

ISSN 1001 - 9677

CN44 - 1228/TQ

广州化工

GUANGZHOU CHEMICAL INDUSTRY



扫码关注

第 8 期
2021年4月
(下半月)
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



广州化工研究设计院有限公司
分析测试中心

经CNAS权威认证

专业从事化工、涂料
等分析检测



多彩化工
•
专业视角

ISSN 1001-9677



9 771001 967210

08

主办：
广州化工研究设计院
广州市化工行业协会

地址：广州市白云区鹤联街229号万力创新园D座二楼
联系人及电话：周先生 020-35549551 13710809830

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 8 期

2021 年 4 月(下半月)

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:刘倩婷、何启宏

广 告:茅仁旭

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:gzhgbjb@vip.126.com

印 刷:广州市德佳彩色印刷有限公司

发行范围:国内外公开发刊

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

- 四氢环戊二烯三聚体的合成及应用进展 陈春玉,王少楠,胡 迎(1)
- 手性催化剂研究进展及其在不对称合成中的应用 武文超(3)
- 高分子 3D 打印材料及打印技术 雷 磊, Yoann de Rancourt de Mimérand, 郭 嘉(7)
- 碳点在生物成像中的应用进展 时惠敏(10)
- 水解酸化工艺应用于难降解有机废水综述 魏良玉,李 亮,祁 佳,桓永照,刘煦晴(14)
- 水体中氨氮去除技术研究进展 贺琳杰,屈撑囤(17)
- 废水中的铬处理及铬吸附热力学研究现状 库尔班江·努尔麦提(20)
- 消毒对水中抗生素耐药基因去除及因素的进展 李晋宇,陈泽业,吴 敏,许士兰,梁海宁,罗 敏,龙文芳(22)
- 茶粕(茶麸或茶籽)资源化现状及发展 罗佳佳,江子涵,黄智爱,陈 婷,廖一欣(26)

科学实验

- 阿拉伯胶-明胶-壳聚糖电泳显示微胶囊的制备及性能分析 ... 代 璐,李佩东,涂 强,崔月华,袁家虎(28)
- Ce-ZnO@TiO₂ 纳米薄膜的制备及其光催化性能研究 竹秋妮,张 帅,武 军(34)
- CNTs/p-g-C₃N₄ 复合材料的制备及光催化性能的研究 高 媛,顾建冬,张 贤,张靖杰,王飞飞,马帅帅(38)
- 柳絮衍生中空碳管的制备及其储钾性能研究 赵鲁康,黄方志(40)
- 钌配合物的合成及在光催化杂环芳香化反应 夏铭泽,张 艳(43)
- 苯乙烯-马来酸酐共聚物用于苯丙乳液聚合 吴 英,刘廷国,王守玲(47)
- 浅析钛白粉分散程度对涂层性能的影响 周海洋,王 玲,马鹏飞(49)
- 聚氨酯改性水性醇酸树脂涂料的性能及应用 段加欢,张 琪,黄 琨,陈总达,葛 辛(52)
- 微波焙烧应用于某铀矿浸出的实验研究 刘 勇(55)

三种不同源混合菌群降解 4-氟苯胺特性	雷宇芬,陈 诺,吴燕君,沈骆秦,田君瑞,徐嘉琦,厉俊明,王玉芳,赵芝清(57)
L-a17 在体外血浆和人工胃肠液中的稳定性研究	李爱红,张 宇,廖伟科(60)
海金沙总黄酮提取工艺优化及对烫伤效果研究	方丽波,王文字,刘修树,龚菊梅,付恩桃,刘 琴,高迎迎,吴 丹,尹 伟(64)
微波辅助提取魔芋总多糖的方法研究	覃 钱,张 艳,杨 燕,陈 继,罗 绍,谢 杭,朱 丹(68)
人参有效物的提取及对头发强韧度效果的研究	张榕文,蒋日琼,吴雨娟,吴志强,许昌发,韩 欢(70)
正交设计优化超声波辅助提取广西犁头草中总黄酮的工艺	臧青民,马春兰,王 端,韦姣航,梁和珍,刘柏梅,章烨雯(74)
铁皮石斛炮制前后的护肤功效研究	段晓燕,蔡 慈,梅任强(78)
青莲舒敏美白养肤药妆水的研制	那文素,陈皓东,刘 广,吴品昌(80)
制备一种对树脂具有高效清洗能力的溶液体系	叶光园,丁志强,丁攻圣,彭子飞(82)
冲泡条件对都匀毛尖茶抗氧化活性影响的研究	喻 俊,李亚波(85)
永州丹参中丹参酮 II A 含量测定及提取工艺优化	马欣然,苏伟康,靳 琦,何勇辉,陈小明(89)

分析测试

高效液相色谱法同时测定雪上一枝蒿中 6 种乌头属生物碱含量	曹红云,何雨桐,牛延菲,徐 怡,陈 丽,游 燕(93)
基于 UPLC-Q-Exactive Orbitrap-MS 的栀子甘草豉汤化学成分分析	陈梦倩,王允吉,冯 芳(97)
亚铁氰化铜共振散射法间接测定卡托普利	袁鹏翔,易桂艳,谢诗宇,贺利玲,何 芳,孙双姣(104)
基于 UPLC-Q-TOF 技术的莫波替尼(TAK788)痕量分析方法研究	薛灵杰,惠人杰(107)
镀锌钝化液中锌杂质的络合滴定	单潮海,周阳亮(110)
实验用水中硅含量对砷、汞等元素测定的影响	冯 雪(112)
Ellman 试剂显色法测定药物中乙酰半胱氨酸含量研究	唐文力,李宜航(115)
硝酸浓度对水中重金属含量测定的影响分析	叶洋宏,黄 强,张雪梅,张义烽(118)
高效液相色谱串联质谱测定生活饮用水和地表水中 2,4-滴、灭草松和莠去津	关小桃,吴艳龙(121)
提高芳烃产品溴指数分析的准确性	李 田(124)

环境保护

混凝土拌合站污水快速处理技术研究	柴宝红,秦玉德,王 岩,丁昊晖,张俊杰(127)
------------------------	--------------------------

化工机械

西门子 PCS7 系统在乙烯装置中的应用	林晓华,王晓涛(132)
----------------------------	--------------

生产技术

异丁烯资源化利用制备甲基丙烯酸甲酯的可行性研究	温博演,罗莉萍,唐瑞敏,魏雨秋,冯天佑,尚书勇,梅 丽(134)
-------------------------------	----------------------------------

教学园地

涉及非体积功的热力学基本方程	杨 嫣,陈山川,谢 娟,张 改(139)
----------------------	----------------------

双参数拟合法测定蔗糖水解速率常数	余训爽,黄剑平(142)
氧化铝催化合成阿司匹林的工艺探讨	邓威洋,曲伟红,陈 剑,王亚丽,李远新,赵建国(144)
基于林化专业大学生创新训练的松香提取物脱氢枞酸教学改革探索	蔡旭敏,黄申林(147)
环保节能型发蓝工艺综合性实验教学的设计与实践	刘 刚,彭叔森,王春霞,师 超,刘光明(149)
钩藤不同部位生物碱类成分的含量测定及其质量评价	刘小芬,蔡洪鲲,王 琼,胡嘉璇,聂海澜,蒋范任(153)
BOPPPS 教学法在工业药剂学实验课程中的应用	陆姗姗,赵玉荣(156)
《材料分析方法》线上教学初探	孔祥霞,翟军军,李忠磊,张 程(159)
天然药物化学课程在线教学的实践与探索	厉博文,赵京山,张一昕,刘真一,冯 薇,刘慧娴,左赛杰,马东来,李 菁(163)
物理化学线上教学实践探索	林秀婧,刘瑞卿,马延文(166)
化学热力学多模式教学方法的探索与实践	王君霞,杨丽霞,洪建和(168)
研究导向型教学在复合材料学课程中的应用	杨小慧,曹 岩,高 华,张 晶,龙 梅(171)
生活案例和工程案例在化工原理教学中的应用	王立红,杨武德,郝永佳,李田田(173)
提升水泥工艺专业生产实习效果的探讨与实践	刘辉敏,张冬阳,阳勇福,罗 伟,郭炎飞(175)
工程认证背景下材控专业实践教学研究	胡 励,周 涛,时来鑫,李明鹜,周志明(178)
生物专业有机化学课程混合式教学的探索	赵彦武(180)
基于本科生实验能力培养的《材料物理性能》课程教学研究	朱玲玲,张宗涛,周轶凡,刘洛强,张 星,张 良(182)
应用化学专业实验采用虚拟仿真技术的探讨	聂俊琦(184)
浅析高等无机化学实验教学的创新与思考	奚 雪,蔡克迪,郎笑石(186)
基于 OBE 理念构建化学分析实验的有效教学探究	于博荣,杨莉丽,张慧姣,黎 梅,韩占刚,马媛媛(189)
《无机与分析化学》课程思政实践探索	许妙琼,解庆范,黄妙龄,张英武(191)
民族院校“课程思政”在《高分子化学》中的初探	秦四勇,江华芳,程峯家(193)
应化专业实践教学课程思政建设的探索与实践	陈会英,张树彪,那立艳,刘宝全,权春善,李婷婷(196)
高职院校专业课程思政教改探究	赵仕英(198)
“三全育人”背景下医学院校无机化学课程思政教学探索与实践	冯志君,尉 艳,李祥子,吴运军,陈结霞,汪 明(200)
基于新工科建设的《环境学导论》双语教学模式实践	王艺璇,滕洪辉,赵尔康(204)
地方应用型高校交叉融合人才培养的探索	史洪伟,桂和荣,张 莉,卓 馨,徐基贵,王红艳(206)
无机化学实验改革对大学生创新能力培养的探究	李柯燃(209)
生物化学重要章节“蛋白质结构与功能的关系”教学反思	廖 阳,闫荣玲(211)
高校化学实验室安全准入制度的探索与考试系统的构建	方宇昕,高 越,林美玉,沈颂章,段雅倩,张 弛,苏 娟(214)
中医院校实验教学中心危化品管理现状与改进措施	杨李阳,吴 娜,弓 强(217)

安全与管理

矿井通风与安全生产的关系及优化分析	刘福新(220)
浅谈危化品港口装卸作业安全	葛继超,贾 辉(222)

CONTENTS

Research Progress on Synthesis and Application of Tetrahydratricyclopentadiene Trimer	CHEN Chun-yu, WANG Shao-nan, HU Ying(1)
Research Progress on Chiral Catalysts and Their Application in Asymmetric Synthesis	WU Wen-chao(3)
3D Printing of Polymer Materials and Printing Technology	LEI Lei, Yoann de Rancourt de Mimérand, GUO Jia(7)
Review on Application of Carbon Dots in Bioimaging	SHI Hui-min(10)
Review on Application of Hydrolysis Acidification Process in Refractory Organic Wastewater	WEI Liang-yu, LI Liang, QI Quan, HUAN Yong-zhao, LIU Xu-qing(14)
Research Progress on Removal Technology of Ammonia Nitrogen in Water	HE Lin-jie, QU Cheng-tun(17)
Research on Chromium Treatment from Wastewater and Thermodynamics of Chromium Adsorption	Kuerbanjiang Nuermaiti(20)
Research Progress on Removal of Antibiotic Resistance Genes and Factors in Disinfection in Water	LI Jin-yu, CHEN Ze-ye, WU Min, XU Shi-lan, LIANG Hai-ning, LUO Min, LONG Wen-fang(22)
Resource and Development of Tea Meal (Tea Bran or Tea Seed)	LUO Jia-jia, JIANG Zi-han, HUANG Zhi-ai, CHEN Ting, LIAO Yi-xin(26)
Synthesis and Performance Analysis of Gun Arabic/Gelatin/Chitosan Electrophoresis Display Microcapsules	DAI Lu, LI Pei-dong, TU Qiang, CUI Yue-hua, YUAN Jia-hu(28)
Preparation and Photocatalytic Performance of Ce-ZnO@TiO ₂ Nano-Film	ZHU Qiu-ni, ZHANG Shuai, WU Jun(34)
Preparation and Photocatalytic Activity of CNTs/p-g-C ₃ N ₄ Composites	GAO Yuan, GU Jian-dong, ZHANG Xian, ZHANG Jing-jie, WANG Fei-fei, MA Shuai-shuai(38)
Preparation of Catkins-derived Hollow Carbon Tube and Their Potassium Storage Performance	ZHAO Lu-kang, HUANG Fang-zhi(40)
Synthesis of Ru-complex and Applications on Arylation of Heterocyclic under Visible Light	XIA Ming-ze, ZHANG Yan(43)
Styrene-maleic Anhydride Copolymer in Styrene-Acrylate Emulsion Polymerization	WU Ying, LIU Ting-guo, WANG Shou-ling(47)
Analysis of Influence of Titanium Dioxide Dispersion on Coating Performance	ZHOU Hai-yang, WANG Ling, MA Peng-fei(49)
Performance and Application of Polyurethane Modified Waterborne Alkyd Resin Coatings	DUAN Jia-huan, ZHANG Qi, HUANG Kun, CHEN Zong-da, GE Xin(52)
Experimental Study on Microwave Roasting in Leaching of Uranium Ore	LIU Yong(55)
Degradation Characteristics of 4-fluoroaniline with Three Different Mixed Bacteria	LEI Yu-fen, CHEN Nuo, WU Yan-jun, SHEN Luo-qin, TIAN Jun-rui, XU Jia-qi, LI Jun-ming, WANG Yu-fang, ZHAO Zhi-qing(57)
Study on Stability of L-a17 in Plasma in Vitro and Simulated Gastric/Intestinal Fluid	LI Ai-hong, ZHANG Yu, LIAO Wei-ke(60)
Optimization of Extraction Process of Total Flavonoids from <i>Lygodium Japonicum</i> and Study on Its Effect on Scald	FANG Li-bo, WANG Wen-yu, LIU Xiu-shu, GONG Ju-mei, FU En-tao, LIU Qin, GAO Ying-ying, WU Dan, YIN Wei(64)
Study on Microwave-assisted Extraction of Total Polysaccharide in Konjac	QIN Qian, ZHANG Yan, YANG Yan, CHEN Ji, LUO Zhao, XIE Hang, ZHU Dan(68)
Determination of Content of Baicalin in TCM Herbal Shampoo by High Performance Liquid Chromatographic Method	ZHANG Rong-wen, JIANG Ri-qiong, WU Yu-juan, WU Zhi-qiang, XU Chang-fa, HAN Huan(70)
Optimization of Ultrasonic Assisted Extraction of Favonoids from <i>Viola Japonica Langsd</i> of Guangxi by Orthogonal Test Design	ZANG Qing-min, MA Chun-lan, WANG Duan, WEI Xiao-hang, LIANG He-zhen, LIU Bai-mei, ZHANG Ye-wen(74)
Changes of Skin Protection Effect of <i>Dendrobiumofficinale</i> before and after Processing	DUAN Xiao-yan, CAI Ci, MEI Ren-qiang(78)
Development of Qinglian Shumin Whitening and Skin Tonic Lotion	NA Wen-su, CHEN Hao-dong, LIU Guang, WU Pin-chang(80)
Preparation of Solution System Effected Cleaning Capacity for Resins	YE Guang-yuan, DING Zhi-qiang, DING Gong-sheng, PENG Zi-fei(82)
Influence of Brewing Conditions on Antioxidant Activity of Duyun Maojian Tea	YU Jun, LI Ya-bo(85)

Determination and Optimization of Tanshinone II A Content of <i>Salvia Miltiorrhiza</i> in Yongzhou	MA Xin-ran, SU Wei-kang, JIN Qi, HE Yong-hui, CHEN Xiao-ming(89)
Simultaneous Determination of Six Aconitum Alkaloids in <i>Aconitum brachypodum</i> by HPLC	CAO Hong-yun, HE Yu-tong, NIU Yan-fei, XU Yi, CHEN Li, YOU Yan(93)
Analysis of Chemical Components of Zhi-Zi-Gan-Cao-Chi Decoction Based on UPLC-Q-Exactive Orbitrap-MS	CHEN Meng-qian, WANG Yun-ji, FENG Fang(97)
Determination of Captopril by Resonance Light Scattering Technique Based on $\text{Cu}_2[\text{Fe}(\text{CN})_6]$	YUAN Peng-xiang, YI Gui-yan, XIE Shi-yu, HE Li-ling, HE Fang, SUN Shuang-jiao (104)
Study on Trace Analysis Method of Mobocertinib (TAK788) Based on UPLC-Q-TOF Technology	XUE Ling-jie, HUI Ren-jie (107)
Complexometric Titration of Zinc Impurities in Zinc Plating Passivation Bath	SHAN Chao-hai, ZHOU Yang-liang (110)
Influence of Silicon Content in Experimental Water on Determination of Arsenic, Mercury and Other Elements	FENG Xue (112)
Study on Determination of Acetylcysteine in Medicines by Ellman Reagent Color Method	TANG Wen-li, LI Yi-hang (115)
Influence of Nitric-acid Concentrations on Determination of Heavy Metals in Water	YE Yang-hong, HUANG Qiang, ZHANG Xue-mei, ZHANG Yi-feng (118)
High Performance Liquid Chromatography Tandem Mass Spectrometry for Determination of 2,4-d, bentazone and Atrazine in Drinking Water and Surface Water	GUAN Xiao-tao, WU Yan-long (121)
Improve the Accuracy of Bromine Index Analysis of Aromatic Products	LI Tian (124)
Study on Technology of Rapid Treatment of Sewage in Concrete Mixing Station	CHAI Bao-hong, QIN Yu-de, WANG Yan, DING Hao-hui, ZHANG Jun-jie (127)
Application of Siemens PCS7 System in Ethylene Plant	LIN Xiao-hua, WANG Xiao-tao (132)
Feasibility Study on Preparation of Methyl Methacrylate by Resource Utilization of Isobutylene	WEN Bo-yan, LUO Li-ping, TANG Rui-min, WEI Yu-qiu, FENG Tian-you, SHANG Shu-yong, MEI Li (134)
Fundamental Equations in Thermodynamics Involving Non-expansion Work	YANG Yan, CHEN Shan-chuan, XIE Juan, ZHANG Gai (139)
Determination of Rate Constant of Sucrose Hydrolysis Reaction by Two-parameter Data Fitting Method	YU Xun-shuang, HUANG Jian-ping (142)
Exploration on Synthesis of Aspirin Catalyzed by Alumina	DENG Wei-yang, QU Wei-hong, CHEN Jian, WANG Ya-li, LI Yuan-xin, ZHAO Jian-guo (144)
Teaching Reform of Dehydroabietic Acid in Innovative Research Training for College Students	CAI Xu-min, HUANG Shen-lin (147)
Design and Practice on Comprehensive Experimental Teaching of Environmental Protection and Energy Saving Bluing Technology	LIU Gang, PENG Shu-sen, WANG Chun-xia, SHI Chao, LIU Guang-ming (149)
Determination and Quality Evaluation of Alkaloids in Different Parts of <i>Uncaria</i>	LIU Xiao-fen, CAI Hong-kun, WANG Qiong, HU Jia-xuan, NIE Hai-lan, JIANG Fan-ren (153)
Application of BOPPPS Teaching Model in Experimental Course of Industrial Pharmacy	LU Shan-shan, ZHAO Yu-rong (156)
Preliminary Study on Line Teaching of Material Analysis Method	KONG Xiang-xia, ZHAI Jun-jun, LI Zhong-lei, ZHANG Cheng (159)
Practice and Exploration on Online Teaching of Natural Medicine Chemistry	LI Bo-wen, ZHAO Jing-shan, ZHANG Yi-xin, LIU Zhen-yi, FENG Wei, LIU Hui-xian, ZUO Sai-jie, MA Dong-lai, LI Jing (163)
Exploration on Online Teaching Practice of Physical Chemistry	LIN Xiu-jing, LIU Rui-qing, MA Yan-wen (166)
Exploration and Practice on Multi-mode Teaching Method of Chemical Thermodynamics	WANG Jun-xia, YANG Li-xia, HONG Jian-he (168)
Application of Research-led Teaching Mode in Curriculum of Composite Materials	YANG Xiao-hui, CAO Yan, GAO Hua, ZHANG Jing, LONG Mei (171)
Combining Life Case and Engineering Case for Chemical Engineering Principles Teaching	WANG Li-hong, YANG Wu-de, HAO Yong-jia, LI Tian-tian (173)
Discussion and Practice on Improving the Effect of Production Practice of Cement Technology Specialty	LIU Hui-min, ZHANG Dong-yang, YANG Yong-fu, LUO Wei, GUO Yan-fei (175)
Study on Practical Teaching of Material Forming and Control Engineering under the Background of Engineering Accreditation	HU Li, ZHOU Tao, SHI Lai-xin, LI Ming-ao, ZHOU Zhi-ming (178)

Exploration on Blend – teaching Organic Chemistry for Biology Specialty ZHAO Yan-wu(180)

Teaching Research on Physical Properties of Materials Course Based on Training of Undergraduates’ Experimental Ability ZHU Ling-ling, ZHANG Zong-tao, ZHOU Yi-fan, LIU Luo-qiang, ZHANG Xing, ZHANG Liang(182)

Discussion on Application of Virtual Simulation Technology in Specialty Experiment of Applied Chemistry ... NIE Jun-qi(184)

Analysis on Innovation and Thinking of Advanced Inorganic Chemistry Experiment Teaching XI Xue, CAI Ke-di, LANG Xiao-shi(186)

Study on Effective Teaching of Chemical Analysis Experiment Based on OBE YU Bo-rong, YANG Li-li, ZHANG Hui-jiao, LI Mei, HAN Zhan-gang, MA Yuan-yuan(189)

Exploration on Implementing Ideological and Political Education in Inorganic and Analytical Chemistry XU Miao-qiong, XIE Qing-fan, HUANG Miao-ling, ZHANG Ying-wu(191)

A Preliminary Study on Curriculum Ideological and Political Education in Polymer Chemistry in University for Nationalities ... QIN Si-yong, JIANG Hua-fang, CHENG Yin-jia(193)

Exploration on Ideological and Political Construction in Practical Teaching Course of Applied Chemistry Specialities CHEN Hui-ying, ZHANG Shu-biao, NA Li-yan, LIU Bao-quan, QUAN Chun-shan, LI Ting-ting(196)

Study on Course Thinking and Politics in Professional Courses of Higher Vocational Colleges ZHAO Shi-ying(198)

Exploration and Practice of Curricular Ideological and Political Education in Inorganic Chemistry in Medical Colleges from Perspective of “3A Education” FENG Zhi-jun, YU Yan, LI Xiang-zi, WU Yun-jun, CHEN Jie-xia, WANG Ming(200)

Bilingual Teaching Mode Practice of Introduction to Environmental Science Based on New Engineering Construction WANG Yi-xuan, TENG Hong-hui, ZHAO Er-kang(204)

Research on System of Interdisciplinary Talent Training in Local Application Oriented Colleges SHI Hong-wei, GUI He-rong, ZHANG Li, ZHUO Xin, XU Ji-gui, WANG Hong-yan(206)

Exploration on Inorganic Chemistry Experiment Reform of Cultivation of College Students’ Innovative Ability LI Ke-ran(209)

Teaching reflection on Important Section of “Relationship between Protein Structure and Function” in Biochemistry Course LIAO Yang, YAN Rong-ling (211)

Exploration on Safety Access System and Construction on Examining System of Chemical Laboratories in Universities FANG Yu-xin, GAO Yue, LIN Mei-yu, SHEN Song-zhang, DUAN Ya-qian, ZHANG Chi, SU Juan(214)

Status Quo and Improvement Measures of Hazardous Chemicals Management in Traditional Chinese Medicine Universities YANG Li-yang, WU Na, GONG Qiang(217)

Relationship and Optimization Analysis of Mine Ventilation and Safety Production LIU Fu-xin(220)

Brief Discussion on Operation Safety of Loading and Unloading of Hazardous Chemicals in Ports GE Ji-chao, JIA Hui(222)

GUANGZHOU CHEMICAL INDUSTRY

Open Publishing

Established in 1973 (Semimonthly)

Vol. 49 No. 8

Apr. 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: LIU Qian-ting, 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: gzhgjb@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



无锡科伦达化工热力装备有限公司

- 中国核工业集团合格供应商
- 中石化、中石油、中海油集团合格供应商
- 中国SEI工程、寰球工程合格供应商
- 中国蓝星（集团）公司合格供应商



A1、A2类高压容器设计、制造资质



ASME "U" 钢印设计、制造



中国核工业集团公司合格供应商



▲ 为上海金山石化制作的减压解聚釜 材质: S22053



▲ 为上海抚佳制作的50立方米反应釜 材质: S30408



▲ 为天辰公司制作的多异丙苯塔 材质: Q345R



▲ 为上海石化制作的双管板换热器 材质: Q345R+10#



▲ 为福建联合制作的稀稀蒸汽再沸器 材质: Q345R



▲ 为扬子石化制作的初馏塔 材质: Q345R+S32168



▲ 出口伊朗的80立方米换热器 材质: TA2



▲ 出口土耳其的吸附器 材质: S30408



▲ 为韩国公司现场制作的大型贮罐 材质: S30408

董事长 **董建平**

网址: www.kelunda.com.cn
 邮箱: Djp@kelunda.com.cn

地址: 无锡市滨湖区(胡埭园区)负来桥路5号 邮编: 214161
 电话: 0510-85952927 85959977 13906171123
 传真: 0510-85951927

国内定价: 28.00元