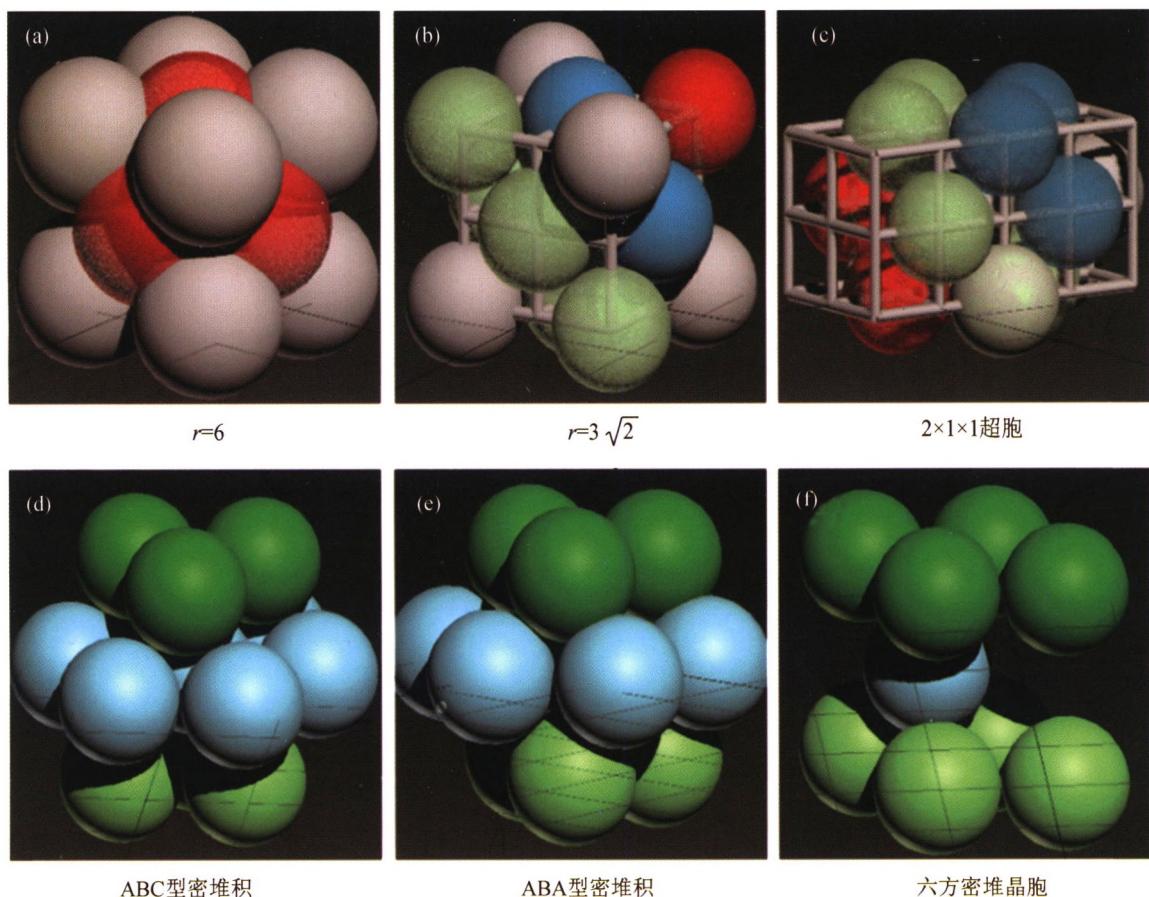


化学教育(中英文)

Chinese Journal of Chemical Education

2019 年 第 40 卷 第 19 期 Vol.40 No.19



邮发代号：2-106

ISSN 1003-3807



HUAXUE JIAOYOU



CHINESE
CHEMICAL
SOCIETY



主管：中国科学技术协会

主办：中国化学会

北京师范大学

2019年10月 化学教育(中英文) 第40卷 第19期
目 次

国际化学元素周期表年

- 生命的基础元素：碳的认知、生理功能和医学应用 夏 婷 李升可 王瑞兵 (1)

课程·教材·评价

- 真实情境与化学学科核心素养的发展——基于《普通高中化学课程标准(2017年版)》的解读 马 圆 严文法 宋丹丹 (6)

优质课例

- 基于真实生产场景的教学——以“金属的性质与冶炼”单元复习为例 詹发云 (11)

- 基于发展高中生化学学科核心素养的教学——以“盖斯定律”为例 陈秀娟 (18)

教学研究

- EQUIP工具在高中化学教师探究性教学水平测评中的应用研究 张文华 郎晓苏 王祖浩 (22)

- 基于真实情境和问题导向培养化学学科核心素养——以“二氧化硅”的教学为例 郭飞红 孙旭波 (29)

- 基于项目式教学的含硫物质转化复习教学设计与实施 宋立栋 刘 翠 王 磊 史 凡 (37)

- 基于发展学生化学核心素养的教学设计——以“沉淀溶解平衡”为例 刘玉荣 刘 倩 (41)

- 复杂离子反应的规律及其离子方程式书写策略 田存现 田 方 (47)

调研报告

- 高中生与化学热力学有关的迷思概念研究 王纪学 王向锋 张 莹 陈田田 (55)

- 高中生化学学科核心素养影响因素研究 李 佳 李云爽 孙 旭 (61)

信息技术与化学

- 基于Unity3D交互软件辅助金属晶体结构教学 李华倩 洪 梅 毛华强 冉 鸣 (68)

- “发现”密堆积：基于3ds MAX软件的金属晶体教学设计 张诗曼 李存璞 (72)

实验教学与教具研制

- 化学反应限度实验的再讨论 骆无忌 (80)

- 金属镁与铵盐水溶液反应实验探究 李淑敏 刘志刚 刘潇钰 (84)

- 基于科学风险认知的文身墨水系列探究实验 徐 昕 凌一洲 任红艳 曹秀娟 (88)

问题讨论与思考

- 价层电子对互斥理论的改进——计算中心原子价层电子对数的新方法 郑木炎 (93)

书评

- 教育对学生心理发展中的作用——评《发展与教育心理学(第2版)》 赵 鹏 (96)

- 推进教育信息化理论的发展与创新——评《融合与创新：教育信息化理论发展》 石 鑫 张 雷 (97)

论文简报

- 数字化实验在课堂教学中的应用 胡爱彬 (54)

- 手持简易电解质导电性测试仪的制作及使用 杨昌勇 (83)

- 2020年《化学教育》订阅通知** (17)

- 封面图片** (76)

CHINESE JOURNAL OF CHEMICAL EDUCATION

2019 Vol. 40 No. 19

Sponsored by Chinese Chemical Society and Beijing Normal University

International Year of the Periodic Table of Chemical Elements

- Basic Element of Life; Carbon and Its History, Physiological Function and Biomedical Application
..... XIA Ting LI Sheng-Ke WANG Rui-Bing(1)

Curriculum-Teaching Materials-Assessment

- Real Situation and the Development of Chemistry Core Literacy Based on the Interpretation of *Chemistry Curriculum Standards for Senior High Schools (2017 Edition)* MA Yuan YAN Wen-Fa SONG Dan-Dan(6)

Excellent Lesson

- Review Teaching of "Properties and Smelting of Metal" Based on Real Production Scenario ZHAN Fa-Yun(11)
Teaching of "Hess's Law" Based on Developing High School Students' Chemical Core Literacy CHEN Xiu-Juan(18)

Teaching Research

- Application of EQUIP Tool in Evaluation of High School Chemistry Teachers' Inquiry-Based Instruction Level
..... ZHANG Wen-Hua LANG Xiao-Su WANG Zu-Hao(22)

- Developing Chemical Core Literacy Based on Real Situations and Problem Orientation; Teaching of Silicon Dioxide
..... GUO Fei-Hong SUN Xu-Bo(29)

- Design and Implementation of Revision Teaching for Sulphur-Containing Substances Conversion Based on Project Teaching
..... SONG Li-Dong LIU Cui WANG Lei SHI Fan(37)

- Teaching Design of "Precipitation-Dissolution Equilibrium" Based on Developing Students' Core Literacy
..... LIU Yu-Rong LIU Qian(41)

- Exploration and Application of the Law of Complex Ion Reaction and the Writing Strategy of Ion Equation
..... TIAN Cun-Xian TIAN Fang(47)

Investigation Report

- Investigation on Chemical Thermodynamics Misconception of Senior High School Students
..... WANG Ji-Xue WANG Xiang-Feng ZHANG Ying CHEN Tian-Tian(55)

- Status and Influencing Factors of Senior High School Students' Chemistry Discipline Core Literacy
..... LI Jia LI Yun-Shuang SUN Xu(61)

Information Technology and Chemistry

- Teaching of Metal Crystal Structure Based on Unity 3D Virtual Simulation Software
..... LI Hua-Qian HONG Mei MAO Hua-Qiang RAN Ming(68)

- Discover Close Packing: Instructional Design of Metal Crystal Based on 3ds MAX ZHANG Shi-Man LI Cun-Pu(72)

Experiment Teaching and Teaching Aid Development

- Discussion on Chemical Reaction Limit Experiment LUO Wu-Ji(80)

- Experimental Inquiry on Magnesium Reacting with Ammonium Salt Solution
..... LI Shu-Min LIU Zhi-Gang LIU Xiao-Yu(84)

- Experimental Inquiry on Tattoo Inks Based on Scientific Risk Cognition
..... XU Yi LING Yi-Zhou REN Hong-Yan CAO Xiu-Juan(88)

Discussion and Thinking of Questions

- Improvement of Valence Shell Electron Pair Repulsion Theory: New Method for Calculating the Number of Valence Shell
Electron Pairs of Central Atom ZHENG Mu-Yan(93)

化学教育(中英文)

(半月刊·1980年创中文刊·2017年变更为中英文刊)

2019年 第40卷 第19期 10月2日出版

主管单位 中国科学技术协会

顾问 刘知新

主办单位 中国化学会 北京师范大学

主编 刘正平

编辑出版 《化学教育(中英文)》编辑部

副主编 李艳梅 孙世刚 王磊 王祖浩

编辑部地址 北京师范大学化学楼217室

杨屹 杨振忠 郑长龙 朱玉军(专职)

邮政编码 100875

刊名题字 戴安邦

电话(传真) 010—58807875

印刷装订 保定华泰印刷有限公司

咨询信箱 hxjy-jce@263.net

总发行处 中国邮政集团公司北京市报刊发行局

投稿网址 http://www.hxjy.org

订阅 全国各地邮局

刊号 ISSN 1003-3807
CN 10-1515/O6

国内邮发代号 2-106

国外发行代号 M3070

定价 21.00元

CHINESE JOURNAL OF CHEMICAL EDUCATION

2019 Vol. 40 No. 19

Sponsored by Chinese Chemical Society and Beijing Normal University

International Year of the Periodic Table of Chemical Elements

- Basic Element of Life; Carbon and Its History, Physiological Function and Biomedical Application
..... XIA Ting LI Sheng-Ke WANG Rui-Bing(1)

Curriculum-Teaching Materials-Assessment

- Real Situation and the Development of Chemistry Core Literacy Based on the Interpretation of *Chemistry Curriculum Standards for Senior High Schools (2017 Edition)* MA Yuan YAN Wen-Fa SONG Dan-Dan(6)

Excellent Lesson

- Review Teaching of "Properties and Smelting of Metal" Based on Real Production Scenario ZHAN Fa-Yun(11)
Teaching of "Hess's Law" Based on Developing High School Students' Chemical Core Literacy CHEN Xiu-Juan(18)

Teaching Research

- Application of EQUIP Tool in Evaluation of High School Chemistry Teachers' Inquiry-Based Instruction Level
..... ZHANG Wen-Hua LANG Xiao-Su WANG Zu-Hao(22)

- Developing Chemical Core Literacy Based on Real Situations and Problem Orientation; Teaching of Silicon Dioxide
..... GUO Fei-Hong SUN Xu-Bo(29)

- Design and Implementation of Revision Teaching for Sulphur-Containing Substances Conversion Based on Project Teaching
..... SONG Li-Dong LIU Cui WANG Lei SHI Fan(37)

- Teaching Design of "Precipitation-Dissolution Equilibrium" Based on Developing Students' Core Literacy
..... LIU Yu-Rong LIU Qian(41)

- Exploration and Application of the Law of Complex Ion Reaction and the Writing Strategy of Ion Equation
..... TIAN Cun-Xian TIAN Fang(47)

Investigation Report

- Investigation on Chemical Thermodynamics Misconception of Senior High School Students
..... WANG Ji-Xue WANG Xiang-Feng ZHANG Ying CHEN Tian-Tian(55)

- Status and Influencing Factors of Senior High School Students' Chemistry Discipline Core Literacy
..... LI Jia LI Yun-Shuang SUN Xu(61)

Information Technology and Chemistry

- Teaching of Metal Crystal Structure Based on Unity 3D Virtual Simulation Software
..... LI Hua-Qian HONG Mei MAO Hua-Qiang RAN Ming(68)

- Discover Close Packing: Instructional Design of Metal Crystal Based on 3ds MAX ZHANG Shi-Man LI Cun-Pu(72)

Experiment Teaching and Teaching Aid Development

- Discussion on Chemical Reaction Limit Experiment LUO Wu-Ji(80)

- Experimental Inquiry on Magnesium Reacting with Ammonium Salt Solution
..... LI Shu-Min LIU Zhi-Gang LIU Xiao-Yu(84)

- Experimental Inquiry on Tattoo Inks Based on Scientific Risk Cognition
..... XU Yi LING Yi-Zhou REN Hong-Yan CAO Xiu-Juan(88)

Discussion and Thinking of Questions

- Improvement of Valence Shell Electron Pair Repulsion Theory: New Method for Calculating the Number of Valence Shell
Electron Pairs of Central Atom ZHENG Mu-Yan(93)

化学教育(中英文)

(半月刊·1980年创中文刊·2017年变更为中英文刊)

2019年 第40卷 第19期 10月2日出版

主管单位 中国科学技术协会

顾问 刘知新

主办单位 中国化学会 北京师范大学

主编 刘正平

编辑出版 《化学教育(中英文)》编辑部

副主编 李艳梅 孙世刚 王磊 王祖浩

编辑部地址 北京师范大学化学楼217室

杨屹 杨振忠 郑长龙 朱玉军(专职)

邮政编码 100875

刊名题字 戴安邦

电话(传真) 010—58807875

印刷装订 保定华泰印刷有限公司

咨询信箱 hxjy-jce@263.net

总发行处 中国邮政集团公司北京市报刊发行局

投稿网址 http://www.hxjy.org

订阅 全国各地邮局

刊号 ISSN 1003-3807
CN 10-1515/O6

国内邮发代号 2-106

国外发行代号 M3070

定价 21.00元