

- 《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

- 美国《化学文摘》(CA)重点收录期刊
- 全国石油和化工行业优秀期刊
- 广东省、广州市优秀科技期刊

ISSN 1001-9677
CN44-1228/TQ

广州化工

第 1 期
2018年1月
(上半月)
第 46 卷

GUANGZHOU CHEMICAL INDUSTRY

广州化工研究设计院

广州市化工行业协会

广州市化学化工学会



广州化工研究设计院

GUANGZHOU RESEARCH & DESIGN INSTITUTE OF CHEMICAL INDUSTRY



地址：广州市白云区石井联和路2号万力创新园D座

电话：020-36371943

邮编：510425

传真：020-35549621

网址：<http://www.gzhy.cn>

电子信箱：gzhuaogongsuo@126.com

万方数据

广州化工(半月刊)

第四十六卷 第一期

二〇一八年一月 上半月刊

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

1973年创刊(半月刊)

第46卷第1期

2018年1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:林碧颖

编辑:刘倩婷、何启宏

广告:茅仁旭

地址:广州市白云区石井镇联和路2号

万力创新园D座

邮 码:510425

电 话:(020)36372165

邮 箱:gzhgbjb@vip.126.com

网 址:http://www.gzhgbjb.cn

印 刷:南方医科大学广州广卫印刷厂

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

收款单位:广州化工研究设计院

开户银行:广州市工商银行石井支行

帐 号:3602025309000823574

国内定价:13.00元/期 全年295.00元(共24期)

第八届编委会成员名单

主 任:崔英德

副主任:叶家灿 白 莉

秘书长:张 统

委 员:(排名不分先后)

钱 宇 童叶翔 余 林 王乐夫 何榕友

杨育农 马小明 郑 成 麦堪成 彭 峰

赵建青 尹国强 刘自力 李大光 杨定乔

黄道平 李攻科 刘国光 陈国华 董新法

方岩雄 熊晓国 李雪辉 陈旭东 李锡安

梁基照 梁 亚 曾庆焕 罗国钦 余慧文

目 次

专论与综述

正渗透水处理关键技术研究进展 丁 柳,邵良程,安乐生(1)

膜工艺在特殊核素分离中的应用 李 斗,许国静,陈子惟,贾紫永(4)

基于聚(N-异丙基丙烯酰胺-丙烯酸)水凝胶合成与应用研究进展 张 倩,陈凯月,焦体峰(6)

丙二腈在有机合成中的应用研究进展 王 翔,秦晓燕,杜东东,谢佳敏,仝 娜,陈 平(9)

g-C₃N₄光催化还原Cr(VI)研究进展 熊 威,葛建华,陈羽冲,徐 静,张 龙(12)

基于化学气相沉积法的纳米二硫化钼研究进展 周伟鹏,杨 飒,龚家志,林 芳(15)

金属掺杂TiO₂纳米材料光催化性能研究进展 宋娟娟,杨云波(19)

浅谈微波脱硫技术 丁云云,周娅兰,努孜叶古丽·热苏力(22)

功能橡胶输送带的研究进展 孙会娟,李静宇(25)

含油污泥处理现状及新的研究进展 王飞飞,屈 璇,张 欢,屈撑园(27)

触变模型研究简析 李子欣(30)

层状硅酸盐矿物的研究进展 殷洪国,罗青松,韩世虎(33)

生物滴滤塔处理甲硫醚气体动力学模型的研究 陈益清,马利霞,蔡旺锋,尹 娟,伍健威(35)

甲醇制烯烃选择性的热力学研究 冯 超(40)

杂原子共掺杂碳量子点的制备及其性能表征 徐孝林,唐湘云,宋东成,程永兵,贺紫萍,王辉宪,苏招红(45)

钴催化的一步法贝克曼重排反应 黄相韵,虞姜姜,张 斌,姚武冰(48)

一锅法合成4'-取代-2,2':6',2''-三联吡啶衍生物 包亚鹏,高 超,刘发玉,李 娜,赵小龙(51)

N-溴烷基靛红衍生物的合成方法研究 陈嘉和,赵楚萍,钟志乾,王燕纯,王茂钦,王晓琴(54)

Meso-四(4-羟基苯基)卟啉合成 孙 悦,张晓娟,李芊芊,王冉冉,周 雪,陈天赐,田俊强(57)

| | |
|---|---|
| 替比培南侧链的合成工艺研究 | 陈明龙, 赵 思, 汪祝胜, 王玲燕, 沈烈凡, 谢菊冲 (60) |
| 氨基磺酸镍合成工艺研究及工业化 | 杨育兵, 孙 松 (62) |
| 新型奥比沙星-稀土金属配合物的合成与稳定性研究 | 刘瑞雪, 杜小倩, 汪明霞, 苏金莲, 黄 遥, 刘延成, 邓胜平 (64) |
| 聚吡咯/凹凸棒复合材料的合成及吸附性能研究 | 张 晨, 丁一峰, 吴仕围, 常永慧, 孙万虹, 王彦斌 (67) |
| DBD 等离子体分解半胱氨酸和 N-乙酰半胱氨酸 | 蒋志敏, 李迎迎, 沈雪松, 白先群 (70) |
| 以 V _D 为附加剂的空白纳米脂质体制备工艺研究 | 蒋倩婷, 马国扬, 王 越, 丰贵鹏 (73) |
| 二氧化钛光催化材料的制备及其性能研究 | 朱 琳, 张福胜, 曾晓丹 (75) |
| E-MA-MAH 三嵌段共聚物对 PLA/PBAT 体系的增韧改性研究 | 熊 凯, 焦 建, 卢昌利, 杨 晖, 麦开锦, 董学腾, 蔡彤旻, 曾祥斌 (78) |
| 二氧化硅空心粒子制备条件研究 | 赵子萱, 凌 艳, 季也酪, 叶 宏, 晏 香, 董纯瑄 (81) |
| 剔除石英砂铈斑斑的工艺技术研究 | 侯清麟, 田 靓, 王迎霞, 侯熠徽 (84) |
| 天然褐铁矿对偶氮染料橙黄 I 降解脱色的研究 | 金思明, 陈木根, 何劲勇, 卓丹丹, 王智美, 陈紫饶, 邹志辉, 张艳林 (87) |
| 二氧化钛光催化处理有机磷农药废水研究 | 张新海 (90) |
| 芬顿氧化深度处理印染废水的实验研究 | 曾 旭, 曾德芳 (92) |
| 石墨烯分散液改性活性炭对甲醛吸附的研究 | 殷卫军, 张晓雨, 马欢欢, 宋 超, 陈登宇 (95) |
| 煤矸石山戟叶酸模、皱叶酸模的重金属富集特征 | 李金辉, 翁贵英, 丁 薇, 王 平, 杨建发 (97) |
| 清膈养阴颗粒澄清工艺研究 | 丁 军, 陈永荣, 刘国彬, 陈金锋, 姜 蕾 (100) |
| 超声波辅助提取无患子果皮中总黄酮的研究 | 朱婉晴, 卞杰松, 周志远, 陈英华, 刘 虎, 李忆珍 (102) |
| 米糠油精炼工艺研究 | 徐 迪, 金日生, 徐冰彦, 张冬冬 (105) |
| 花瓣提取液用作酸碱指示剂的探究 | 李耀仓, 马红霞, 金 曾, 雷木生 (107) |
| EDTA 在重组 Fc 融合蛋白纯化工艺中的作用 | 王婉如, 高雪峰, 杨 军, 梁凌宇, 陈俏丽, 蒋 琳, 毛晓燕 (110) |
| 透皮肤纯化方法研究 | 苏晨灿, 张忠旗, 赵金礼, 杨小琳 (114) |
| 碱性水热环境对巨龙竹细胞壁组分降解产物的影响 | 杨海艳, 吴 凯, 石 纯, 杨 静, 史正军 (116) |
| 三叶木通果茶加工工艺研究 | 邓爱华, 李红勇, 王 云, 谢 鹏, 程丽楠, 彭才旺 (120) |
| 食用器具不锈钢在不同介质中重金属的迁移量研究 | 钟柳珊, 许雅婷, 吴玉欣, 何志伟 (124) |
| 石油裂解成分前脱丙烷工段的模拟与优化 | 叶明艳, 张淑琼, 吕利平 (127) |

分析测试

| | |
|-----------------------------|--|
| 联苯羧酸配体化合物的 NMR 研究 | 郑 军 (131) |
| 广西产青天葵中鼠李秦素检测的研究 | 陈海燕, 甄丹丹, 周燕园, 丘 琴, 梁燕明, 刘喜华, 黄敏琪, 甄汉深 (134) |
| 复方酮康唑发用洗剂中有关物质检测方法的研究 | 吴变美 (136) |
| 碱熔-超声浸提在土壤氟化物测量中的应用 | 汪 欣, 李 策, 张明杰, 闫 晖, 杨志学 (139) |
| 气相色谱法检测水果蔬菜中苯酚类污染物残留 | 林茂发, 黄永辉, 廖军海 (142) |
| 气相色谱法计算汽油的研究法辛烷值 | 黄水望, 赵晓锋, 郭 振, 王世聪 (145) |
| 无汞法测定铁矿石中铁含量实验的改进 | 刘 洁, 刘梦雨 (147) |

环境保护

石英砂酸洗废水处理工艺设计应用 张 帅, 张学斌, 胡吉祥, 张 君, 刘兆刚(150)

化工机械

大型连续乙醇发酵罐进料方式的模拟与优化研究 陈韞智, 闫显辉, 钟 平(152)

生产技术

提高汽车轮毂防腐性能的研究 冯 亮, 崔志龙(156)

苯部分加氢催化剂劣化原因及工艺参数计算 宋红光(159)

聚醚醚酮半成品冷却工艺及装置的开发与应用 侯天武, 颜 华, 杨 敏, 陈聪地(161)

教学园地

《环境质量评价》课程教学方法改革 安 慧, 耿春香, 王志伟(164)

基于蓝墨云班课的表面张力混合式学习的教学 王姣亮, 龙立平, 肖谷清, 谢 丹(166)

改进化工原理课程设计教学的几点措施 李昌进(168)

水污染控制工程实验教学改革与实践探讨 谭雪梅, 龙良俊, 王小平, 王崇均(170)

对接中试车间的化工设计实践平台的建设 黄紫洋, 王雪松, 沈慧英(172)

基于转型的《食品分析与检验》实验模块构建 黄春红, 谢中国, 贺 江, 杨明毅, 邹万生(175)

情境与案例相结合的大气污染控制工程研究 邹美玲, 李甲亮, 苏秀茹(178)

面向污染防治实践的《环境微生物学实验》教学的改革 张 琼(180)

纳米材料与技术专业应用型人才培养体系建设 铁伟伟, 朱聪旭, 高远浩, 李品将(182)

化学实验教学组织管理与质量提升机制研究 孙 杰, 王 邃(184)

浅谈《高分子化学》教学改革 彭 琪, 王 芬(187)

构建创新实验教学平台, 培养学生创新能力 李 沅, 蔡伟杰, 谭凤芝, 曹亚峰, 刘兆丽, 汪源浩(189)

关于药学专业物理化学教学的思考与探索 刘欢欢, 张彩云, 李 全, 刘园旭(192)

高职精细化工技术专业学生放大意识的培养 张永昭, 郭 霞, 吴 健, 丁晓民(194)

分析化学实验双创教育改革初探 薛金凤, 张 翔(197)

《无机及分析化学》教学与中学化学教学的衔接 项昭保, 伍晓玲(200)

全日制材料工程专业学位研究生培养模式探索 许 博, 温变英, 钱立军, 翁云宣(203)

普通高校化工专业有机化学双语教学实践探讨 邓瑞雪, 高嘉屿, 马军营, 李 欣, 赫玉欣(206)

安全与管理

炼油污水处理装置危险危害与安全防控分析 张 弘, 王家见, 赵振峰(211)

化工信息

市场趋向 (214)

产品开发 (214)

配方精选 (215)

CONTENTS

| | | | |
|--|-------|--|------|
| Research Progress on Forward Osmosis in Water Treatment | ····· | DING Liu, SHAO Liang-cheng, AN Le-sheng | (1) |
| Membrane Technology in Separation of Specific Nuclide | ····· | LI Dou, XU Guo-jing, CHEN Zi-wei, JIA Zi-yong | (4) |
| Research Progress on Synthesis and Application of Poly(N-isopropylacrylamide-acrylic acid) Hydrogels | ····· | ZHANG Qian, CHEN Kai-yue, JIAO Ti-feng | (6) |
| Application of Malononitrile in Organic Synthesis | ····· | WANG Xiang, QIN Xiao-yan, DU Dong-dong, XIE Jia-min, TONG Na, CHEN Ping | (9) |
| Research Progress on Photocatalytic Reduction of Cr(VI) by Using g-C ₃ N ₄ | ····· | XIONG Wei, GE Jian-hua, CHEN Yu-chong, XU Jing, ZHANG Long | (12) |
| Research Progress on Nano Molybdenum Disulfide Based on Chemical Vapor Deposition | ····· | ZHOU Wei-peng, YANG Sa, GONG Jia-zhi, LIN Fang | (15) |
| Research Progress on Photocatalytic Performance of Metal Doped Nano-TiO ₂ Materials | ····· | SONG Juan-juan, YANG Yun-bo | (19) |
| Briefly Discussion on Microwave Desulfurization Technology | ····· | DING Yun-yun, ZHOU Ya-lan, NU Ziyeguli · Re Suli | (22) |
| Research Progress on Multifunctional Rubber Conveyor Belt | ····· | SUN Hui-juan, LI Jing-yu | (25) |
| Present Situation and New Research Progress on Oily Sludge Treatment | ····· | WANG Fei-fei, QU Xuan, ZHANG Huan, QU Cheng-tun | (27) |
| Review of Thixotropic Model | ····· | LI Zi-xin | (30) |
| Research Progress on Layered Silicate Minerals | ····· | YIN Hong-guo, LUO Qing-song, HAN Shi-hu | (33) |
| Study on Dynamics Model of Removing Dimethyl Sulfide by Biotrickling Filter | ····· | CHEN Yi-qing, MA Li-xia, CAI Wang-feng, YIN Juan, WU Jian-wei | (35) |
| Study on Thermodynamics of Selectivity of Methanol to Olefins | ····· | FENG Chao | (40) |
| Synthesis of Heteroatoms-co-doped Carbon Quantum Dots and Its Characterization | ····· | XU Xiao-lin, TANG Xiang-yun, SONG Dong-cheng, CHENG Yong-bing, HE Zi-ping, WANG Hui-xian, SU Zhao-hong | (45) |
| Cobalt-catalyzed One-pot Beckmann Rearrangement | ····· | HUANG Xiang-yun, YU Jiang-jiang, ZHANG Bin, YAO Wu-bing | (48) |
| One-pot Syntheses of 4'-substituted Terpyridine Derivatives | ····· | BAO Ya-peng, GAO Chao, LIU Fa-yu, LI Na, ZHAO Xiao-long | (51) |
| Study on Synthesis of N-bromoalkyl Isatin Derivatives | ····· | CHEN Jia-he, ZHAO Chu-ping, ZHONG Zhi-qian, WANG Yan-chun, WANG Mao-qin, WANG Xiao-qin | (54) |
| Synthesis of Meso-tetra(4-hydroxyphenyl) porphyrin | ····· | SUN Yue, ZHANG Xiao-juan, LI Qian-qian, WANG Ran-ran, ZHOU Xue, CHEN Tian-ci, TIAN Jun-qiang | (57) |
| Study on Synthetic Technology of Tebipenem Side Chain | ····· | CHEN Ming-long, ZHAO Si, WANG Zhu-sheng, WANG Ling-yan, SHEN Lie-fan, XIE Ju-chong | (60) |
| Study on Synthesis Process and Industrialization of Amino Sulfonic Acid Nickel | ····· | YANG Yu-bing, SUN Song | (62) |
| Synthesis and Stability Studies on New Lanthanide Metal Complexes of Orbifloxacin | ····· | LIU Rui-xue, DU Xiao-qian, WANG Ming-xia, SU Jin-lian, HUANG Yao, LIU Yan-cheng, DENG Sheng-ping | (64) |
| Study on Preparation and Adsorption Performance of Polypyrrole/Attapulgit Composites | ····· | ZHANG Chen, DING Yi-feng, WU Shi-wei, CHANG Yong-hui, SUN Wan-hong, WANG Yan-bin | (67) |
| Decomposition of Cysteine and N-acetyl-L-cysteine by DBD Plasma | ····· | JIANG Zhi-min, LI Ying-ying, SHEN Xue-song, BAI Xian-qun | (70) |
| Study on Preparation Method of Blank Nano-liposomes Taking Vitamin D as Additive | ····· | JIANG Qian-ting, MA Guo-yang, WANG Yue, FENG Gui-peng | (73) |
| Study on Synthesis and Properties of TiO ₂ Quantum Dots | ····· | ZHU Lin, ZHANG Fu-sheng, ZENG Xiao-dan | (75) |
| Study on Toughing Effect of E-MA-MAH on PLA/PBAT Blends | ····· | XIONG Kai, JIAO Jian, LU Chang-li, YANG Hui, MAI Kai-jin, DONG Xue-teng, CAI Tong-min, ZENG Xiang-bin | (78) |
| Study on Preparation Conditions of Hollow Silica Nano-particles | ····· | ZHAO Zi-xuan, LING Yan, JI Ye-ming, YE Hong, YAN Xiang, DONG Chun-xuan | (81) |
| Study on Technology of Removing Stain of Quartz Sand | ····· | HOU Qing-lin, TIAN Liang, WANG Ying-xia, HOU Yi-hui | (84) |

| | |
|--|--|
| Study on Degradation and Decolorization Role of Natural Limonite on Ozy Dye Orange I | JIN Si-ming, CHEN Mu-gen, HE Jin-yong, ZHUO Dan-dan, WANG Zhi-mei, CHEN Zi-rao, ZOU Zhi-hui, ZHANG Yan-lin(87) |
| Study on Photocatalytic Treatment of Organophosphorus Pesticide Wastewater by Titanium Dioxide | ZHANG Xin-hai(90) |
| Study on Advanced Treatment of Dyeing Wastewater by Fenton Oxidation | ZENG Xu, ZENG De-fang(92) |
| Study on Adsorption of Formaldehyde by Modified Graphene Dispersive Activated Carbon | YIN Wei-jun, ZHANG Xiao-yu, MA Huan-huan, SONG Chao, CHEN Deng-yu(95) |
| Heavy Metal Enrichment Characteristic of <i>Rumex Hastatus</i> and <i>Rumex Crispus</i> in Coal Gangue Site | LI Jin-hui, WENG Gui-ying, DING Wei, WANG Ping, YANG Jian-fa(97) |
| Study on Clarification Procedure of Chitosan of Qing Ge Yang Yin Granules | DING Jun, CHEN Yong-rong, LIU Guo-bin, CHEN Jing-feng, JIANG Lei(100) |
| Study on Ultrasonic-assisted Extraction of Total Flavonoids from Pericarps of <i>Sapindus mukorossi</i> | ZHU Wan-qing, BIAN Jie-song, ZHOU Zhi-yuan, CHEN Ying-hua, LIU Hu, LI Yi-zhen(102) |
| Study on Refining Process of Rice Bran Oil | XU Di, JIN Ri-sheng, XU Bing-yan, ZHANG Dong-dong(105) |
| Study on Petal Extract Used as Acid-base Indicator | LI Yao-cang, MA Hong-xia, JIN Zeng, LEI Mu-sheng(107) |
| Function of Adding EDTA on Purification of Fc Fusion Protein | WANG Wan-ru, GAO Xue-feng, YANG Jun, LIANG Ling-yu, CHEN Qiao-li, JIANG Lin, MAO Xiao-yan(110) |
| Study on Purification Method of Transdermal Peptide | SU Chen-can, ZHANG Zhong-qi, ZHAO Jin-li, YANG Xiao-lin(114) |
| Effect of Alkali-catalyzed Hot Water Pretreatment on Degradation Products from <i>Dendrocalamus sinicus</i> | YANG Hai-yan, WU Kai, SHI Chun, YANG Jing, SHI Zheng-jun(116) |
| Study on Fabrication of Akebia Trifoliata Fruit Tea | DENG Ai-hua, LI Hong-yong, WANG Yun, XIE Peng, CHENG Li-nan, PENG Cai-wang(120) |
| Migration Quantity of Heavey Metal for Stainless Steal for Food Containers in Different Medium | ZHONG Liu-shan, XU Ya-ting, WU Yu-xin, HE Zhi-wei(124) |
| Simulation and Optimization of Pre-take off Section of Petroleum Cracking Components | YE Ming-yan, ZHANG Shu-qiong, LV Li-ping(127) |
| An NMR Study on A Novel Biphenylcarboxylic Acid | ZHENG Jun(131) |
| Study on Detection of Rhamnazin in <i>Nervilia oadii</i> (Hance) Schltr. Produced in Guangxi | CHEN Hai-yan, ZHEN Dan-dan, ZHOU Yan-yuan, QIU Qin, LIANG Yan-ming, LIU Xi-hua, HUANG Min-qi, ZHEN Han-shen(134) |
| Determination of Related Substances of Ketoconazole in Compound Ketoconazole Lotion for Scalp Disorders | WU Bian-mei(136) |
| Application of Alkali Fusion-ultrasonic Extraction in Determination of Total Floride in Soil | WANG Xin, LI Ce, ZHANG Ming-jie, YAN Hui, YANG Zhi-xue(139) |
| Determination of Phenolic Pollutants Residues in Fruits and Vegetables by Gas Chromatography | LIN Mao-fa, HUANG Yong-hui, LIAO Jun-hai(142) |
| Determination of Research Octane Number of Gasoline by Gas Chromatography | HUANG Shui-wang, ZHAO Xiao-feng, GUO Zhen, WANG Shi-cong(145) |
| Improvement of Determination of Total Iron Content in Iron Ore by None-mercury Method | LIU Jie, LIU Meng-yu(147) |
| Design and Application of Quartz Sand Pickling Wastewater Treatment Process | ZHANG Shuai, ZHANG Xue-bin, HU Ji-xiang, ZHANG Jun, LIU Zhao-gang(150) |
| Simulation and Optimization of Feed Methods for Large-scale Continuous Ethanol Fermenter | CHEN Yun-zhi, YAN Xian-hui, ZHONG Ping(152) |
| Study on Improving Anti-corrosion Performance of Auto Wheel | FENG Liang, CUI Zhi-long(156) |
| Decay Reason Analysis and Calculations of Application ConditionS of Catalyst for Benzene Partial Hydrogenation | SONG Hong-guang(159) |
| Development and Application of Cooling Process and Device for Semi Finished PEEK | HOU Tian-wu, YAN Hua, YANG Min, CHEN Cong-di(161) |
| Reform of Teaching Methods for Environmental Quality Assessment | AN Hui, GENG Chun-xiang, WANG Zhi-wei(164) |

Teaching Mode of Blended Learning Based on Surface Tension of Moso Teach
WANG Jiao-liang, LONG Li-ping, XIAO Gu-qing, XIE Dan(166)
 Some Measures for Teaching Reform on Course Design of Chemical Engineering Principles *LI Chang-jin*(168)
 Discussion on Reform and Practice of Experimental Teaching of Water Pollution Control Engineering *TAN Xue-mei, LONG Liang-jun, WANG Xiao-ping, WANG Chong-jun*(170)
 Construction on Practice Platform of Chemical Engineering Design for Abutment of Pilot-plant Test
 *HUANG Zi-yang, WANG Xue-song, SHEN Hui-ying*(172)
 Experimental Module Construction of Food Analysis and Inspection Based on Transformation *HUANG Chun-hong, XIE Zhong-guo, HE Jiang, YANG Ming-yi, ZOU Wan-sheng*(175)
 Study on Air Pollution Control Engineering in Local Colleges Based on Combination of Situational and Case teaching
 *ZOU Mei-ling, LI Jia-liang, SU Xiu-ru*(178)
 Revolution on Experimental Teaching of Environmental Microbiology Aimed to Cultivate the Applied Talents with Pollution Prevention and Control Experience *ZHANG Qiong*(180)
 Construction of Cultivation System of Applied Talents of Nanomaterials and Technology
TIE Wei-wei, ZHU Cong-xu, GAO Yuan-hao, LI Pin-jiang(182)
 Study on Organizational Management and Quality Improvement of Chemical Experiment Teaching *SUN Jie, WANG Sui*(184)
 Discussion on Teaching Reform of Polymer Chemistry
 *PENG Qi, WANG Fen*(187)
 Constructing Innovative Experimental Teaching Platform to Cultivate Students' Innovation Ability *LI Yuan, CAI Wei-jie, TAN Feng-zhi, CAO Ya-feng, LIU Zhao-li, WANG Yuan-hao*(189)
 Thinking and Exploration on Physical Chemistry Teaching for Pharmacy Specialty
LIU Huan-huan, ZHANG Cai-yun, LI Quan, LIU Yuan-xu(192)
 Cultivation of Students' Ability of Pilot Test of Fine Chemical Industry in Vocational Colleges
ZHANG Yong-zhao, GUO Xia, WU Jian, DING Xiao-min(194)
 Study on Teaching Reform of Analytical Chemistry Experiment Based on Innovation and Entrepreneurship
 *XUE Jin-feng, ZHANG Xiang*(197)
 Link of Teaching Inorganic and Analytical Chemistry and Middle School Chemistry *XIANG Zhao-bao, WU Xiao-ling*(200)
 Study on Cultivating Mode of Full-time Graduate Professional Degree of Material Engineering
XU Bo, WEN Bian-ying, QIAN Li-jun, WENG Yun-xuan(203)
 Practice and Exploration of Bilingual Teaching in Organic Chemistry in Chemical Engineering Specialty of Local University
DENG Rui-xue, GAO Jia-yu, MA Jun-ying, LI Xin, HE Yu-xin(206)
 Analysis of Hazard and Safety Prevention and Control of Refinery Wastewater Treatment Plant
 *ZHANG Hong, WANG Jia-jian, ZHAO Zheng-feng*(211)

GUANGZHOU CHEMICAL INDUSTRY

Open Publishing

Established in 1973(Semimonthly)

Vol. 45 No. 1

Jan. 2018

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. 2

Lianhe Road, Shijing Town, Baiyun District,

Guangzhou, P. R. China

Postcode: 510425

Tel: (020) 36372165

E-mail: gzhgbjb@vip.126.com

Website: http://www.gzhgbjb.cn

Printed by:

Guangzhou Guangwei Printing Plant of Southern Medical University

Overseas Distributed by:

China National Publishing Industry Trading Corporation

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

Adverxising Business License No. :4401004002668