

中国科学技术协会 主管  
中国化学会 主办  
北京师范大学  
全国中文核心期刊

ISSN 1003-3807  
CN 11-1923/O6  
美国化学文摘 (CA) 收录源期刊

# 化学教育

CHINESE JOURNAL OF CHEMICAL EDUCATION

★《中文核心期刊要目总览》收录期刊  
★中国核心期刊(遴选)数据库收录期刊  
★中国期刊全文数据库收录期刊

★中国学术期刊综合评价数据库统计源期刊  
★维普网收录源期刊  
★万方数据库收录期刊



邮发代号: 2-106



15

第36卷  
2015

HUAXUE JIAOYU

万方数据

## 专论

TPACK知识框架下中学化学体验式教学的研究 ..... 娄珀瑜 (1)

## 课程与教材研讨

中日初中理科课程中“常见的物质”主题内容比较 ..... 王秀红 刘格 (6)

## 教学研究

让科幻作品中的奇思妙想融入化学课堂 ..... 蒋葳 江锡钧 (10)

以新闻为素材的“有机高分子合成”教学设计 ..... 沈旭东 (12)

科学论证在化学实验探究中的应用——以氢氧化钠潮解现象的教学为例 ..... 季薛庆 季庆燕 (16)

优化探究点, 渐进式推进学生自主探究实验的开展 ..... 林捷 (20)

微粒观在化学教学中的巧妙运用——以“应用广泛的酸、碱、盐”教学难点突破为例 ..... 陆庭奎 (26)

运用微粒观开发复分解反应教学价值的实践与研究 ..... 程绍山 (29)

## 高考改革

高考化学图表信息题的功能及价值分析 ..... 彭梭 王后雄 (35)

## 调查报告

中学生化学学业自我概念量表的编制 ..... 刘一兵 曾荣森 (43)

高中化学探究式实验教学现状调查及对策 ..... 曾兵芳 王敏 (47)

## 实验教学与教具研制

巧用滴瓶设计系列化学实验 ..... 朱建兵 于永民 (52)

模拟自来水厂水净化实验 ..... 杨艳伟 刘春风 (54)

基于原理解读的铁吸氧腐蚀实验再设计 ..... 江军 (56)

初中化学中爆炸实验的趣味化设计 ..... 张志辉 (60)

从国家环保政策省思中学化学实验中四氯化碳的使用 ..... 麦裕华 (62)

## 问题讨论与思考

谈甲烷与氯气反应的教学误区 ..... 周存军 (66)

1 mol 葡萄糖氧化释放能量差异的化学分析 ..... 杨艳丽 陈小兰 (69)

## 化学奥林匹克

高中化学竞赛中的立体化学解读 ..... 方高飞 陈小琴 (72)

## 化学史与化学史教育

以史明鉴: 化学认识论对教学的启示 ..... 张霄 吴晗清 (77)

欢迎订阅2016年《化学教育》 ..... (71)

本期责任编辑 陈会玲 张霄青

# CHINESE JOURNAL OF CHEMICAL EDUCATION

2015 Vol. 36 No. 15

Sponsored by Chinese Chemical Society and Beijing Normal University

## Special Topics

Experiential Teaching of High School Chemistry based on TPACK Framework ..... LOU Po-Yu(1)

## Investigation on Courses and Teaching Materials

Comparison of Contents of "Common Substances" Themes in Junior High School Science Courses of China and Japan .....  
..... WANG Xiu-Hong LIU Ge(6)

## Teaching Research

Letting Creative Ideas from Science Fiction into Chemistry Classroom ..... JIANG Wei JIANG Xi-Jun(10)

Teaching Design of Organic Polymer Synthesis with News as Materials ..... SHEN Xu-Dong(12)

Application of Scientific Argumentation in Experimental Inquiry Teaching of Deliquescence Phenomenon of Sodium Hydroxide  
..... JI Xue-Qing JI Qing-Yan(16)

Promoting Independent Inquiry Experiment of Students by Optimizing Inquiry Questions ..... LIN Jie(20)

Application of Particle Concepts in Teaching of "Acid, Alkali and Salt" ..... LU Ting-Luan(26)

Developing Instructional Value of Double Decomposition Reaction by Particle Concept ..... CHENG Shao-Shan(29)

## Reform of College Entrance Examination

Analysis of Function and Value of Questions with Table or Figure Information in College Entrance Examination .....  
..... PENG Suo WANG Hou-Xiong(35)

## Findings Report

Development of Chemical Academic Self-concept Scale for Middle School Students ..... LIU Yi-Bing ZENG Rong-Sen(43)

Status of Inquiry Experiment Teaching of Senior High School Chemistry ..... ZENG Bing-Fang WANG Min(47)

## Experiment Teaching and Teaching Aid Development

Design of Serial Chemical Experiments using Dropping Bottle ..... ZHU Jian-Bing YU Yong-Min(52)

Simulated Experiment of Purifying Tap Water ..... YANG Yan-Wei LIU Chun-Feng(54)

Redesign of Experiment of Oxygen Absorption Corrosion of Iron ..... JIANG Jun(56)

Interesting Design of Explosion Experiment in Junior High School Chemistry ..... ZHANG Zhi-Hui(60)

Reflection on the Use of Carbon Tetrachloride in Middle School Chemistry Experiments based on National Environmental Protection Policy .....  
..... MAI Yu-Hua(62)

## Discussion and Thinking of Questions

Misunderstanding in Teaching of Reaction between Methane and Chlorine ..... ZHOU Cun-Jun(66)

Analysis of Different Data of Energy Released by Oxidation of One Mole Glucose .....  
..... YANG Yan-Li CHEN Xiao-Lan(69)

## Chemistry Olympiad

Analysis of Stereochemistry in Chemistry Competition of Senior High School ..... FANG Gao-Fei CHEN Xiao-Qin(72)

## History of Chemistry and Chemical History Education

Enlightenments of Chemical Epistemology to Chemistry Teaching ..... ZHANG Xiao WU Han-Qing(77)

# 化 学 教 育

(半月刊·1980年创刊)

2015年 第36卷 第15期 8月2日出版

主管单位 中国科学技术协会  
主办单位 中国化学会 北京师范大学  
编辑出版 《化学教育》编辑部  
编辑部地址 北京师范大学化学楼 217 室  
邮政编码 100875  
电话(传真) 010-58807875  
电子信箱 hxjy-jce@263.net  
网 址 http://www.hxjy.org

顾 问 刘知新  
主 编 刘正平  
副 主 编 李艳梅 孙世刚 王 磊 王祖浩  
杨振忠 郑长龙 朱玉军(专职)  
刊名题字 戴安邦  
印刷装订 河北天普润印刷厂  
总发行处 中国邮政集团公司北京市报刊发行局  
订 阅 全国各地邮局,或本刊编辑部

刊号 ISSN 1003 - 3807  
CN 11 - 1923/O6

国内邮发代号 2-106

国外发行代号 M3070

定价 12.00 元

# CHINESE JOURNAL OF CHEMICAL EDUCATION

2015 Vol. 36 No. 15

Sponsored by Chinese Chemical Society and Beijing Normal University

## Special Topics

Experiential Teaching of High School Chemistry based on TPACK Framework ..... LOU Po-Yu(1)

## Investigation on Courses and Teaching Materials

Comparison of Contents of "Common Substances" Themes in Junior High School Science Courses of China and Japan .....  
..... WANG Xiu-Hong LIU Ge(6)

## Teaching Research

Letting Creative Ideas from Science Fiction into Chemistry Classroom ..... JIANG Wei JIANG Xi-Jun(10)

Teaching Design of Organic Polymer Synthesis with News as Materials ..... SHEN Xu-Dong(12)

Application of Scientific Argumentation in Experimental Inquiry Teaching of Deliquescence Phenomenon of Sodium Hydroxide  
..... JI Xue-Qing JI Qing-Yan(16)

Promoting Independent Inquiry Experiment of Students by Optimizing Inquiry Questions ..... LIN Jie(20)

Application of Particle Concepts in Teaching of "Acid, Alkali and Salt" ..... LU Ting-Luan(26)

Developing Instructional Value of Double Decomposition Reaction by Particle Concept ..... CHENG Shao-Shan(29)

## Reform of College Entrance Examination

Analysis of Function and Value of Questions with Table or Figure Information in College Entrance Examination .....  
..... PENG Suo WANG Hou-Xiong(35)

## Findings Report

Development of Chemical Academic Self-concept Scale for Middle School Students ..... LIU Yi-Bing ZENG Rong-Sen(43)

Status of Inquiry Experiment Teaching of Senior High School Chemistry ..... ZENG Bing-Fang WANG Min(47)

## Experiment Teaching and Teaching Aid Development

Design of Serial Chemical Experiments using Dropping Bottle ..... ZHU Jian-Bing YU Yong-Min(52)

Simulated Experiment of Purifying Tap Water ..... YANG Yan-Wei LIU Chun-Feng(54)

Redesign of Experiment of Oxygen Absorption Corrosion of Iron ..... JIANG Jun(56)

Interesting Design of Explosion Experiment in Junior High School Chemistry ..... ZHANG Zhi-Hui(60)

Reflection on the Use of Carbon Tetrachloride in Middle School Chemistry Experiments based on National Environmental Protection Policy .....  
..... MAI Yu-Hua(62)

## Discussion and Thinking of Questions

Misunderstanding in Teaching of Reaction between Methane and Chlorine ..... ZHOU Cun-Jun(66)

Analysis of Different Data of Energy Released by Oxidation of One Mole Glucose .....  
..... YANG Yan-Li CHEN Xiao-Lan(69)

## Chemistry Olympiad

Analysis of Stereochemistry in Chemistry Competition of Senior High School ..... FANG Gao-Fei CHEN Xiao-Qin(72)

## History of Chemistry and Chemical History Education

Enlightenments of Chemical Epistemology to Chemistry Teaching ..... ZHANG Xiao WU Han-Qing(77)

# 化 学 教 育

(半月刊·1980年创刊)

2015年 第36卷 第15期 8月2日出版

主管单位 中国科学技术协会  
主办单位 中国化学会 北京师范大学  
编辑出版 《化学教育》编辑部  
编辑部地址 北京师范大学化学楼 217 室  
邮政编码 100875  
电话(传真) 010-58807875  
电子信箱 hxjy-jce@263.net  
网 址 http://www.hxjy.org

顾 问 刘知新  
主 编 刘正平  
副 主 编 李艳梅 孙世刚 王 磊 王祖浩  
杨振忠 郑长龙 朱玉军(专职)  
刊名题字 戴安邦  
印刷装订 河北天普润印刷厂  
总发行处 中国邮政集团公司北京市报刊发行局  
订 阅 全国各地邮局,或本刊编辑部

刊号 ISSN 1003 - 3807  
CN 11 - 1923/O6

国内邮发代号 2-106

国外发行代号 M3070

定价 12.00 元