

# 大學化學

UNIVERSITY CHEMISTRY

第32卷 第7期 Vol.32 No.7

2017



中华人民共和国教育部主管  
北京大学、中国化学会主办  
北京大学化学与分子工程学院大学化学编辑部出版

## 目 次

### 今日化学

- 分子基铁电体研究进展 ..... 张闻 (1)

#### 教学研究与改革

- 结构化学小班课教学情况介绍 ..... 朱月香 来鲁华 (8)

- 浙江大学基础化学实验研究生助教的实践和探索 ..... 谭桂娥 吴百乐 刘占祥 胡吉明 方文军 赵华绒 王国平 (12)

- 基于线上线下结合的无机定性分析实验教学 ..... 李婉 黄微 刘济红 高明丽 朱平平 (18)

- 基于合成方法学研究的有机化学实验教学改革与实践——以苯甲酸乙酯制备为例

..... 陈森 陈永嘉 丁尔东 戴畅航 房璠 高凯昊 霍佳彤 江晓宇 江子渊 李阳 李智豪 李魄星月

刘子琛 汤天化 王昶 张澍堃 郑辛平 宗家睿 刘硕 李玉新 韩杰 (23)

- 仪器分析实验教学方法探索——探询-科研型教学模式 ..... 李莲花 吴莉 李英秀 陈凤娟 梁永民 (28)

- 物理化学设计实验教学的实践与体会 ..... 淳远 高卫 杨金月 (33)

- 化学实验课程的信息化教学设计——以实验项目“水中化学需氧量 COD 的测定”为例 ..... 许丽梅 陈建中 林若川 (37)

- 化学实验与科研方法课程教学模式探讨 ..... 庄媛 刘杰民 姚喆 (44)

- 生物工程专业化工原理理论教学的改革与探索 ..... 张伟 李芊 王平 王勇 方志刚 (48)

#### 知识介绍

- 浅析大学化学教学中常见碳正离子的稳定性 ..... 王朝霞 赵梅欣 许胜 罗千福 (54)

#### 化学实验

- 适用于本科教学的 BET 比表面测定实验 ..... 陈小娟 张伟庆 余小嵒 李瑞英 陈六平 (60)

- 化学生物学实验的教学实践及其安全管理 ..... 刘扬 (68)

#### 师生笔谈

- 在化学教学中渗透思想品德和科学素养教育 ..... 范森 朱元海 (72)

- 碳原子价轨道电负性对化学键性能的影响 ..... 曹朝暾 (77)

#### 自学之友

- 泰勒展开式在物理化学中的应用 ..... 杨嫣 张改 陈山川 (83)

- 一种具有恒定缓冲容量的宽程 pH 缓冲体系 ..... 张延妮 尚晓 王慧 岳宣峰 (88)

## CONTENTS

### Chemistry Today

- Research Progress on Molecule-Based Ferroelectric Crystals ..... ZHANG Wen (1)

### Study and Reform of Chemical Education

- Introduction to Small-Class Teaching in Structural Chemistry ..... ZHU Yue-Xiang, LAI Lu-Hua (8)

The Practice and Exploration of the Graduate Teaching Assistant System in Basic Chemistry Laboratory Teaching at

- Zhejiang University ..... TAN Gui-E, WU Bai-Le, LIU Zhan-Xiang, HU Ji-Ming, FANG Wen-Jun,  
ZHAO Hua-Rong, WANG Guo-Ping (12)

The Online-Offline Combination in the Laboratory Teaching of Inorganic Qualitative Analysis

- ..... LI Wan, HUANG Wei, LIU Ji-Hong, GAO Ming-Li, ZHU Ping-Ping (18)

Teaching Reform and Practice on Organic Chemistry Laboratory Course Based on “Synthetic Methodology”: Taking

- Preparation of Ethyl Benzoate as an Example ..... CHEN Miao, CHEN Yong-Jia, DING Er-Dong,  
DAI Chang-Hang, FANG Fan, GAO Kai-Min, HUO Jia-Tong, JIANG Xiao-Yu, JIANG Zi-Yuan, LI Yang,  
LI Zhi-Hao, LI Wei-Xingyue, LIU Zi-Chen, TANG Tian-Hua, WANG Chang, ZHANG Shu-Kun,  
ZHENG Xin-Ping, ZONG Jia-Rui, LIU Shuo, LI Yu-Xin, HAN Jie (23)

Exploration of the Teaching Method for Instrumental Analysis Laboratory: Inquiry and Research Type Teaching Mode

- ..... LI Lian-Hua, WU Li, LI Ying-Xiu, CHEN Feng-Juan, LIANG Yong-Min (28)

Practice and Experience of Teaching Experimental Design in Physical Chemistry Laboratory

- ..... CHUN Yuan, GAO Wei, YANG Jin-Yue (33)

Design of Information Instruction in the Chemistry Laboratory Course: Taking the Determination of COD in Water as an

- Example ..... XU Li-Mei, CHEN Jian-Zhong, LIN Ruo-Chuan (37)

The Teaching Mode of the Chemistry Experiment and Scientific Research Method Course

- ..... ZHUANG Yuan, LIU Jie-Min, YAO Zhe (44)

The Reform and Exploration for Theoretical Teaching of Chemical Engineering Principles of Bio-Engineering Specialty

- ..... ZHANG Wei, LI Qian, WANG Ping, WANG Yong, FANG Zhi-Gang (48)

### Survey of Chemistry

Brief Analysis of the Stability of Common Carbocations in the Teaching of University Chemistry

- ..... WANG Zhao-Xia, ZHAO Mei-Xin , XU Sheng, LUO Qian-Fu (54)

### Chemistry Laboratory

Measuring BET Specific Surface Area: A New Experiment for Undergraduate Teaching

- ..... CHEN Xiao-Juan, ZHANG Wei-Qing, Yu Xiao-Lan, LI Rui-Ying, CHEN Liu-Ping (60)

Curriculum Implementation and Safety Construction of Chemical Biology Laboratory ..... LIU Yang (68)

### Between Teacher and Student

Moral and Scientific Methodology Education in Chemistry Teaching ..... FAN Sen, ZHU Yuan-Hai (72)

The Influence of the Electronegativity of Valence Orbital of Carbon Atom on the Chemical Bond Property

- ..... CAO Chao-Tun (77)

### Self Studies

The Application of Taylor Series Expansion in Physical Chemistry ..... YANG Yan, ZHANG Gai, CHEN Shan-Chuan (83)

A Buffer with Constant Buffer Capacity in a Wide pH Range

- ..... ZHANG Yan-Ni, SHANG Xiao, WANG Hui, YUE Xuan-Feng (88)