研究进展 常毅
- 93 生物炭对硝态氮的吸附与淋失影响研究进展
何碧红, 丁哲, 谢伟雪
- 95 纳米材料在钻井液封堵降滤失中的研究进展 王少帅, 张华
- 98 我国线性低密度聚乙烯行业分析 段欣瑞
- 102 石化行业小分子烃类吸附分离研究进展
刘思佳, 汪鹏, 王学海, 等
- 105 云南某炼厂开工初期汽油调和分析及优化 胡锦涛, 侯云龙
- 109 Smart Plant P&ID 管道表生成优化 张增增
- 113 新型 2,6-二取代嘌呤类衍生物的合成及抗肿瘤活性初探
朱子豪, 何恒运, 张炜昆, 等
- 116 多糖的修饰及其在生物医学方面的应用
刘思贤, 钟文英, 岳婉晴
- 119 新型冠状病毒肺炎靶点及药物研究进展 戴权, 朱初
- 122 选择性组蛋白去乙酰化酶 3 抑制剂的治疗前景研究进展
李慧丽, 李珏, 沈祥春, 等
- 126 半乳糖介导的主动肝靶向给药系统研究进展 朱初, 戴权
- 129 山竹果皮在化妆品领域应用前景研究
吴以禄, 钟怡莹, 陈忻, 等
- 132 锰基异质结光催化材料在降解水体染料污染物中的研究进展
杨宜康, 张丽莎
- 135 硝基酚类废水降解的研究进展 沈孝东, 胡进忠, 蔡卓尔, 等
- 137 我国北方地区森林土壤中有机氯农药的含量特征和空间分布研究
曹臻, 李军, 邴海健, 等
- 142 金属电偶腐蚀影响因素研究综述 王晓欢, 张胜寒, 狄杰

◆ 环境保护

- 144 深圳市重点领域塑料制品使用现状调查分析
陈鸿芳, 张帆, 张国斌, 等
- 148 三亚市“禁塑”工作成效调查研究
张国斌, 段立哲, 谭全银, 等
- 152 钟村污水处理厂改扩建工程案例及设计要点 钟德江

本期基金项目论文 (共 24 篇)

- 1 一种新型 AIE/AIEE 特征荧光染料的合成与光谱性质研究
- 11 黄腐酸钾接枝丙烯酸/丙烯酰胺保水剂的制备和性能研究
- 14 硅烷-二氧化硅涂层的疏液性能研究
- 23 新型固态荧光碳点复合物的制备及其用于快速潜在指纹识别
- 28 席夫碱铋配合物的开发及应用科研成果转化为创新实验的探索及实践
- 30 一种用于检测羧酸酯酶荧光探针的合成及表征
- 34 三草酸合铁(III)酸钾制备新方法的探讨及其条件优化
- 46 藏荆芥药材质量标准研究
- 61 废弃果皮发酵制备絮凝剂研究
- 65 不同驯化方式对微生物抑尘剂性能的影响
- 72 搅拌槽内废树脂-水混合特性数值模拟
- 80 电化学传感器检测 γ -氨基丁酸的研究进展
- 93 生物炭对硝态氮的吸附与淋失影响研究进展
- 113 新型 2,6-二取代嘌呤类衍生物的合成及抗肿瘤活性初探
- 122 选择性组蛋白去乙酰化酶 3 抑制剂的治疗前景研究进展
- 148 三亚市“禁塑”工作成效调查研究
- 155 高硬煤化工废水无废处理软化技术研究
- 228 陶瓷原料振动流化床干燥器流动特性数值分析
- 233 实验室危险废物中有机氯农药含量的测定
- 237 在线固相萃取-超高效液相色谱-三重四级杆质谱法测定地表水中 22 种磺胺类抗生素
- 252 氰基吩噻嗪荧光分子的合成及在有机质子检测中的应用——推荐一个有机化学综合实验
- 255 结构化学课程全面推向化工类专业的必要性
- 257 科学研究融入《材料研究与测试方法》实验教学——虚实结合氨基改性还原氧化石墨烯傅立叶变换红外光谱测试
- 260 《生物化学》课程中光合作用章节中的诺贝尔奖成果及其思政应用

- 155 高硬煤化工废水无废处理软化技术研究 李小端, 王晓雷
- 158 芬顿氧化+BAF 在汽车涂装废水工程中的应用 郭建军, 陈国辉, 吴芷静, 等
- 161 印染废水处理技术与展望 王丹宇, 李子程
- 163 高浓度化工废水处理及回用工程实例 吕小芳
- 166 饮用水水源地环境状况及保护对策研究 柳杨青, 宋小晴, 张帝
- 169 水解酸化+多段 AO 在某污水处理厂工程的应用 罗洪婕
- 172 物联网在农村生活污水运营中的应用 陈国辉, 叶伟华, 吴芷静, 等
- 175 臭氧-活性炭工艺对提升出厂水质的影响探究 潘春海, 金鑫
- 179 典型工业园区地块土壤污染状况调查案例浅析 何招智, 付朝
- 182 深圳市主要大气污染物“十三五”总量减排成效及“十四五”减排工作建议 钟鹏扬, 郑卓云, 颜敏, 等
- 184 北京市大气细颗粒物中糖类物质的化学组成及其来源 周健楠, 常淼, 沈秀斌, 等
- 188 生物炭性质对好氧颗粒污泥形成及其特性的影响探究 王冬, 邵晨, 李晋
- 193 燃煤火力发电厂生产过程中主要污染识别与控制措施浅析 范文哲, 张晓东
- 196 水解酸化+AOAO+两级臭氧催化氧化-BAF 组合工艺处理垃圾渗滤液 黎耀亮
- 199 热泵设备处理垃圾渗滤液反渗透浓缩液的中试研究 高珊, 张一凡, 高奇英, 等
- 202 湿法解毒耦合固化工艺降低污泥中可浸提态重金属的研究 彭磊, 邹笛, 李俊, 等
- 205 关于环境监测中临界值的探讨 何嘉伟
- 208 污染地块土壤石油烃健康风险评估研究 林建龙

◆ 设计与装备

- 211 化工装置联锁逻辑设计探讨 李思炜
- 216 重整装置反应器跑剂原因分析及对策 杨宇
- 220 改善马钢超大型焦炉热工管理效能的措施 曹先中, 杨勇, 赵勇
- 223 柴油加氢改质装置自动反冲洗过滤器运行分析 方秋建
- 228 陶瓷原料振动流化床干燥器流动特性数值分析 乐建波, 潘玉安, 高文杰, 等

◆ 分析测试

- 233 实验室危险废物中有机氯农药含量的测定 吴珉, 南晶, 宋扬扬, 等
- 237 在线固相萃取-超高效液相色谱-三重四级杆质谱法测定地表水中 22 种磺胺类抗生素 林墩
- 241 HPLC-固相萃取法测定石岐鸽蛋中 4 种氟喹诺酮类药物残留的研究 冯东仪, 马世柱, 陈楠, 等
- 243 手性固定相高效液相色谱法拆分右旋苯醚氰菊酯对映体 何永鹏, 黄祖懿
- 246 ICP-MS 法同时测定地表水中 19 种元素 梁宇雁
- 249 高氯废水总排口在线总有机碳分析仪(TOC-4200)COD_{Cr}-TOC 转换系数研究 林荣校

◆ 教学教改

- 252 氰基吩噻嗪荧光分子的合成及在有机质子检测中的应用——推荐一个有机化学综合实验 邵爱龙, 李梦然, 陈计芳, 等
- 255 结构化学课程全面推向化工类专业的必要性 贾雪梅, 林海莉, 曹静
- 257 科学研究融入《材料研究与测试方法》实验教学——虚实结合氨基改性还原氧化石墨烯傅立叶变换红外光谱测试 许立男, 林嘉文, 刘峻萌
- 260 《生物化学》课程中光合作用章节中的诺贝尔奖成果及其思政应用 韩晓军, 吴洁, 穆群, 等
- 262 《化工制图》教学方法改革与实践探讨 谭立强, 王浩丞, 陈益生
- 265 高校“药物合成实验”课程设计及创新思维方式培养的研究 王磊

本刊已许可中国学术期刊(光盘版)电子杂志社在中国知网及其系列数据库产品中以数字化方式复制、汇编、发行、信息网络传播本刊全文。作者向本刊提交文章发表的行为即视为同意我社上述声明。

Guangdong Chemical Industry

Vol.49 No.19

(Series No.477)

Publication ISSN 1007 – 1865
CN 44 – 1238/TQ

Contents

◆ Experiment & research

- 1 Synthesis and Spectral Properties of a Novel AIE/AIEE Characteristic Fluorescent Dye Zhou Xiaohong, He Jiayu, Peng Jinsai
4 Performance Comparison between Pouch and Aluminum Shell Batteries Yu Weike, Shi Kaixia, Wang Tao
7 A Comparative on Effect of Different Nucleating Agents on the Properties of Random Copolymer Polypropylene
Zhu Jinxian, Yang Ying, Yao Qi, Peng Shaohong
11 Preparation and Properties of Potassium Humate Grafted Acrylic Acid/Acrylamide Water-retaining Agent
Song Yue, Jin Ruiwen, Gu Yu, Liu Xiaopei, Wang Junwei, Li Zhongxian, Dong Xueliang, Yu Xuejun
14 Study on the Hydrophobic Performance of Silane-silica Coatings
Zhou Jianhui, Wen Yilin, Liu Wenfeng, Liao Jingwen, Li Yonglian
17 Synthesis of Polypyrrole Coatings Doped with Anion and its Anticorrosion Property for Copper Wang Tao
20 Flame Retardant Hot Melt Adhesive for Spraying Process Cao Shaobo
23 Novel Solid-state Fluorescent Carbon Dots Composite and its Application in Rapid Latent Fingerprint Detection
Hou Wanyi, Zhang Pengxiang, Wang Qian, Wang Haijiao
28 Exploration and Practice of Development and Biological Activity Study of Schiff-base Bismuth Complexes Scientific Research
Achievement Transformation Innovative Experimental Project
Li Chuanhua, Xu Jiali, Kuang Jie, Wang Lubao, Jiang Jianhong, Ye Lijuan, Tao Liming
30 Synthesis and cCharacterization of a Fluorescent Probe for the Detection of Carboxylesterase
You Hui, Teng Minggang, Xie Guowang, Liu Jiafang, Chai Huifang
34 Exploration of a New Preparation Method of Tripotassium Trioxalatoferrate(III) and Optimization of its Preparation Conditions
Cao Hanyuan, Cheng Bin, Cui Peipei, Deng Jihua, Liu Ya, Wu Xinshi
38 Migration of Metal Elements to Acid Food Simulants in Polymer-laminated Steel Can Gu Jie
40 Synthesis, Structure and Characterization of a Co-crystal of Ethyl Vanillin
Xia Tong, Li Xin, Wang Zining, Fan Changpo, Sun Bowang
43 Dissolution Study and Method Validation of Compound Metformin Hydrochloride and Glipizide Capsules
He Jieyi, Huang Hanlin, Qi Xinzhu, Zhu Jing
46 Study on Quality Standard of *Nepeta hemsleyana* Oliver ex Prain Zeren Lamu, Yuan Ruiying, Xu Fuchun, Yu Zhen
49 Research on Antagonistic and Synergistic Effects of Moisturizers in Cosmetics Qian Jin, Deng Hui, Li Huazhen, Li Chuanmao
55 Research and Application of Long-lasting Moisturizing Body Lotion Huang Xiaomei, Liu Haijun, Qi Yufeng
58 Study on Moisturizing Effect of Common Moisturizer in Cosmetics at Lower Concentration
Feng Feng, Huang Quansheng, Bao Jixian, Huang Liqiong
61 Study on Flocculant Preparation from Waste Peel by Fermentation
Li Peilian, Huang Wenyi, Yang Han, Liu Yongxin, Yang Quan, Deng Jingheng
65 Effects of Different Domestication Methods on the Performance of Microbial Dust Suppressants
Wang Peiyao, Geng Zhi, Zhao Yanyun, Yan Shanyijia, Wang Haoyu, Dong Yue
69 Study on Synthetic Technology of Acrinathrin Wang Jiaofei, Gu Shuangshuang
72 Numerical Analysis of Waste Resin-water Two Phase Mixing Characteristic in Stirrer Tank
Duan Zhiqiang, Deng Jianhua, Deng Jianjun
75 Study on Reentrainment of Particulate Fouling in Pipe Flow Chen Xiyu, Wang Kexu

◆ Summarize

- 80 Research Progress of Electrochemical Sensors for the Detection of γ -aminobutyric Acid Wu Haotong, Li Aixue, Wang Qingtao
84 Research Progress in Photocatalytic Degradation of Methyl Orange Wastewater by Titanium Dioxide Li Wei
86 Research Progress and Application of Multifunctional Photothermal Materials in Seawater Desalination
Mao Qinqing, Zhang Lisha
88 Research Status for High-performance Layered Cathodes of Lithium Ion Batteries Chang Yi
93 Research Progress on the Effects of Biochar on the Adsorption and Leaching of Nitrate Nitrogen
He Bihong, Ding Zhe, Xie Weixue
95 Research Progress of Nanomaterials in Drilling Fluid Plugging and Fluid Loss Reduction Wang Shaoshuai, Zhang Hua
98 Analysis of LLDPE Industry in China Duan Xinrui
102 Research Progress on Adsorption and Separation of Small Molecular Hydrocarbons in Petrochemical Industry
Liu Sijia, Wang Peng, Wang Xuehai, Wang Kuanling, Liu Shuhe
105 Gasoline Blending Analysis and Optimization in the Start-up Period of a Yunnan Refinery Hu Jinyuan, Hou Yunlong
109 The Optimization of Smart Plant P&ID Pipeline List Generation Zhang Zengzeng
113 Synthesis and Preliminary Antitumor Activity of Novel 2,6-disubstituted Purine Derivatives
Zhu Zihao, He Hengyun, Zhang Weikun, Niu Min, Ma Jieyao, He Qin
116 A Review: The Modification Methods of Polysaccharides and Their Applications in Biomedicine
Liu Sixian, Zhong Wenying, Yue Wanqing
119 Advances in the Research of COVID-19 Drugs Dai Quan, Zhu Ren
122 Therapeutic Potential of Selective Histone Deacetylase 3 Inhibitors Li Huili, Li Jue, Shen Xiangchun, Jiang Fei
126 Advances in the Study of Galactose-mediated Active Liver Targeted Drug Delivery System Zhu Ren, Dai Quan
129 The Application of Mangosteen Peel in Cosmetics Field Wu Yilu, Zhong Yiying, Chen Xin, Zhang Kaixuan
132 Research Progress of Recyclable Photocatalysts for Pollutants Degradation in Water Yang Yikang, Zhang Lisha
135 Research Progress on the Degradation of Nitrophenols in Wastewater
Shen Xiaodong, Hu Jinzhong, Cai Zhuoer, Xu Yang, Chen Jian, Zhang Xiang, Sun Baiwang
137 Content Characteristics and Spatial Distribution of Organochlorine Pesticides in Forest Soils in Northern China
Cao Zhen, Li Jun, Bin Haijian, Wang Jing, Zheng Qian
142 Review of Research on Influencing Factors of Galvanic Corrosion of Metals Wang Xiaohuan, Zhang Shenghan, Di Jie

◆ Environmental protection

- 144 Investigation Analysis of the Current Situation of the Plastic Products Consumption in Key Areas of Shenzhen
Chen Hongfang, Zhang Fan, Zhang Guobin, Yuan Chen, Wu Yijue, Xie Linshen, Dai Zhiguang
- 148 Investigation Research on the Effectiveness of "Plastic Ban" in Sanya
Zhang Guobin, Duan Lizhe, Tan Quanyin, Chen Hongfang, Chen Guoyou, Yu Boping, Chen Yantong
- 152 Case Analysis and Design Points of Reconstruction and Extension Project for Zhongcun WWTP
Zhong Dejiang
- 155 Research on Softening Technology for Waste-free Treatment of High Hardness Coal Chemical Wastewater
Li Xiaoduan, Wang Xiaolei
- 158 Application of Fenton+BAF in Automobile Coating Wastewater Engineering
Guo Jianjun, Chen Guohui, Wu Zhijing, Lin Wenyao
- 161 The Treatment Technology of Printing and Dyeing Wastewater and Prospect
Wang Danyu, Li Zicheng
- 163 Treatment and Reuse of High Concentrated Chemical Wastewater
Lv Xiaofang
- 166 Research on the Environmental Status and Protection Countermeasures of Drinking Water Sources
Liu Yangqing, Song Xiaoqing, Zhang Di
Luo Hongjie
- 169 Application of Hydrolytic Acidification + Multi-stage AO in a WWTP
- 172 The Application of Internet of Things in Rural Domestic Sewage Operation
Chen Guohui, Ye Weihua, Wu Zhijing, Hong Qingchun
- 175 Explore the Impact of Ozone-activated Carbon Process on Improving the Quality of Factory Water
Pan Chunhai, Jin Xin
- 179 Case Analysis of Soil Pollution Investigation in Typical Industrial Park
He Zhaozhi, Fu Chao
- 182 The Effect of Main Air Pollutants Emission Reduction in Shenzhen during "The 13th Five-Year Plan" and Suggestions for Emission Reduction during "The 14th Five-Year Plan"
Zhong Pengyang, Zheng Zhuoyun, Yan Min, Chen Dan
- 184 Carbohydrates Composition and Source Apportionment of PM_{2.5} in Beijing
Zhou Jiannan, Chang Miao, Shen Xiue, Liu Baoxian, Chen Yuanyuan, Jing Kuan, Yang Meng
- 188 The Effects of Biochar Properties on the Formation and Characteristics of Aerobic Granular Sludge
Wang Dong, Shao Chen, Li Jin
- 193 Preliminary Analysis on Environmental Protection Measures of Coal-fired Thermal Power Plants
Fan Wenzhe, Zhang Xiaodong
- 196 Combined Process of HASB-AOAO, Two-stage Ozone Catalytic Oxidation BAF for Treatment of Landfill Leachate
Li Yaoliang
- 199 Pilot Study on Treatment of Landfill Leachate Reverse Osmosis Concentrate by Heat Pump Equipment
Gao Shan, Zhang Yifan, Gao Qiyang, Wei Dunqing, Zhu Xiaohui
- 202 Study on Reducing Extractable Heavy Metals in Sludge by Wet Detoxification Coupled Solidification Process
Peng Lei, Zou Di, Li Jun, Zhao Wei, Shi Qiaoqing, Liu Dejun, Xie Zhijun, Yang Hualiang, Miao He
He Jiawei
- 205 Discussion on Critical Value in Environmental Monitoring
- 208 Study on Health Risk Assessment of Petroleum Hydrocarbons in Contaminated Soil
Lin Jianlong

◆ Design & equipment

- 211 Discussion on Design of Interlock Logic for Chemical Plant
Li Siwei
- 216 Cause Analysis of Catalyst Loss in Catalytic Reforming Unit
Yang Yu
- 220 Measures to Improve Thermotechnical Management Efficiency of Large Coke Oven in Masteel
Cao Xianzhong, Yang Yong, Zhao Yong
- 223 Operation Analysis of Automatic Backwash Filter in Diesel Hydrogenation Modification Unit
Fang Qiujian
- 228 Numerical Analysis of Flow Characteristics in Vibrating Fluidized Bed Dryer for Ceramic Raw Material
Le Jianbo, Pan Yu'an, Gao Wenjie, Kuang Xiaochun

◆ Analysis testing

- 233 Determination of Organochlorine Pesticides in Laboratory Hazardous Wastes
Wu Min, Nan Jing, Song Yangyang, Chen Guozhen, Su Hua, Wu Situo
- 237 Determination of 22 Sulfonamide Antibiotics in Surface Water by On-line Solid Phase Extraction with Ultra-performance Liquid Chromatography-triple Quadrupole Mass Spectrometry
Lin Tun
- 241 Determination of Four Fluoroquinolones Residues in Shi Qi Pigeon Eggs by HPLC-solid Phase Extraction
Feng Dongyi, Ma Shizhu, Chen Nan, Zhou Jiacheng, Lin Junjie
- 243 Reslution of D-cyphenothrin Enantiomers by HPLC with Chiral Stational Phase
He Yongpeng, Huang Zuyi
- 246 Simultaneous Determination of 19 Elements in Surface Water by ICP-MS
Liang Yuyan
- 249 Study on CODCr-TOC Conversion Coefficient of Total Outlet Online Total Organic Carbon Analyzer (TOC-4200)
Lin Rongxiao

◆ Teaching reform

- 252 Synthesis of Cyanophenothiazines and Its Application in Proton Ion Detection—Recommend a Comprehensive Organic Chemistry Experiment
Shao Ailong, Li Mengran, Chen Jifang, Yang Peilai, Liu Chenxu, Wu Hai, Chen Shuisheng
- 255 The Necessity of the Structural Chemistry Course to Comprehensively Promote the Chemical Industry Major
Jia Xuemei, Lin Haili, Cao Jing
- 257 Scientific Research into Material Research and Testing Methods Experimental Teaching--Fourier Transform Infrared Spectroscopy of Modification of Reduced Graphene Oxide by Amination Based on Virtual-real Combination
Xu Linan, Lin Jiawen, Liu Junmeng
- 260 Nobel Prize Achievements and Their Ideological and Political Applications in the Chapter of Photosynthesis in Biochemistry
Han Xiaojun, Wu Jie, Mu Wei, Xu Weili
- 262 Teaching Methodology Innovation and Practice of Chemical Engineering Drawing Course
Tan Liqiang, Wang Haocheng, Chen Yisheng
- 265 The Study of "Drug Synthesis Experiment" Course Design and Cultivation of Innovative Thinking
Wang Lei

Sponsor and Publisher: Guangdong Petroleum and Fine Chemicals Institute
Editor: The Editorial Office of Guangdong Chemical Industry

Address: The Editorial Office of Guangdong Chemical Industry, 116 Yuehua Road, Guangzhou, 510030 China
Tel/Fax: 86-20-83336009, 86-20-833302517
E-mail: gdcic200@163.com <http://www.gdchem.com>