

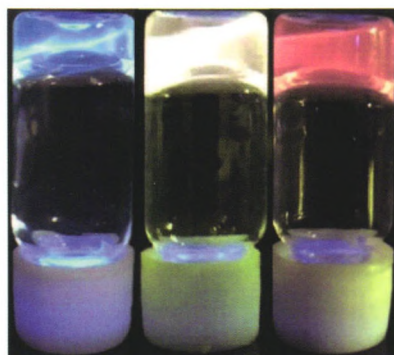
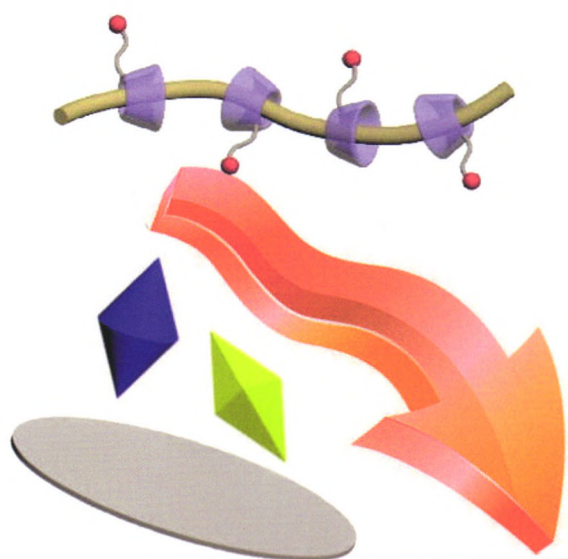


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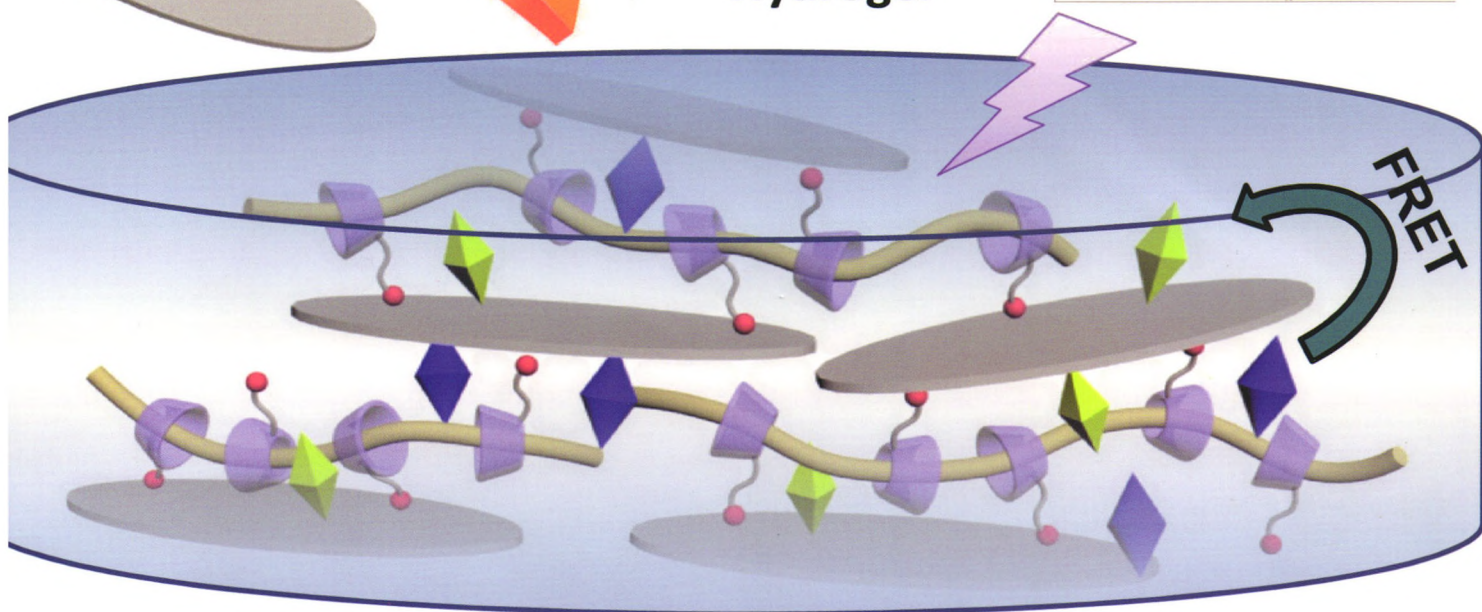
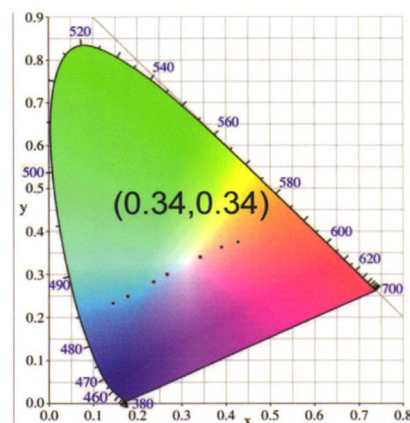
化学学报

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Hydrogel



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主办

万方数据

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(Huaxue Xuebao)

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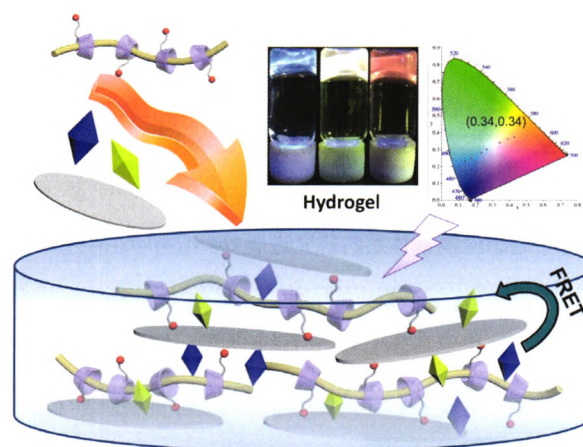
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- 高比能高功率全石墨烯锂离子电容器 顾晓瑜, 洪晔, 艾果*, 王朝阳*, 毛文峰*, 化学学报, 2018, 76(8), 644-648

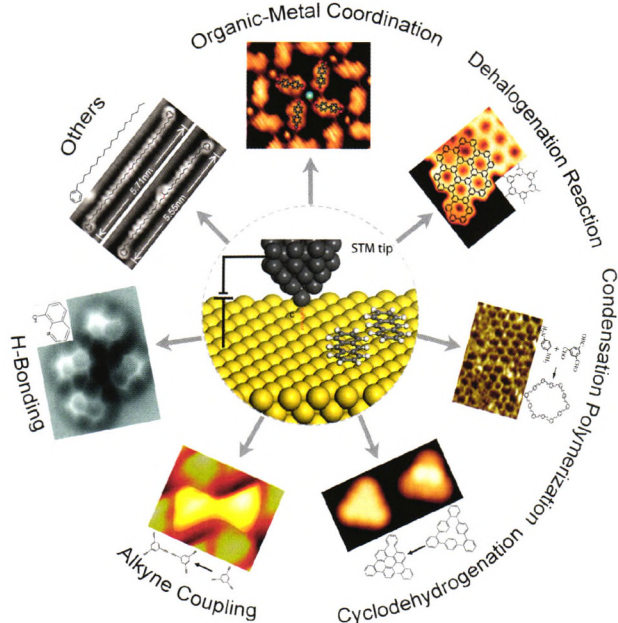
* 通信联系人.

On the cover: The supramolecular hydrogel from laponite and pseudorotaxane with convenient preparation and tunable luminescent behaviors was prepared. When two twisted intramolecular charge transfer (TICT) organic dye molecules were introduced in the hydrogel, a fluorescence resonance energy transfer (FRET) process would occur, leading to the different emission colors including white light through adjusting the ratios of dyes. [Liu, Yu *et al.* on page 622-626.]



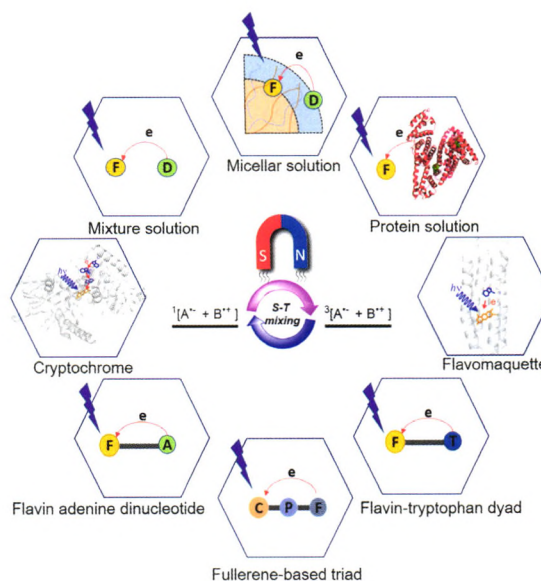
Review

Research Progress of On-surface Chemical Reaction for Organics in Ultra-High Vacuum



On-surface chemical reactions under ultra-high vacuum play an important role in the synthesis of two-dimensional nanomaterials and have attracted more and more attention in recent years. In this review, we introduce several typical organic on-surface chemical reactions, including organic-metal coordinated reaction, dehalogenation reaction, condensation polymerization, alkyne coupling and so on. Reaction process and products are analyzed in detail by scanning tunneling microscope (STM), especially for the connection way of final products after reaction, such as organic metal coordination bonds, C—C bonds and H-bonds.

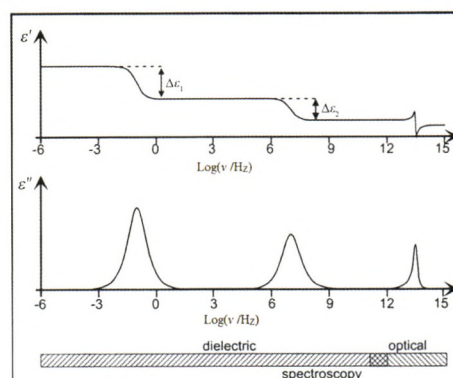
Hao, Zhenliang; Ruan, Zilin; Yang, Xiaotian;
Cai, Yiting; Lu, Jianchen*; Cai, Jinming*
Acta Chim. Sinica **2018**, 76(8), 585-596

Recent Advances in Magnetosensing
Cryptochrome Model Systems

Guo, Jinping; Wan, Haoyu; Jörg Matysik;
Wang, Xiaojie*

Acta Chim. Sinica **2018**, 76(8), 597-604

Cryptochrome is thought as biological magnetosensitive molecule undergoing light-triggered radical-pair dynamics. Several artificial systems have been constructed to model cryptochrome, which greatly simplify the complexity of the biological environment and allow for systematic variation of properties. In this review, the recent advances in magnetosensing cryptochrome model systems were summarized.

Dielectric Spectroscopy for the Study
of the Dynamic Behavior of Polymer
Chains

Lei, Dong; Lu, Dan*

Acta Chim. Sinica **2018**, 76(8), 605-616

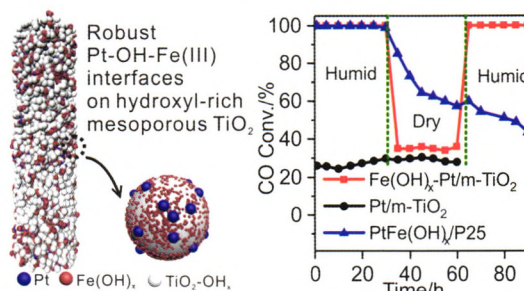
The vibrational spectrum can be divided into two major categories: one is a resonance type, and another is a relaxation type. The dielectric spectrum belongs to the relaxation-type spectrum, and the frequency of the study ranges from $10^{-6} \sim 10^{12}$ Hz. In general, the relaxation signal for polymers is mainly focused on $10^{-1} \sim 10^7$ Hz. When the time scale of the segmental motion is in the same order of magnitude as the time scale of the frequency change, the permittivity decreases and the energy loss is accompanied.

Communication

Stabilizing Catalytic Pt-OH-Fe(III) In-
terfaces by Mesoporous TiO₂ with
Rich Surface Hydroxyl Groups

Wu, Qingyuan; Qin, Ruixuan; Zang, Dandan; Zhang, Wuyong; Wu, Binghui*; Zheng, Nanfeng*

Acta Chim. Sinica **2018**, 76(8), 617-621

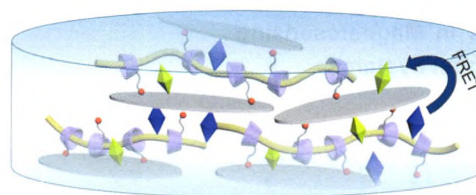


Rich and humidity-sensitive surface hydroxyls on high-surface-area mesoporous TiO₂ stabilize catalytic Pt-OH-Fe(III) interfaces for low temperature CO oxidation.

Construction and Luminescent Behavior of Supramolecular Hydrogel with White-Light Emission

Zhang, Yi; Chen, Yong; Li, Jingjing; Liang, Lu; Liu, Yu*

Acta Chim. Sinica **2018**, 76(8), 622-626



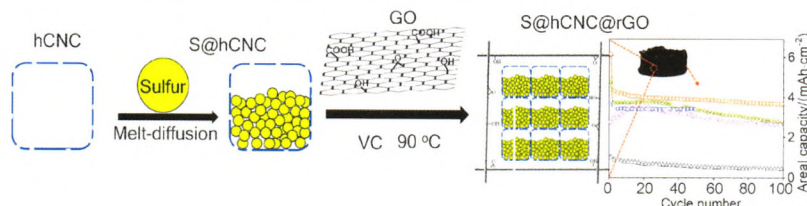
Owing to the fluorescence resonance energy transfer (FRET) of two twisted intramolecular charge transfer (TICT) dyes, a cyclodextrin-based supramolecular hydrogel emits the multicolor fluorescence including white light.

Article

Free-Standing Monolithic Sulfur Cathode of Reduced Graphene Oxide Wrapped Sulfur-Filled Carbon Nanocages with High Areal Capacity

Wang, Xiao; Li, Youbin; Du, Lingyu; Gao, Fujie; Wu, Qiang*; Yang, Lijun; Chen, Qiang; Wang, Xizhang*; Hu, Zheng

Acta Chim. Sinica **2018**, 76(8), 627-632

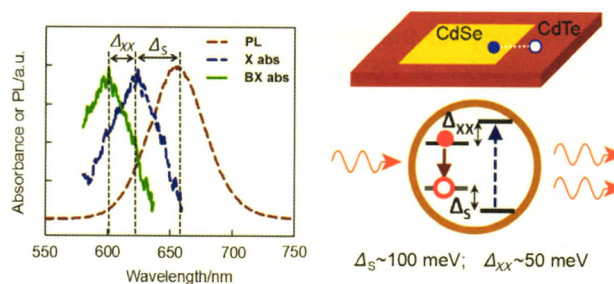


Free-standing monolithic sulfur cathode of reduced graphene oxide wrapped sulfur-filled carbon nanocages (S@hCNC@rGO) exhibits high areal capacity and excellent stability, owing to the physical confinement of nanocages, the chemical adsorption of oxygen-containing groups on rGO, as well as the accelerated charge transfer kinetics arising from the hierarchical porous structure and the high conductivity.

Record-Low Continuous Wavelength-pumped Lasing Thresholds Using Quantum Wells via Single-exciton Optical Gain Mechanism

Yang, Guangben; Liu, Xiaxia; Li, Henghui; Li, Wangnan; Wang, Song; Wu, Kaifeng; Liang, Guijie*

Acta Chim. Sinica **2018**, 76(8), 633-638

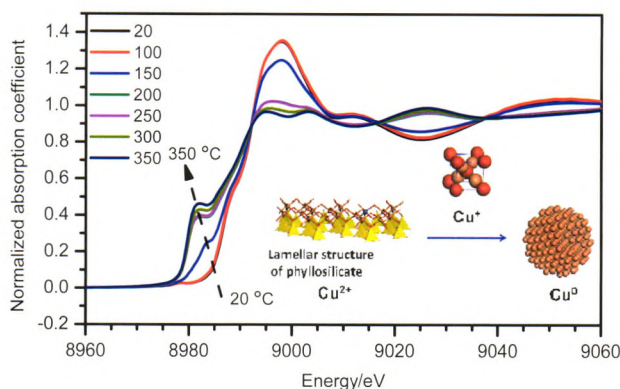


Atomically-thin CdSe/CdTe Type-II heteronanoplatelets (NPLs) were prepared to achieve the low-threshold lasing. By the integrated effects of the interface engineering and the single-exciton optical gain mechanism of the type-II hetero-structuring, the record-low continuous wavelength-pumped lasing has been realized based on the large Stokes shift (Δ_s) and strong exciton-exciton repulsion (Δ_{xx}).

In situ X-ray Absorption Spectroscopy Characterization of Copper Valence State in Cu-Zn/SiO₂ Catalyst

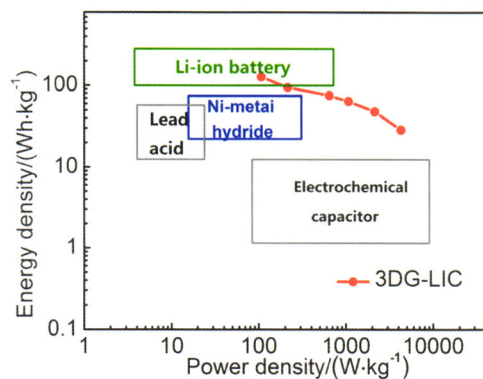
Jia, Zhenlong; Tu, Yunbao; Wang, Jianqiang*; Frenkel, Anatoly I.; Yang, Weimin*; Liu, Zhongneng; Xu, Zhongqiang

Acta Chim. Sinica **2018**, 76(8), 639-643



The valence states of copper for both Cu-Zn/SiO₂ and Cu/SiO₂ catalyst during hydrogen reduction in the temperature range of 20 °C to 350 °C have been studied by *in situ* X-ray Absorption Near Edge Spectroscopy (XANES) characterization at the Cu K-edge.

All Graphene Lithium Ion Capacitor with High-Energy-Power Density Performance



The three-dimensional graphene (3DG) were successfully employed as both cathode and anode active materials for lithium ion capacitors (3DG-LIC) with high energy density (105 Wh/kg) because the potential window of 3DG-LIC extend from 2.5 to 4.0 V compared to traditional supercapacitor (SC) by prelithiation of anode. The similar chemistry and microstructure maximizes the capacity and rate performance of cathode and anode, which indicates that the 3DG-LIC can be a promising candidate for high-energy-power storage system and would have a wide application in other electrochemical applications.

Gu, Xiaoyu; Hong, Ye; Ai, Guo*; Wang, Chaoyang*; Mao, Wenfeng*

Acta Chim. Sinica **2018**, 76(8), 644-648



通过液化空气集团 2018 年度科学挑战赛，液化空气集团集结科学社群，用创新方式应用不可或缺的小分子，围绕三个挑战开发新的应用，为改善空气质量、抵御全球气候变化做贡献。液化空气集团的创新体现了创造力、好奇心、集体智慧和充沛活力。我们诚邀您参加！



挑战一

低二氧化碳的氢气

如何用低成本而且低温室气体排放的方式生产氢气？



挑战二

氢气来了

如何使用氢气避免基于化石燃料的工业过程中温室气体的排放？



挑战三

可持续的食品生产

如何通过经济、健康、可持续的方式满足 2018 年 76 亿人口的食物需求？

关于奖品



每个获奖提案的奖金为

5 万欧元

获奖提案可分享的研究经费

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方案提交截止时间：2018 年 9 月 20 日 23:00

提交提案，请登陆网址：<https://www.airliquide.com/magazine/2018-air-liquide-scientific-challenge>

科学挑战赛计划时间表

6月25日
挑战开始

9月20日
提案提交截止

2018年10月-2019年1月
提案审核

2019年3月
公布获奖者

