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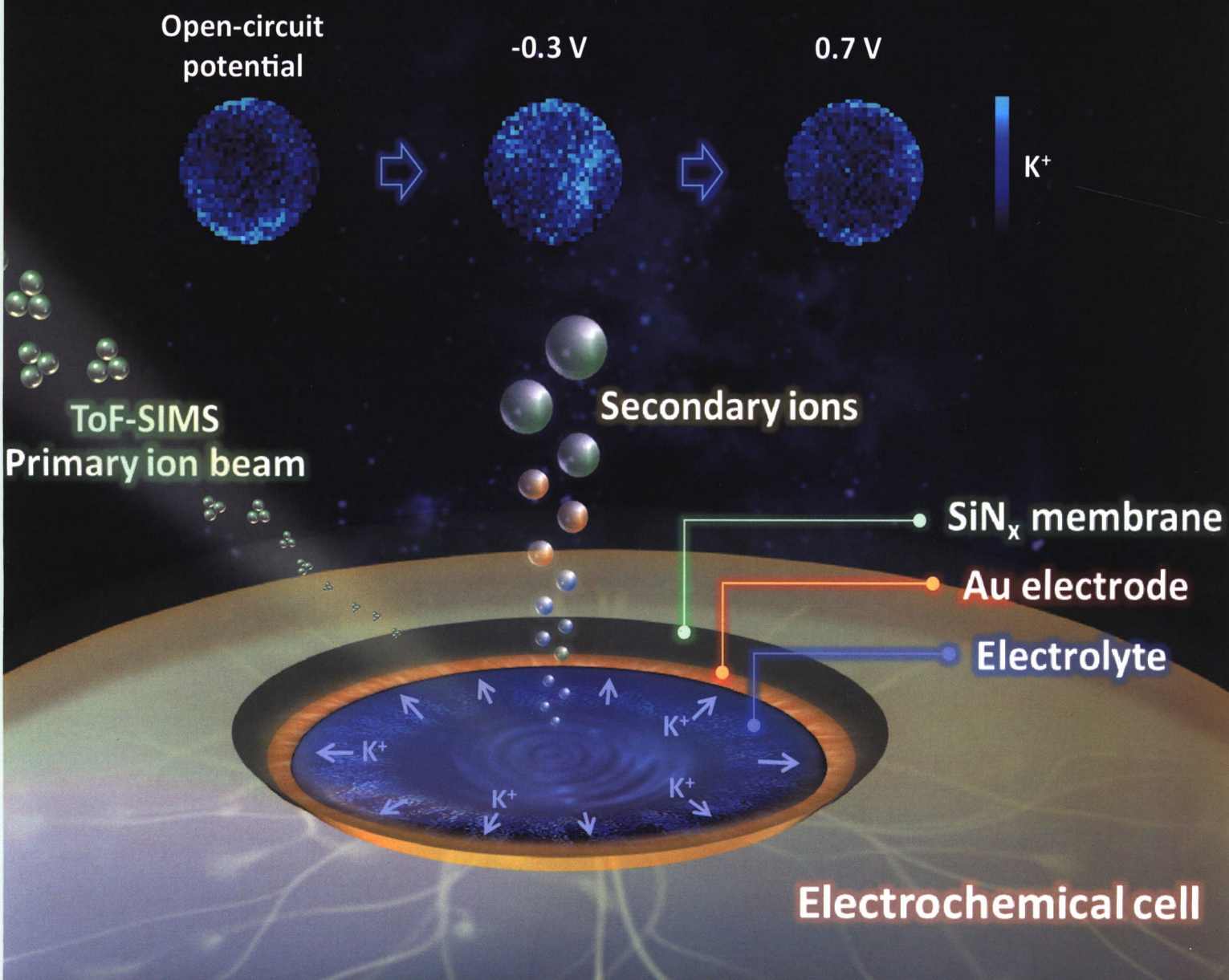
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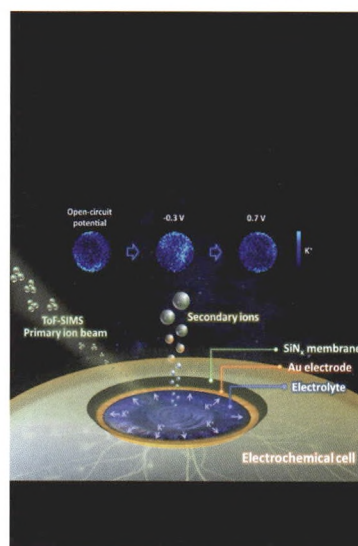
* 通信联系人.

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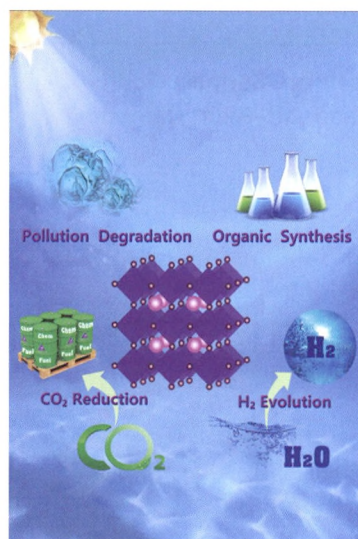
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金属有机骨架材料 ZIF-8 富集黄芩中黄芩苷的新方法
..... 郭文娟*, 于洁, 代昭, 侯伟钊, 化学学报, 2019, 77(11), 1203-1210

On the cover: A high vacuum compatible electrochemical cell was constructed for *in-situ* monitoring of the electrode-electrolyte interface in high vacuum environment. Dynamic molecular information of the immigration process of KCl aqueous solution during the electrochemical reaction could be visualized via pore-confined liquid time-of-flight secondary ion mass spectrometry (ToF-SIMS). [Long, Yi-Tao *et al.* on page 1164-1167.]

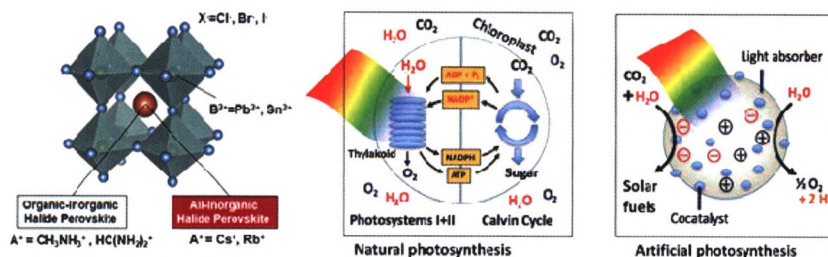


On the back cover: Metal halide perovskites with superior optoelectronic properties have been successfully utilized into various applications including photocatalysis. In this review, we summarized the recent advances of metal halide perovskite photocatalysts in hydrogen production, CO₂ reduction, pollution degradation and organic synthesis, and outlooked their challenges and future developments. [Zhao, Yixin *et al.* on page 1075-1088.]



Review

Recent Progress of Photocatalysis Based on Metal Halide Perovskites



Li, Xin; Zhang, Taiyang; Wang, Tian; Zhao, Yixin*

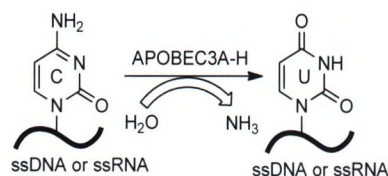
Acta Chim. Sinica **2019**, 77(11), 1075-1088

ABX₃-type metal halide perovskites with excellent optoelectronic properties have been successfully utilized to photovoltaics as well as artificial photosynthesis. Herein, we focus on the recent advances of metal-halide-perovskite photocatalysts in photocatalytic hydrogen production, CO₂ reduction, organics degradation and transformation along with reaction mechanisms and key challenges of these promising photocatalysts.

Recent Advances in the Structural Studies on Cytosine Deaminase APOBEC3 Family Members and Their Nucleic Acid Complexes

Jin, Jiaoyu; Yan, Xiaoxuan; Liu, Yaping; Lan, Wenxian; Wang, Chunxi; Xu, Bin*; Cao, Chunyang*

Acta Chim. Sinica **2019**, 77(11), 1089-1098

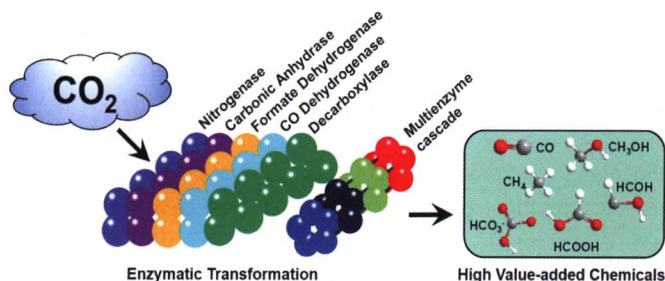


Human APOBEC3 family members deaminate cytosine in single-stranded DNA and RNA substrates by specially interacting with them, which play a variety of roles in human health and disease. This review summarized the recent progress on the structural studies on the free APOBEC3 members and their complexes with DNA or RNA, and proposed a possible research direction in this area in the future.

Recent Advances in Enzymatic Catalysis for Preparation of High Value-Added Chemicals from Carbon Dioxide

Liang, Shan; Zong, Minhua; Lou, Wenyong*

Acta Chim. Sinica **2019**, 77(11), 1099-1114

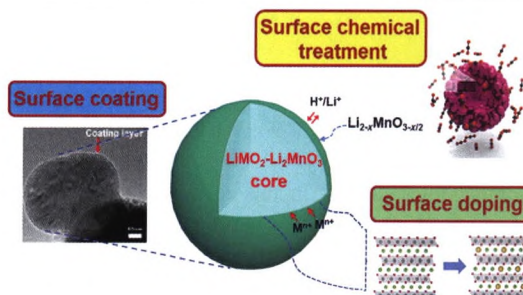


Excessive CO_2 emissions have created a double crisis of both energy and environment. Enzymatic transformation provides a green, mild, efficient and high selective strategy to realize sustainable recycling of CO_2 . The recent advances in enzymatic conversion of CO_2 by various single enzymes and multi-enzyme cascade systems are systematically summarized in this review. Some emerging theories, methodologies and technologies in this field are also discussed. Additionally, the shortcomings and future perspectives of the enzymatic routes are concluded.

Recent Advances on Surface Modification of Li- and Mn-Rich Cathode Materials

Li, Zhao; Wang, Zhong*; Ban, Liqin; Wang, Jiantao; Lu, Shigang

Acta Chim. Sinica **2019**, 77(11), 1115-1128

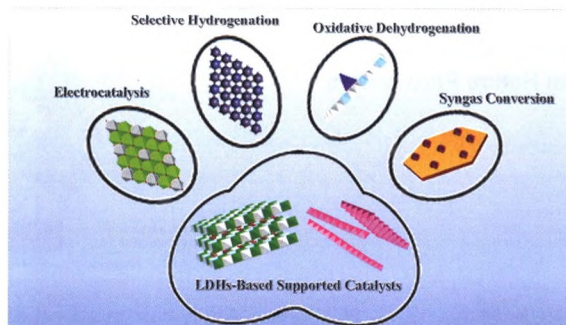


Recent advances on surface modification of Li- and Mn-rich cathode materials are reviewed and the mechanism of three surface modification methods are discussed. On this basis, surface integrated strategies combined several surface modified methods are introduced and discussed in recent years. The surface integrated strategies not only enhance the structural stability and suppress electrode/electrolyte surface-interface reaction, but also have an effective role on mitigating structure transformation and lattice oxygen release.

Preparation and Catalytic Performance of Supported Catalysts Derived from Layered Double Hydroxides

Yu, Jun; Yang, Yusen*; Wei, Min*

Acta Chim. Sinica **2019**, 77(11), 1129-1139



Representative preparation methods and strategies for supported catalysts derived from layered double hydroxides are summarized, and their performance and promising applications in heterogeneous catalysis field are highlighted.

Review of Theoretical and Applied Research of Graphene in Anti-corrosion Film and Organic Anti-corrosion Coatings

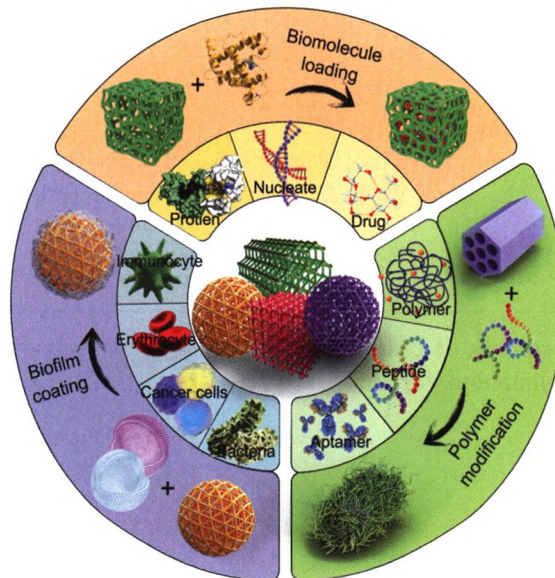


Ding, Rui; Chen, Si; Lv, Jing; Gui, Tai-jiang; Wang, Xiao; Zhao, Xiao-dong; Liu, Jie; Li, Bing-jun; Song, Li-ying*; Li, Wei-hua*

Acta Chim. Sinica **2019**, 77(11), 1140-1155

This paper reviewed the graphene and protective effects of anti-corrosion coatings from four aspects. They are barrier, binding strength, self-healing properties and cathodic protection properties. Among them, the shielding property involved the dispersion technique and orientation alignment of graphene. The complicated graphene dispersion methods are summarized from four aspects: modification mechanism, modification group, dispersion mechanism and preparation process.

Research Progress in Functional Metal-Organic Frameworks for Tumor Therapy



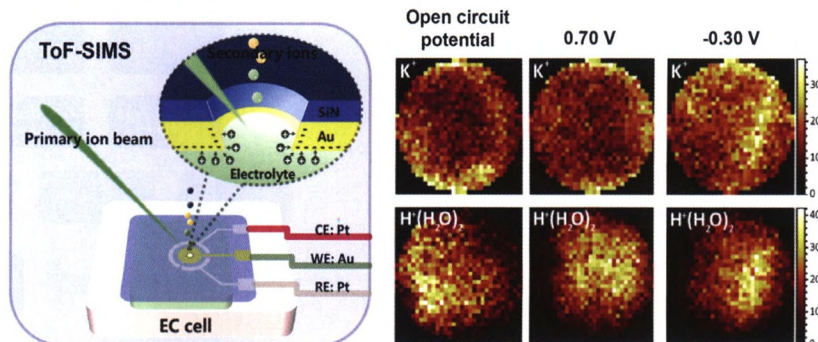
Zeng, Jinyue; Wang, Xiaoshuang; Zhang, Xianzheng*; Zhuo, Renxi

Acta Chim. Sinica **2019**, 77(11), 1156-1163

Metal-organic frameworks (MOFs), a class of ordered porous crystal materials, have attracted extensive research attention for their biomedical applications in drug delivery, immobilized bio-macromolecules and tumor therapy. In this review, recent progress on the bio-functionalization of MOFs for tumor treatment is summarized. The development trend of functional MOFs for biomedical application is also prospected.

Communication

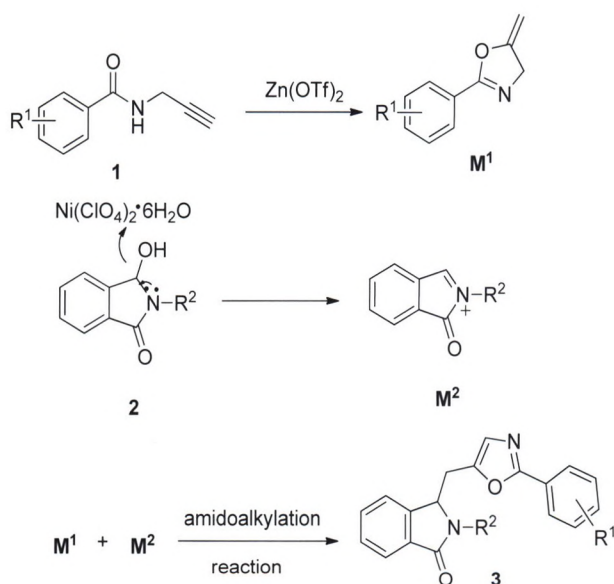
Visualization of the Electrolyte Migration under Electrochemical Process by ToF-SIMS



Xia, Hailun; Hua, Xin*; Long, Yi-Tao*
Acta Chim. Sinica **2019**, 77(11), 1164-1167

The chemical distributions of electrolyte under different potential was measured in real-time, indicating that the migration process of the electrolyte at the electrode-electrolyte interface could be visualized by ToF-SIMS in the high vacuum environment.

Zn/Ni Bimetallic Relay Catalysis: One Pot Intramolecular Cycloisomerization/Intermolecular Amidoalkylation Reaction toward Oxazole Derivatives

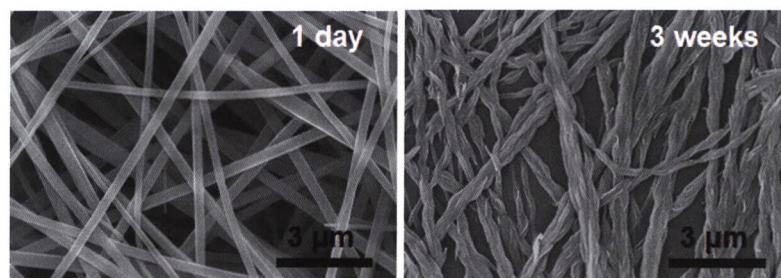


Zhang, Shuo; Hou, Zitong; Song, Zihé; Su, Xiaofeng; Wang, Feng; Yu, Yitao; Peng, Dan*; Cui, Shiqi; Liu, Yifan; Wang, Jiarui; Song, Jianjun*

Acta Chim. Sinica **2019**, 77(11), 1168-1172

The first step of the one-pot procedure is that $\text{Zn}(\text{OTf})_2$ acts as a π acid to activate the triple bond of *N*-(propargyl)-arylamides, and a subsequent intramolecular 5-*exo*-dig cyclization forms the oxazoline intermediate M^1 . Separately, $\text{Ni}(\text{ClO}_4)_2 \cdot 6\text{H}_2\text{O}$ acts as Lewis acid to activate and facilitate the departure of 3-hydroxyl group to form the electrophilic acyliminium ions M^2 , which is transformed to the oxazole derivatives in the intermolecular amidoalkylation reaction.

Controlled Assembly of Chiral Structure of Diphenylalanine Peptide



Li, Qi; Jia, Yi; Li, Junbai*

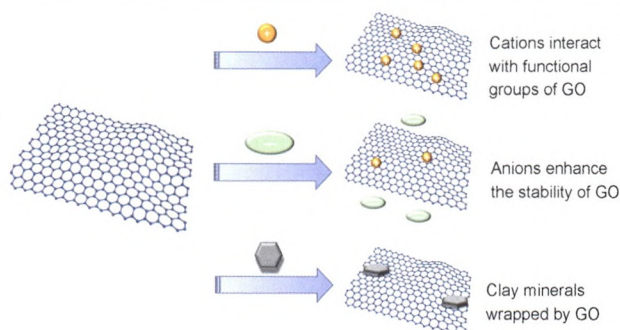
Acta Chim. Sinica **2019**, 77(11), 1173-1176

Helical cationic diphenylalanine peptide (CDP) fibers are obtained by simply controlling the aging time in ethanol.

Study on the Migration and Transformation Mechanism of Graphene Oxide in Aqueous Solutions

Shi, Lei; Pang, Hongwei; Wang, Xiangxue; Zhang, Pan; Yu, Shujun*

Acta Chim. Sinica 2019, 77(11), 1177-1183

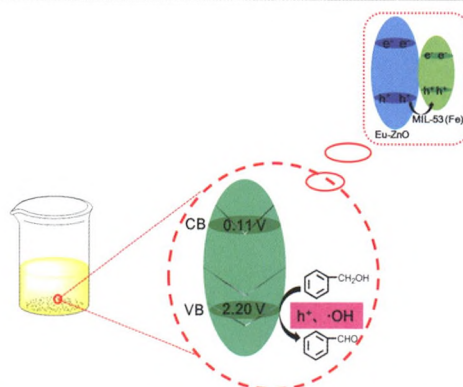


The effects of different cations, anions and clay minerals on GO coagulation at different concentrations.

Preparation of Eu-doped ZnO/MIL-53 (Fe) Photocatalyst and Its Catalytic Performance for Selective Oxidation of Alcohols

Meng, Shuangyan; Wang, Mingming; Lü, Bolin; Xue, Qunji*; Yang, Zhiwang*

Acta Chim. Sinica 2019, 77(11), 1184-1193

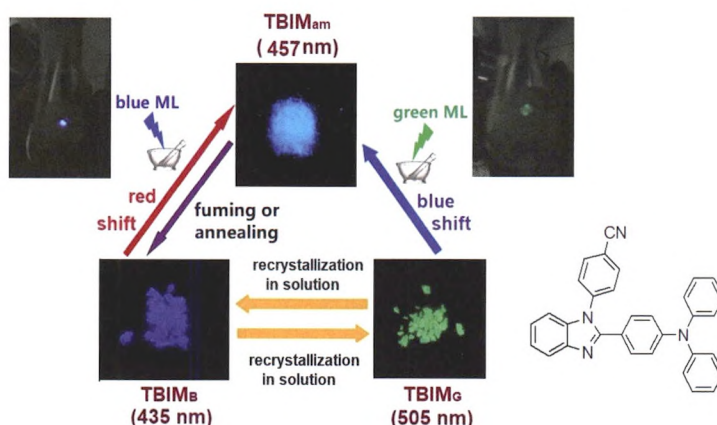


The novel 3D photocatalyst Eu-ZnO/MIL-53(Fe) was prepared by *in situ* method. This design effectively promoted the separation of photo-generated electron-hole. Hole (h^+) and hydroxyl radicals ($\bullet OH$) were the main active species.

Two Polymorphs of Triphenylamine-substituted Benzo[d]imidazole: Mechanoluminescence with Different Colors and Mechanofluorochromism with Emission Shifts in Opposite Direction

Liu, Xiaojing; Jia, Yanrong; Jiang, Hao; Gao, Guanlei; Xia, Min*

Acta Chim. Sinica 2019, 77(11), 1194-1202

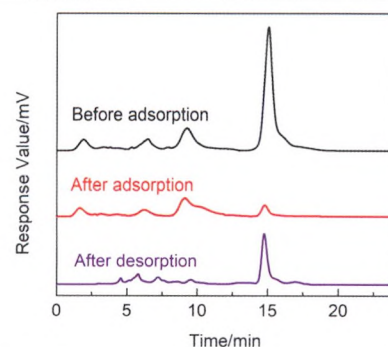


Two polymorphs TBIM_B and TBIM_G of 4-(2-(4-(diphenylamino)phenyl)-1H-benzo[d]imidazol-1-yl)benzonitrile (TBIM) display different-colored mechanoluminescence (ML) effect excited by endogenous friction discharge due to relative motions among cleavage planes when crystals are exposed to force stimuli. TBIM_B exhibits reversibly red-shifted emission while TBIM_G presents irreversibly blue-shifted emission when they are ground.

A New Method for Enriching baicalin in Scutellaria baicalensis Georgi by Metal Organic Framework Material ZIF-8

Guo, Wenjuan*; Yu, Jie; Dai, Zhao; Hou, Weizhao

Acta Chim. Sinica 2019, 77(11), 1203-1210



In this work, the ZIF-8 was used to carry out the static adsorption experiment on the crude extract of *Radix Scutellariae*. The desorption of the ZIF-8 material saturated with baicalin was carried out with phosphate buffered saline (PBS) solution. After the desorption was completed, the purpose of adsorbent regeneration was achieved. The adsorption conditions were also optimized to achieve the best adsorption performance.

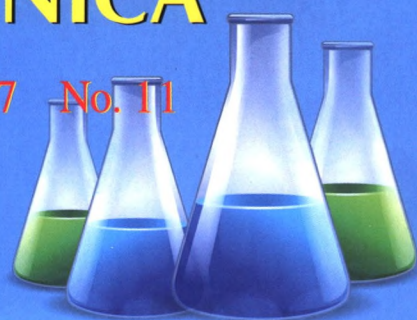


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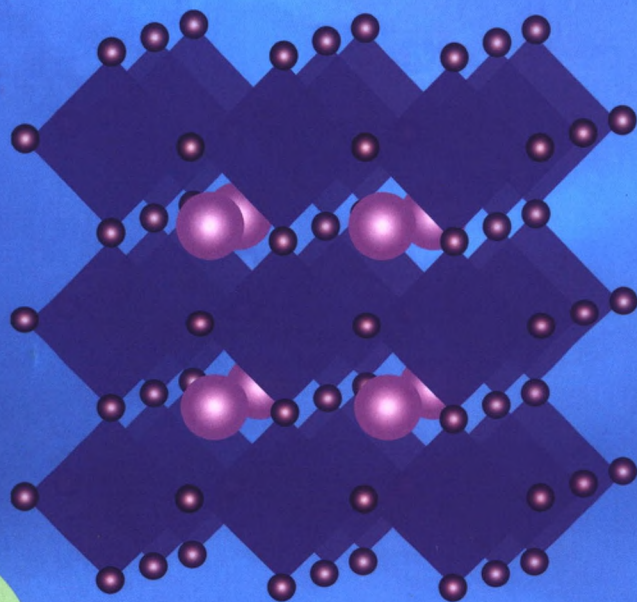
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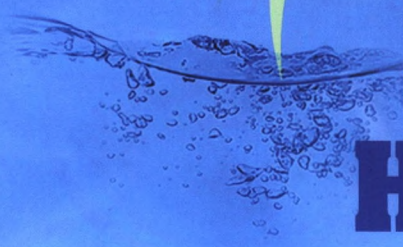
Pollution Degradation Organic Synthesis



CO₂ Reduction



H₂ Evolution



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万方数据

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