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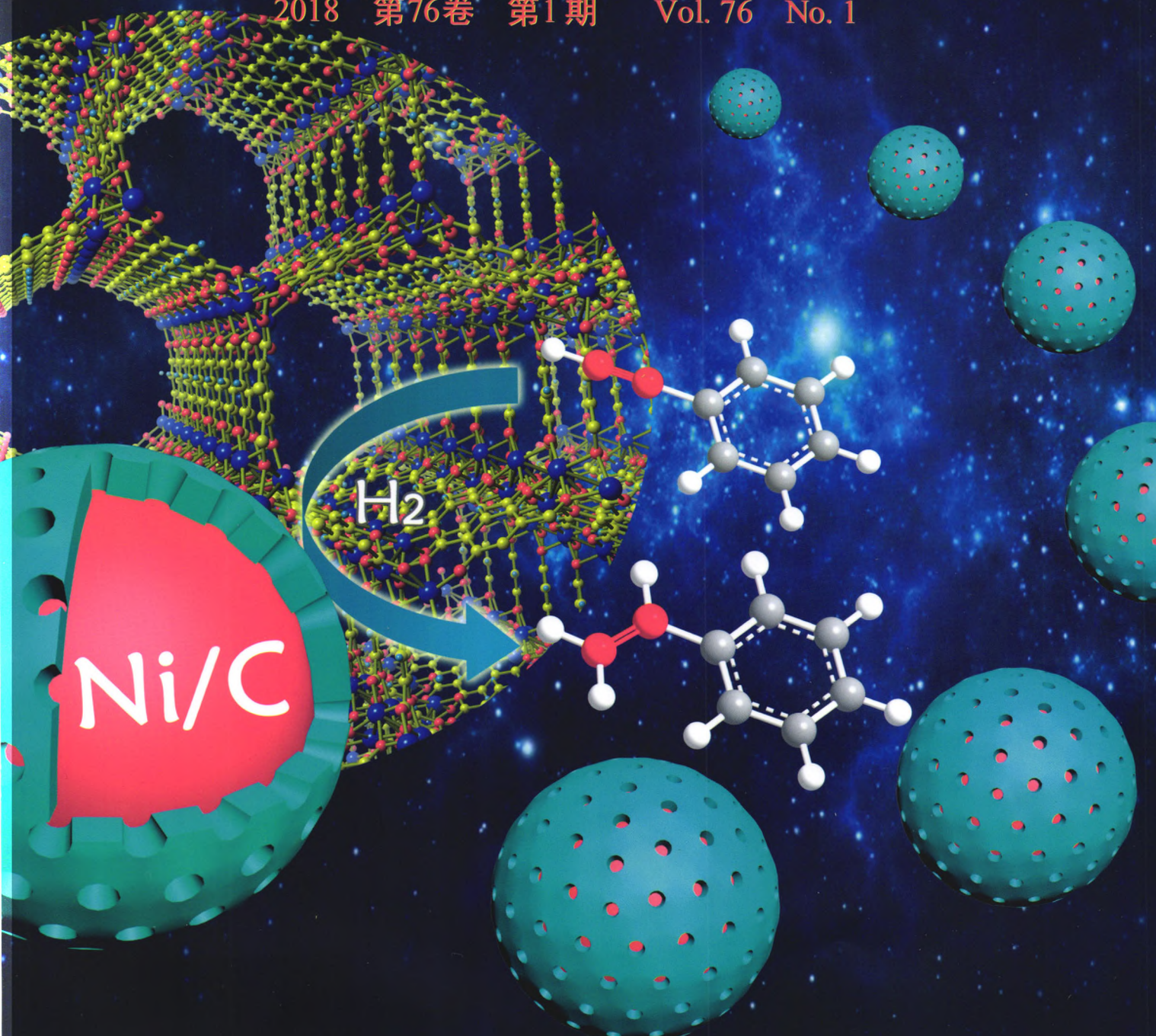


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Ni 和 P 微量掺杂的 Pd 基催化剂对碱性介质中乙醇电氧化性能的增强效应研究 朱婵, 海洋, 赵志刚, 阳耀月*, 化学学报, **2018**, 76(1), 30-34

基于透明质酸的缺氧响应型胶束的制备及性能研究 张蓓, 常柏松, 孙涛垒*, 化学学报, **2018**, 76(1), 35-42

(NH₄)₂MoS₄ 引导 CdTe QDs 自组装及光学性质调控和细胞成像 孙权洪, 李智, 马楠*, 化学学报, **2018**, 76(1), 43-48

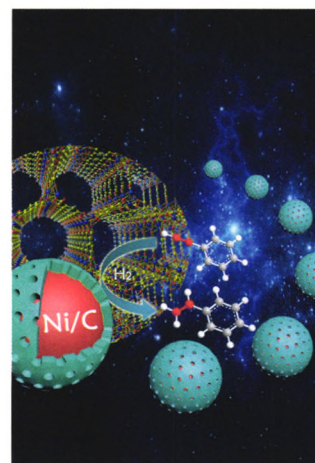
超卤素掺杂立方相卤化物钙钛矿太阳能电池材料第一性原理研究 吴苗苗*, 刘世强, 陈浩, 魏雪虎, 李洺阳, 杨志宾*, 马向东, 化学学报, **2018**, 76(1), 49-54

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甲硫醇在 Co 修饰 MoS₂ 团簇边缘位的脱硫机理研究 张田, 郭琛, 魏淑贤, 武中华, 韩兆翔, 鲁效庆*, 化学学报, **2018**, 76(1), 62-67

* 通信联系人.

On the cover: A series of Ni/C core-shell nano catalysts with abundant mesoporous and uniform size were prepared by Ni-MOF-74 pyrolysis. The Ni/C exhibits excellent catalytic activity and recyclability in phenylacetylene hydrogenation, which is the most promising transition metal catalyst that can be comparable with noble metal. [Liang, Changhai *et al.* on page 22-29.]

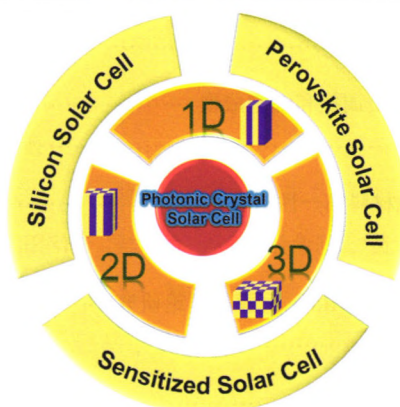


Review

Research Progress of Photonic Crystal Solar Cells

Zhao, Cong; Ma, Ying*; Wang, Yang; Zhou, Xue; Li, Huizeng; Li, Mingzhu*; Song, Yanlin

Acta Chim. Sinica **2018**, 76(1), 9-21



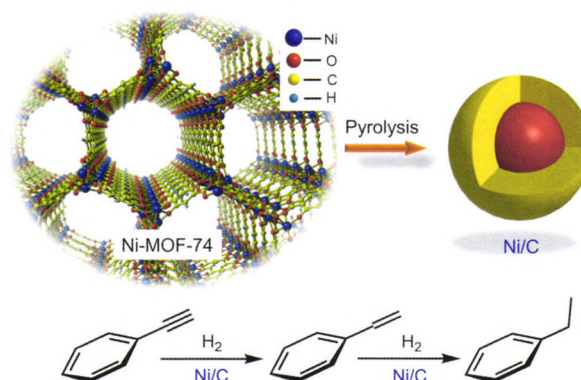
Photonic crystal has shown great potential in solar cells thanks to its unique optical performance including photonic band gap, “slow photon” effect and other unique light control performance. The application of photonic crystals (1D, 2D, 3D) in silicon solar cells, dye-sensitized solar cells and perovskite solar cells are summarized.

Article

Preparation of Ni/C Core-shell Nanoparticles through MOF Pyrolysis for Phenylacetylene Hydrogenation Reaction

Guo, Xiaoling; Chen, Xiao; Su, Dangsheng; Liang, Changhai*

Acta Chim. Sinica **2018**, 76(1), 22-29

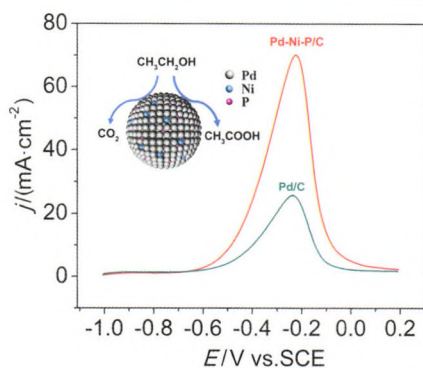


A series of Ni/C Core-shell nano catalysts with rich mesopores were prepared by MOF pyrolysis method and were employed in phenylacetylene (PA) hydrogenation. With an activity of up to $0.833 \text{ mmol} \cdot \text{min}^{-1} \cdot \text{g}_{\text{cat}}^{-1}$ at $50 \text{ }^\circ\text{C}$, Ni/C catalyst exhibited much better catalytic activity than any other reported transition metal catalyst.

Preliminary Study of Ni and P Low-doped Pd-based Electrocatalysts Toward Ethanol Oxidation Reaction in Alkaline Media

Zhu, Chan; Hai, Yang; Zhao, Zhigang; Yang, Yaoyue*

Acta Chim. Sinica 2018, 76(1), 30-34

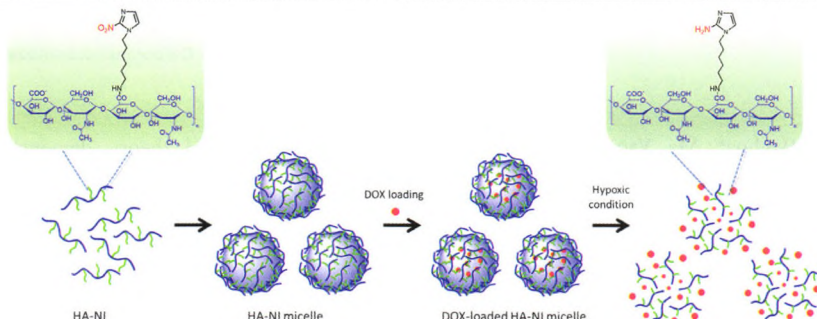


Ni and P low-doped Pd-based electrocatalysts highly increase the catalytic performance of ethanol oxidation in alkaline media. The peak current density of ethanol oxidation on as-prepared Pd-Ni-P/C catalyst is roughly 3 times than that of commercial Pd/C.

Synthesis and Study of Hypoxia-Responsive Micelles Based on Hyaluronic Acid

Zhang, Bei; Chang, Baisong; Sun, Taolei*

Acta Chim. Sinica 2018, 76(1), 35-42

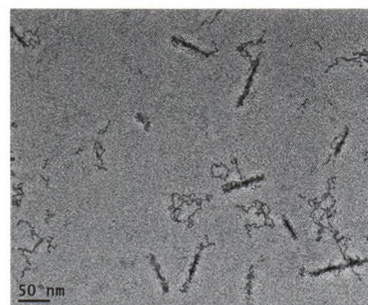
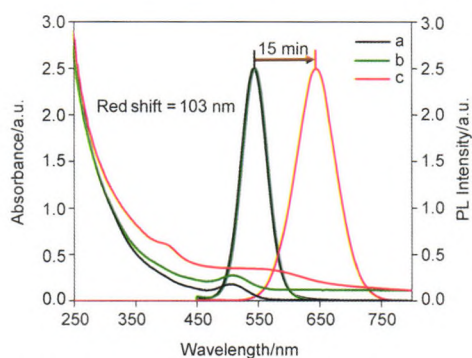


A hypoxia-responsive drug delivery system was developed by grafting hyaluronic acid (HA) with nitroimidazole (NI) derivative. The amphiphilic HA-NI conjugates could self-assemble into micelles and encapsulate doxorubicin (DOX). The micelles generated a much wider size distribution and completely disintegrated under hypoxic condition. *In vitro* drug release studies demonstrated that DOX was released from HA-NI micelles following a hypoxia-dependent manner.

(NH₄)₂MoS₄-Guided Self-Assembly of CdTe QDs and Control over Their Optical Properties and Cell Imaging

Sun, Quanhong; Li, Zhi; Ma, Nan*

Acta Chim. Sinica 2018, 76(1), 43-48

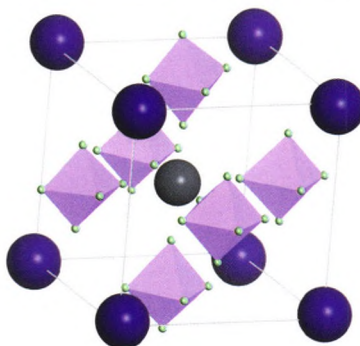


(NH₄)₂MoS₄-guided self-assembly of CdTe QDs is a simple and quick method to adjust the emission wavelength of CdTe QDs. By this method, emission wavelength of CdTe QDs underwent a red-shift of more than 100 nm for 15 min at 100 °C in the presence of (NH₄)₂MoS₄.

Superhalogen Substitutions in Cubic Halide Perovskite Materials for Solar Cells: A First-principles Investigation

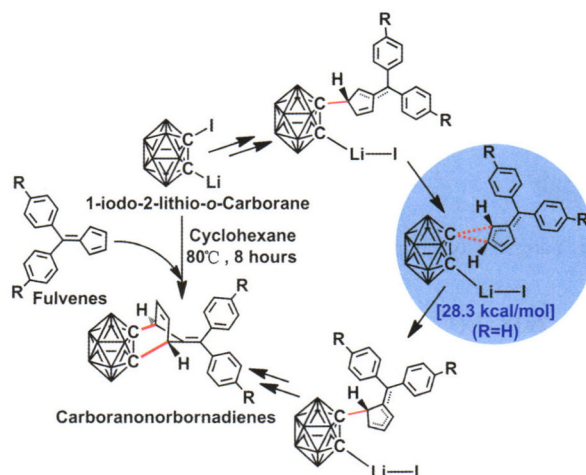
Wu, Miao Miao*; Liu, Shiqiang; Chen, Hao; Wei, Xuehu; Li, Mingyang; Yang, Zhibin*; Ma, Xiangdong

Acta Chim. Sinica 2018, 76(1), 49-54



We designed a series of new perovskite materials through substituting I⁻ anions in CsPbI₃ by superhalogen clusters and studied their structures and properties in first-principles way. It is demonstrated that CsPb(PCl₆)₃'s bandgap is 1.58 eV and could be a potential candidate material for solar cells.

Computational Insights into the Diels-Alder-like Reactions of 1-Iodo-2-Lithio-*o*-Carborane with Fulvenes

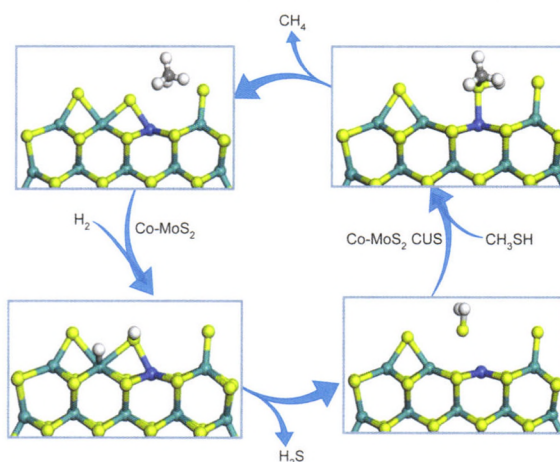


Mu, Weihua*; Ma, Yao; Fang, Decai; Wang, Rong; Zhang, Haina

Acta Chim. Sinica **2018**, 76(1), 55-61

Density functional theory demonstrates a stepwise formation mechanism of carboranonorbomadienes from 1-iodo-2-lithio-*o*-carborane and fulvenes. The IDSCRF-B3LYP/DZVP level results predict consistent half-lives and rates with corresponding experimental yield under given reaction conditions.

Investigation on CH₃SH Desulfurization Mechanism at the Edge Site of Co-Doped MoS₂ Cluster



Zhang, Tian; Guo, Chen; Wei, Shuxian; Wu, Zhonghua; Han, Zhaoxiang; Lu, Xiaoqing*

Acta Chim. Sinica **2018**, 76(1), 62-67

The complete desulfurization process includes the formation of CUS and the desulfurization process of CH₃SH. The formation of CUS starts with H₂ dissociation followed by H₂S generation and desorption. CH₃SH adsorbed at the CUS site, followed by the bonds scissions thus the removal of S and CH₄ formation.



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