

ISSN 1001 - 9677

CN44 - 1228/TQ



扫码关注

广州化工

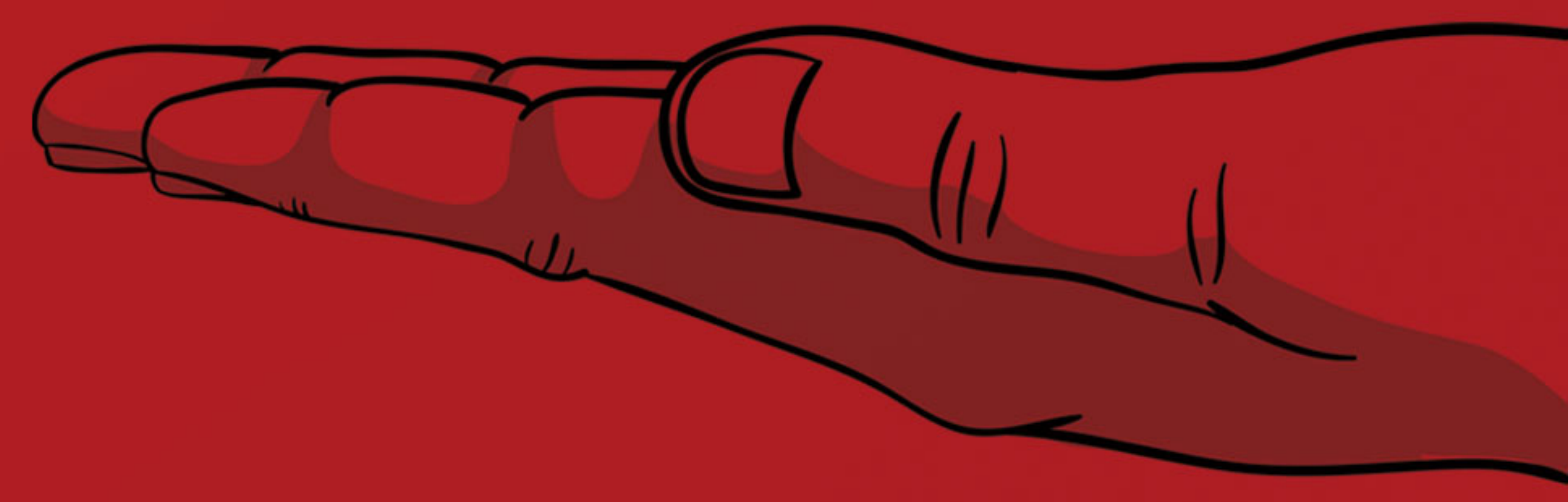
GUANGZHOU CHEMICAL INDUSTRY

第 11 期
2021年6月
(上半月)
第 49 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

广州工业投资控股集团有限公司
疫情不止 我们不歇



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 49 卷第 11 期

2021 年 6 月(上半月)

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

协 办:广州市化学化工学会

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

地 址:广州市白云区鹤联街 229 号万力创新园

D 座

邮 码:510425

电 话:(020)36372165

邮 箱:gzhghjb@vip.126.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

专论与综述

- 葫芦[n]脘的合成及其在分离分析中的应用 陈 健,
朱雨情,姚佳伟,陆 平,刘 华,周 全,李子民,张梦亦,沙 鸥(1)
- 聚丙烯增刚材料研究进展 程 康,汪 锋,杜龙焰(6)
- 车用乙醇汽油的腐蚀性和溶胀性研究进展
..... 王显妮,周晓慧,李楚璇(10)
- 绿色开采技术在采矿工程中的应用研究 张 波(12)
- 胶体金免疫层析试纸条在食品安全检测中的研究进展
..... 孟 东,陈 蕾,王 波,墨瑾瑜,李周敏(14)
- 化学发光分析法研究综述 李 霞,王仕宝(18)
- 论述荧光铜纳米簇检测 Cr(VI)的重要性
..... 陈天霞,罗桂林,晁 婧,舒士倡(21)
- 磷矿伴生稀土检测进展及难点分析
陈学航,张建刚,冯永渝,李红洲,杨燕红,肖 超,马义虔(23)
- 锌精矿的化学检测方法与实践探讨 马莉娜(27)
- 化工的可持续性发展及媒体影响力分析 沈 歆(30)

科学实验

- 影响丁苯透明抗冲树脂熔指因素分析 邓晓兴(33)
- $\alpha\text{-Fe}_2\text{O}_3/\text{PF}$ 纳米复合材料的制备研究 ... 赵 丽,苏碧桃(35)
- 负载型 Collins 试剂的制备及应用研究 邹于梅,何莉萍(38)
- 剪切变稀流体中液滴运动的研究
..... 张 薇,张 羽,李姝瑶,刘 珂,魏弋伟,李少白(40)
- 超稳 Y 型分子筛孔道改性剂及表征
王正奇,卓润生,刘新生,王韵金,王玉乐,张 平,杨光友(44)
- 复合助剂对聚乙烯产品 DJM-1820 性能影响
..... 赵 飞,胡井强(46)
- 耐磨自润滑热塑性聚酰亚胺复合材料研究
..... 廖永江,何晓东,孔庆珊(50)
- pH 对亚硫酸盐型自养反硝化的影响研究
..... 连雨露,倪伟敏,李 可,刘月瞳(54)
- 铁碳微电解耦合双氧水法处理退浆酶废水研究
..... 赵子玲,张诗莹,马 扬,刘建新,刘 晖,姚 创(57)

陶瓷膜在高温燃煤烟气净化中的比选研究	彭 靛,刘清才,吴其荣,张 昊(61)
白藜芦醇软胶囊的制备及含量测定	邓乾华,夏 艳,杨善彬,李 想,冯婷婷,张雪华,陈荣彬,廖友林,陶桂英,王晓楠,苟文琼,唐佳丽,李倩兰,李 霄,蒲道俊(64)
热水法提取鱼鳞明胶的最佳条件研究	李宜航,唐文力(67)
含活性肽复合物的眼部护理组合无创性功效评价与分析	马 琳,简苑晴,唐嘉雯,李雪竹,麦杰英,汪应秀(70)

分析测试

棕竹的化学成分预试研究	李俊芳,陈贤正,林大都(73)
果糖、葡萄糖分析方法的研究	季佳佳,张永昭,汪 洋,李宏威(76)
UPLC-Q-TOF-MS ^E 技术结合 UNIFI 数据库快速定性分析蒲黄化学成分	朱高峰,陈 瑞,张倚鸣,陈思源,周 维,王建塔,崔 杏,汤 磊(79)
正己烷紫外分光光度法测定石油类标准曲线使用时间的探讨	张宝军,张 凡(85)
液相色谱-质谱法测定水产品中喹诺酮类药物	朱品玲,钟茂生,翁才振,严 飞,陈舒奕,陈珍珍,苏 怡(87)

环境保护

某污水处理厂氧化沟射流曝气工程改造效果分析	吴益锋,林建翔,费乐民,潘 炯,陈 锋,吴祖良(92)
污泥回流池碳源投加对低碳污水氮磷去除的影响	姚 创,赵子玲,林国颖,刘建新,刘 晖(95)
精细化工项目竣工环保自主验收注意事项	张艳君(99)

化工机械

SE-II 东方炉运行主要问题原因分析与改进建议	刘振宁,孙晓伟,李海根(101)
以可靠性为中心的维修(RCM)在测井设备中的应用	李微微,钟 静(105)

生产技术

乙苯脱烷基异构化催化剂的性能比较	孙雪冬,殷 俊,张云鹏(109)
基于射频识别 RFID 技术与 SQL 数据库的电镀生产线控制系统	晏 柳,柯亚龙,张 燃,徐海卿,王永光(112)
一种适用于电子气工厂的新型制氮机工艺研究	邓 韬,王开兵,钟小禹,刘 巍,王 君,全诗林(115)
纯氧燃烧火焰玻璃抛光法及其工艺研究	胡雪沁,高生明,钟小禹,刘继雄(118)
空分径向流吸附器吸附剂自动装填装置的工艺设计	李 伟,王开兵,刘继雄(122)

教学园地

热力学状态函数标准态的含义	刘 兴,李俊华,曾荣英(125)
---------------------	------------------

理想气体恒 pT 过程中可逆体积功的计算	杨 嫣,陈山川,张 改,谢 娟(127)
化工原理辩证思维教学探讨	唐正姣,李 萍,陈苏芳,马家玉,覃远航,汪铁林(129)
天然气制甲醇仿真教学工厂实践教学体系的研究与探索	魏 菊,何 风(131)
基于 OBE 教学理念的“材料成型原理”课程教学改革 王忠堂,张玉妥,刘爱国,崔海涛,李建军,徐兴文,刘凤国(133)
线上教学在高校大精仪自助测试培训中的应用	赵 艳,赵敬哲(136)
工程教育认证背景下的化工仪表及自动化教学改革	张 华,郑建东,马田林,周阿洋,张 蕾(139)
基于 MOOC+SPOC 的物理化学翻转课堂教学实践探讨	燕 音,帕提曼·尼扎木丁,王 飒(141)
基于 OBE 理念的《材料科学基础》课程教学设计	温建武,李延波,王军霞,曹林洪(143)
高职医药院校药物分析技术课程教学改革的探索	牟丽娜(145)
居家学习下食品类专业《分析化学实验》在线教学初探	刘晓庚,徐晓滢,陈优生,邵 佳,刘 琴(147)
仪器分析“N+1”模式课程改革研究	贾海浪,林丽霞,孙建华(150)
新政策和法规背景下《制药工艺学》教学问题的探讨	龚盼盼,冯雪花,王章姐(152)
化工安全工程课程思政教学探索与实践	李延勋,李聪聪,高晓强,赵龙涛,陈 垒,吕和坤(154)
虚拟仿真技术在环境类专业实验教学中的应用与思考 蔡永兵,李飞跃,王 艳,谢 越,范行军,马万征,孟凡德,纪文超(156)
农林院校有机化学实验教学的改进与探索	吴苏琴,熊万明,聂旭亮,邓昌晞(158)
多层次、系统化环境工程专业实验教学体系构建	黄 毅(161)
医药院校分析化学实验教学的思考与探索	陈铭祥,刘 东,郑明彬,周鹏飞,郭 宁(163)
课程思政在有机化学教学中的融入	崔颖娜,王爱玲,姜 岚,雷 宇(166)
课程教学中工程实践能力培养剖析	郁青春,周晓雷(168)
现代学徒制培养在石油化工技术专业人才培养的现状与思考	姚惠娟(170)
化工专业学生工程设计能力的培养与实践	续 京(174)
“双一流”建设背景下地方高校教学特色化改革	梁小红,王晓敏,李玉平,贾 兰,董 楠,郭端阳(176)
全日制培养材料与化工专业学位研究生的实践探索 程正载,贾如艳,蔡拴普,孙 欣,张思龙,吴晓琴,欧阳曙光(178)
中学化学实验室管理的实践与思考	陈昶宏(180)
工程教育认证背景下环境工程实验室安全管理探析	刘君侠,刘琼玉(182)

安全与管理

化工生产技术管理与化工安全生产的相关分析	刘碧云(185)
气雾剂产品回收报废过程中的火灾危险性浅析	童三伏(188)

CONTENTS

Synthesis of Cucurbit[<i>n</i>]urils and Its Application in Separation Analysis	
<i>CHEN Jian, ZHU Yu-qing, YAO Jia-wei, LU Ping, LIU Hua, ZHOU Quan, LI Zi-min, ZHANG Meng-yi, SHA Ou</i> (1)	
Research Progress on Polypropylene Stiffening Materials	<i>CHENG Kang, WANG Feng, DU Long-yan</i> (6)
Study on Corrosion and Swelling Properties of Ethanol Gasoline for Vehicles	
.....	<i>WANG Xian-ni, ZHOU Xiao-hui, LI Chu-xuan</i> (10)
Application of Green Mining Technology in Mining Engineering Adenocarcinoma	<i>ZHANG Bo</i> (12)
Application Progress on Colloidal Gold Immunechromatography Test Strip in Food Safety Detection	
.....	<i>MENG Dong, CHEN Lei, WANG Bo, MO Jin-yu, LI Zhou-min</i> (14)
Research Review of Chemiluminescence Analysis	<i>LI Xia, WANG Shi-bao</i> (18)
Discussion on Importance of Fluorescent Copper Nanocluster for Detecting Cr(VI)	
.....	<i>CHEN Tian-xia, LUO Gui-lin, CHAO Jing, SHU Shi-chang</i> (21)
Progress and Aporia Analysis for Detection of Phosphate Mine Associate Rare Earth	
<i>CHEN Xue-hang, ZHANG Jian-gang, FENG Yong-yu, LI Hong-zhou, YANG Yan-hong, XIAO Chao, MA Yi-qian</i> (23)	
Chemical Testing Method and Practice of Zinc Concentrate	<i>MA Li-na</i> (27)
Discussion on Sustainable Development and Media Publicity of Chemical Engineering	<i>SHEN Xin</i> (30)
Analysis of Factors Affecting Melting Index of Styrene Butadiene Transparent Impact Resin	
.....	<i>DENG Xiao-xing</i> (33)
Preparation of α -Fe ₂ O ₃ /PF Nanocomposites	<i>ZHAO Li, SU Bi-tao</i> (35)
Preparation and Application of Supported Collins Reagent	<i>ZOU Yu-mei, HE Li-ping</i> (38)
Study on Droplet Movement in Shear Thinning Fluid	
.....	<i>ZHANG Wei, ZHANG Yu, LI Shu-yao, LIU Ke, WEI Yi-feng, LI Shao-bai</i> (40)
Characterization and Characterization of Ultra Stable Y-type Molecular Sieve Pore Channel Modifier	
<i>WANG Zheng-qi, ZHOU Run-sheng, LIU Xin-sheng, WANG Yun-jin, WANG Yu-le, ZHANG Ping, YANG Guang-you</i> (44)	
Effect of Composite Additives on Properties of Polyethylene DJM-1820	<i>ZHAO Fei, HU Jing-qiang</i> (46)
Study on A Wear-resistant Self-lubricating Thermoplastic Polyimide Composite Material	
.....	<i>LIAO Yong-jiang, HE Xiao-dong, KONG Qing-shan</i> (50)
Effect of pH on Sulfite-type Autotrophic Denitrification	
.....	<i>LIAN Yu-lu, NI Wei-min, LI Ke, LIU Yue-tong</i> (54)
Study on Treatment of Desizing Enzyme Production Wastewater by Iron-carbon Microelectrolysis Coupled with Hydrogen Peroxide	
.....	<i>ZHAO Zi-ling, ZHANG Shi-ying, MA Yang, LIU Jian-xin, LIU Hui, YAO Chuang</i> (57)
Comparison and Selection of Ceramic Membrane in High Temperature Coal-fired Flue Gas Purification	
.....	<i>PENG Jing, LIU Qing-cai, WU Qi-rong, ZHANG Hao</i> (61)
Preparation and Content Determination of Resveratrol Soft Capsule	
<i>DENG Qian-hua, XIA Yan, YANG Shan-bin, LI Xiang, FENG Ting-ting, ZHANG Xue-hua, CHEN Rong-bin, LIAO You-lin, TAO Gui-ying, WANG Xiao-nan, GOU Wen-qiong, TANG Jia-li, LI Qian-lan, LI Xiao, PU Dao-jun</i> (64)	
Study on Optimal Conditions for Extracting Fish Scale Gelatin by Hot Water Method	
.....	<i>LI Yi-hang, TANG Wen-li</i> (67)
Non-invasive Efficacy Evaluation and Analysis of Eye Care Combinations Containing Active Peptide Compound	
.....	<i>MA Lin, JIAN Yuan-qing, TANG Jia-wen, LI Xue-zhu, MAI Jie-ying, WANG Ying-xiu</i> (70)
Pilot Study on Chemical Composition of <i>Rhapis excelsa</i> (Thunb.) Henry ex Rehd	
.....	<i>LI Jun-fang, CHEN Xian-zheng, LIN Da-du</i> (73)
Analysis Method for Fructose and Glucose	<i>JI Jia-jia, ZHANG Yong-zhao, WANG Yang, LI Hong-wei</i> (76)
Rapid Identification on Chemical Constituents in Roots of Pollen Typhae by UPLC-Q-TOF-MSE Combined with UNIFI Informatics Platform	

ZHU Gao-feng, CHEN Rui, ZHANG Yi-ming, CHEN Si-yuan, ZHOU Wei, WANG Jian-ta, CUI Xing, TANG Lei (79)	Discussion on Use Time of Petroleum Standard Curve Determined by n-hexane Ultraviolet Spectrophotometry	ZHANG Bao-Jun, ZHANG Fan(85)
	Determination of Quinolones Residues in Aquatic Products by Liquid Chromatography Mass Spectrometry	
ZHU Pin-ling, ZHONG Mao-sheng, WENG Cai-zhen, YAN Fei, CHEN Shu-yi, CHEN Zhen-zhen, SU Yi(87)	Effect Analysis of Jet Aeration Project of Oxidation Ditch in a Sewage Treatment Plant	
 WU Yi-feng, LIN Jian-xiang, FEI Le-min, PAN Jiong, CHEN Feng, WU Zu-liang(92)	
	Effect of Carbon Source Addition in Sludge Reflux Tank on Nitrogen and Phosphorus Removal in Low Carbon Sewage	YAO Chuang, ZHAO Zi-ling, LIN Guo-ying, LIU Jian-xin, LIU Hui(95)
	Study on Relationship between Parameters of Point Source Emissions and Maximum Ground-level Concentration	ZHANG Yan-jun(99)
	Cause Analysis of Main Problems in Operation and Suggestions for Improvement about SE- II Oriental Furnace	LIU Zhen-ning, SUN Xiao-wei, LI Hai-gen(101)
	Application of Reliability-centered Maintenance (RCM) in Logging Equipment	LI Wei-wei, ZHONG Jing(105)
	Performance Comparison of Isomerization Catalysts for Ethylbenzene Dealkylation	SUN Xue-dong, YIN Jun, ZHANG Yun-peng(109)
	Electroplating System Based on Radio Frequency Identification RFID Technology and SQL Database	YAN Liu, KE Ya-long, ZHANG Ran, XU Hai-qing, WANG Yong-guang(112)
	Study on A New Type of Nitrogen Generator Process Suitable for Electronic Gas Factory	DENG Tao, WANG Kai-bing, ZHONG Xiao-yu, LIU Wei, WANG Jun, QUAN Shi-lin(115)
	Study on Pure Oxygen Combustion Flame Polishing on Glass and Its Processing Technology	HU Xue-qin, GAO Sheng-ming, ZHONG Xiao-yu, LIU Ji-Xiong(118)
	Technological Design of Adsorbent Automatic Loading Device for Air Separation Radial Flow Adsorber	LI Wei, WANG Kai-bing, LIU Ji-xiong(122)
	Meaning of Standard States in Thermodynamic State Functions ...	LIU Xing, LI Jun-hua, ZENG Rong-ying(125)
	Calculations of Reversible Expansion Work in A Perfect Gas System undergo Constant-pT Process	YANG Yan, CHEN Shan-chuan, ZHANG Gai, XIE Juan (127)
	Discussions on Teaching of Dialectical Thinking of Chemical Engineering Principles	TANG Zheng-jiao, LI Ping, CHEN Su-fang, MA Jia-yu, QIN Yuan-hang, WANG Tie-lin(129)
	Study on Extraction of Pectin from Pear Residue by Acid Hydrolysis	WEI Ju, HE Feng(131)
	Teaching Reform on Principle of Material Processing Based on OBE Teaching Concept	WANG Zhong-tang, ZHANG Yu-tuo, LIU Ai-guo, CUI Hai-tao, LI Jian-jun, XU Xing-wen, LIU Feng-guo(133)
	Application of Online Teaching in Self-help Test Training of Large Precision Instruments in Universities	ZHAO Yan, ZHAO Jing-zhe(136)
	Teaching Reform and Practice of Chemical Instrumentation and Automation Based on Accreditation Engineering Education Standards	ZHANG Hua, ZHENG Jian-dong, MA Tian-lin, ZHOU A-yang, ZHANG Lei(139)
	Discussion on MOOC+SPOC Based Physical Chemistry Flipped Classroom Teaching Practice	YAN Yin, PATIMA Nizamidin, WANG Sa(141)
	Teaching Design on Materials Science Foundation Based on OBE Concept	WEN Jian-wu, LI Yan-bo, WANG Jun-xia, CAO Lin-hong(143)
	Exploration on Teaching Reform of Pharmaceutical Analysis Technology Course in Higher Vocational Medical Colleges	MU Li-na(145)
	Preliminary Study on Teaching of Analytical Chemistry Experimentin Food Colleges & Universities under Home Learning	LIU Xiao-geng, XU Xiao-ying, CHEN You-sheng, TAI Jia, LIU Qin(147)
	Study on "N+1" Mode Curriculum Reform of Instrumental Analysis	JIA Hai-lang, LIN Li-xia, SUN Jian-hua(150)

Exploration on Pharmaceutical Technology Teaching Methods Based on New Policies and Regulations
..... *GONG Pan-pan, FENG Xue-hua, WANG Zhang-jié*(152)
Exploration and Practice on Ideological and Political Teaching of Chemical Safety Engineering Course
..... *LI Yan-xun, LI Cong-cong, GAO Xiao-qiang, ZHAO Long-tao, CHEN Lei, LV He-kun*(154)
Application and Thinking of Virtual Simulation Technology in Experiment Teaching of Environmental Specialty
..... *CAI Yong-bing, LI Fei-yue, WANG Yan, XIE Yue, FAN Xing-jun, MA Wan-zheng, MENG Fan-de, JI Wen-chao*(156)
Improvement and Exploration on Organic Chemistry Experiment in Agricultural and Forestry Universities
..... *WU Su-qin, XIONG Wan-ming, NIE Xu-liang, DENG Chang-xi*(158)
Establishment on Multi-level and Systematic Experimental Teaching System of Environmental Engineering Major *HUANG Yi*(161)
Thinking and Exploration on Analytical Chemistry Experiment Teaching in Medical Colleges *CHEN Ming-xiang, LIU Dong, ZHENG Ming-bin, ZHOU Peng-fei, GUO Ning*(163)
Integration of Ideological, Political Courses into Organic Chemistry Teaching
..... *CUI Ying-na, WANG Ai-ling, JIANG Lan, LEI Yu*(166)
Analysis of Engineering Practice Ability Training in Teaching ...
..... *YU Qing-chun, ZHOU Xiao-lei*(168)
Current Situation and Thinking of Modern Apprenticeship Training about Petrochemical Technology Major Personnel Training
..... *YAO Hui-juan*(170)
Cultivation and Practice of Engineering Design Ability of Chemical Engineering Students *XU Jing*(174)
Reform on Teaching Characteristics in Local Universities under the Background of Double First-Class Construction
..... *LIANG Xiao-hong, WANG Xiao-min, LI Yu-ping, JIA Lan, DONG Nan, GUO Duan-yang*(176)
Practical Exploration on Full-time Cultivation of Graduate Students Majoring in Materials and Chemical Engineering
..... *CHENG Zheng-zai, JIA Ru-yan, CAI Shuan-pu, SUN Xin, ZHANG Si-long, WU Xiao-qin, OUYANG Shu-guang*(178)
Practice and Thinking of Chemistry Laboratory Management in Middle School *CHEN Chang-hong*(180)
Analysis of Safety Management of Environmental Engineering Laboratory Based on Engineering Education Accreditation
..... *LIU Jun-xia, LIU Qiong-yu*(182)
Correlation Analysis of Chemical Production Technology Management and Chemical Safety Production
..... *LIU Bi-yun*(185)
Analysis of Fire Risk in Process of Recycling Aerosol Products
..... *TONG San-fu*(188)

GUANGZHOU CHEMICAL INDUSTRY

Open Publishing

Established in 1973(Semimonthly)

Vol. 49 No. 11

Jun. 2021

Managed by:

Guangzhou Chemical Industrial Group Co., Ltd.

Sponsored by:

Guangzhou Research & Design Institute of Chemical Industry

Guangzhou Society of Chemistry and Chemical Engineering

Assisted by:

Guangzhou Chemical Industry Association

Edited by:

Editorial Office of "GUANGZHOU CHEMICAL INDUSTRY"

Chief Editor: WU Wen-li

Vice Chief Editor: LIN Jun-ying

Editor: HE Qi-hong

Advertisement Department: MAO Ren-xu

Address: Building D, Vanlead Innovation Park, No. 229

Helian Street, Baiyun District, Guangzhou,

P. R. China

Postcode: 510425

Tel: (020) 36372165

E-mail: gzhgbjb@vip.126.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

Adverxising Business License No. :4401004002668