



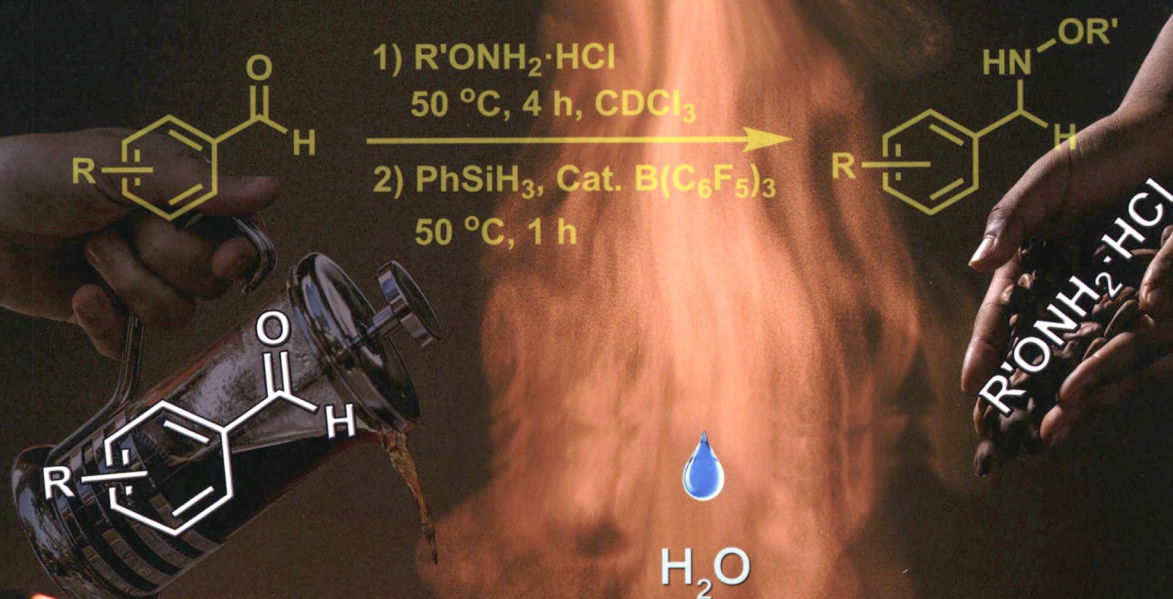
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化学学报

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one-pot reaction

BCF
 PhSiH_3

SSN 0567-7351



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中国化学会
中国科学院上海有机化学研究所

主办

万方数据

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(Huaxue Xuebao)

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- 高通量筛选金属-有机框架: 分离天然气中的硫化氢和二氧化碳 杨文远, 梁红, 乔智威*, 化学学报, **2018**, 76(10), 785-792
- 两种七氟醚自由基 $[(CF_3)_2C(\bullet)OCH_2F, (CF_3)_2CHOC(\bullet)HF]$ 与氧气反应及 $OH\cdot$ 再生机理的理论研究 武卫荣, 员晓敏, 侯华, 王宝山*, 化学学报, **2018**, 76(10), 793-801
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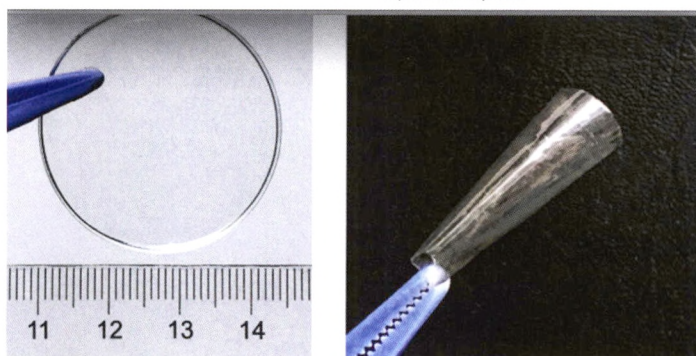
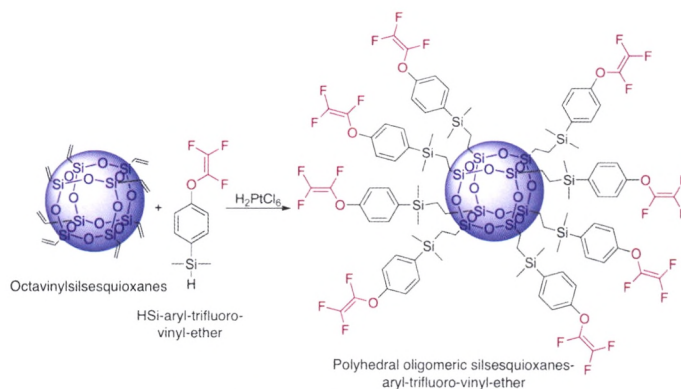
* 通信联系人.

On the cover: An efficient one-pot reductive amination method has been developed by reaction of aldehydes and alkoxyamines with hydrosilanes as the hydride sources and $\text{B}(\text{C}_6\text{F}_5)_3$ as catalyst without cleavage of the N—O bond. This protocol can be used to prepare the secondary and tertiary alkoxyamines by starting from the primary and secondary ones, respectively. [Nie, Wanli *et al.* on page 774-778.]



Review

Recent Advances in Fluorine-containing Materials with Extreme Environment Resistance

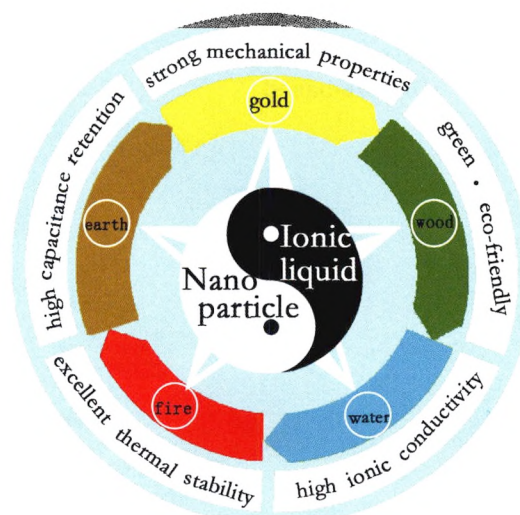


Jin, Weize; Lu, Guolin; Li, Yongjun; Huang, Xiaoyu*

Acta Chim. Sinica **2018**, 76(10), 739-748

Materials with extreme environment resistance can be normally used under severe conditions, while the common hydrocarbon materials cannot tolerate. It was found that fluorine atoms can effectively enhance the extreme environment resistance property of materials. The development and present situation of fluorine-containing materials with extreme environment resistance are briefly introduced.

Research Progress of Ionic Liquid-Inorganic Particle Hybrid Electrolytes in Secondary Batteries

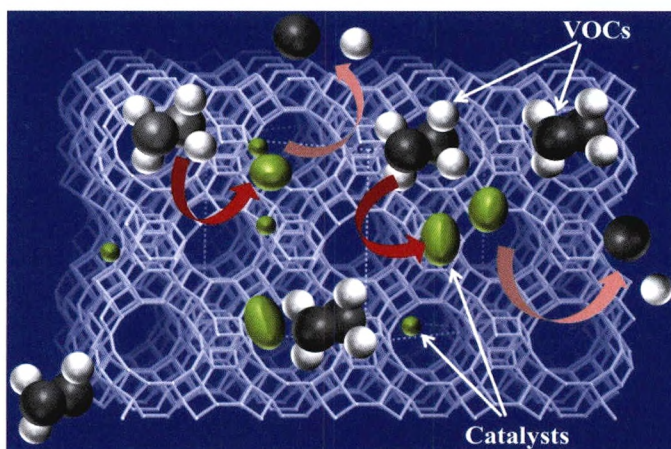


Qiu, Huayu; Zhao, Jingwen*; Zhou, Xinhong*; Cui, Guanglei*

Acta Chim. Sinica **2018**, 76(10), 749-756

The latest research progress of ionic liquid-inorganic particle hybrid electrolyte are summarized, and the synergistic mechanism of performance enhancement in terms of mechanical properties, thermal stability, capacitance retention, ion transference number, and conductivity is analyzed.

Recent Progress in the Removal of Volatile Organic Compounds by Zeolite and Its Supported Catalysts



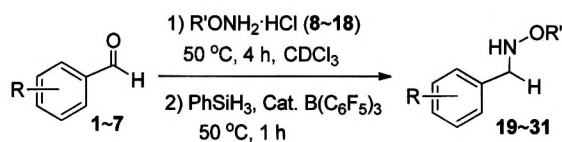
Feng, Aihu; Yu, Yang; Yu, Yun*; Song, Lixin

Acta Chim. Sinica **2018**, 76(10), 757-773

In this review, a summary of recent research progress on the adsorption and catalytic oxidation of volatile organic compounds such as alkanes, aromatic hydrocarbons, aldehydes, ketones, acids, esters, alcohols and chlorinated hydrocarbons by zeolite and its supported catalysts is presented.

Communication

Reductive Amination by One Pot Reaction of Aldehydes and Alkoxyamines Catalyzed by $B(C_6F_5)_3$



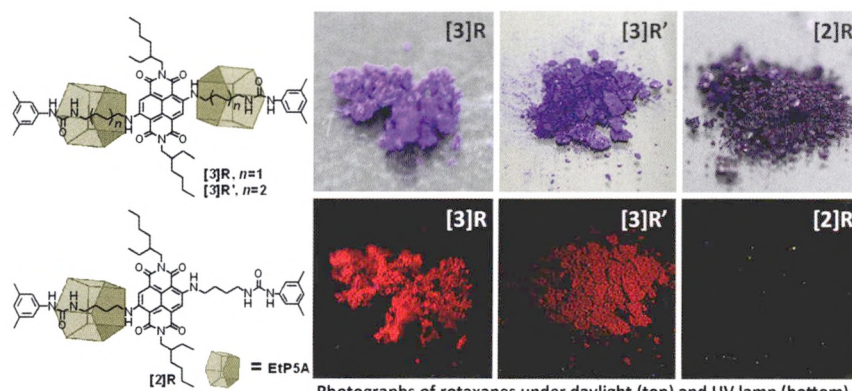
An efficient one pot reductive amination method has been developed by reaction of aldehydes and alkoxyamines by using hydrosilanes as the hydride sources and $B(C_6F_5)_3$ as catalyst without cleavage of the N—O bond. Mechanism study has shown that a transformation of the intermediate oximes $ArCH=NOR$ to the “ammonium borates” $[ArCH=NHOR]^+[X-B(C_6F_5)_3]^-$ ($X=Cl, OH$) may take place in the reaction system, while the latter can be converted into the well-known active intermediate “ammonium hydroborates” $[ArCH=NHOR]^+[H-B(C_6F_5)_3]^-$ to reduce the C=N bond under mild condition in the presence of hydrosilanes.

He, Yunqing; Teng, Jinwei; Tian, Chong; Borzov Maxim; Hu, Qishan; Nie, Wanli*

Acta Chim. Sinica **2018**, 76(10), 774-778

Article

Synthesis and Photophysical Studies of Naphthalene Diimide-based [3]Rotaxanes

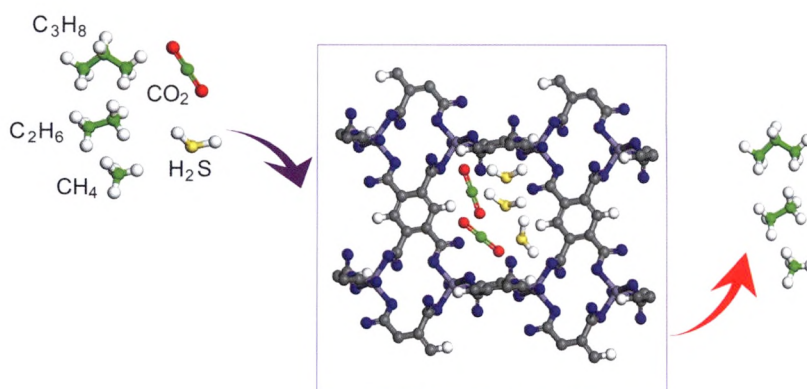


Sun, Cai-Li; Teng, Kun-Xu; Niu, Li-Ya; Chen, Yu-Zhe*; Yang, Qing-Zheng*

Acta Chim. Sinica **2018**, 76(10), 779-784

The synthesis and photophysics of two pillararene-based rotaxanes ([3]R and [3]R') incorporating naphthalene diimide which show intense red fluorescence in solid state were reported.

High-Throughput Screening of Metal-Organic Frameworks for the Separation of Hydrogen Sulfide and Carbon Dioxide from Natural Gas

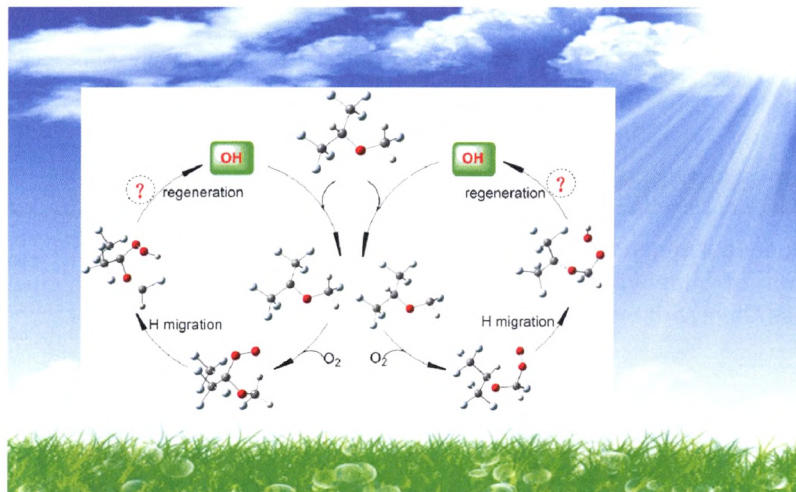


Yang, Wenyuan; Liang, Hong; Qiao, Zhiwei*

Acta Chim. Sinica **2018**, 76(10), 785-792

A computational study is reported to screen metal-organic frameworks for H_2S and CO_2 separation from natural gas.

Theoretical Investigations on the Mechanisms for the Reactions of Sevoflurane Radicals $[(\text{CF}_3)_2\text{C}(\bullet)\text{OCH}_2\text{F}$, $(\text{CF}_3)_2\text{CHOC}(\bullet)\text{HF}]$ with O_2 and the $\text{OH}\bullet$ Radicals Regeneration



Wu, Weirong; Yuan, Xiaomin; Hou, Hua; Wang, Baoshan*

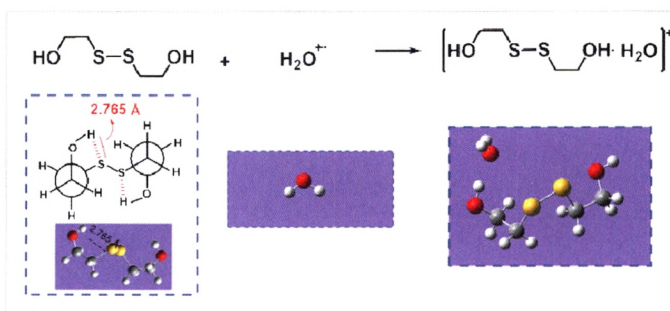
Acta Chim. Sinica **2018**, 76(10), 793-801

Atmospheric degradation of sevoflurane, a potent green-house gas, produces two radical species, namely, $(\text{CF}_3)_2\text{C}(\bullet)\text{OCH}_2\text{F}$ and $(\text{CF}_3)_2\text{CHOC}(\bullet)\text{HF}$, with different reactivity. Mechanisms for the reactions of the two radicals with dioxygen (O_2) and OH -recycling reaction have been investigated at the M06-2X/6-311++G(d,p) and CBS-Q levels of theory.

Study on the Interaction Between Water Radical Cations and Bis(2-hydroxyethyl) Disulfide at Ambient Temperature and Pressure Using Mass Spectrometry

Gao, Xiao-Fei*; He, Peng; Chen, Huanwen*

Acta Chim. Sinica **2018**, 76(10), 802-806

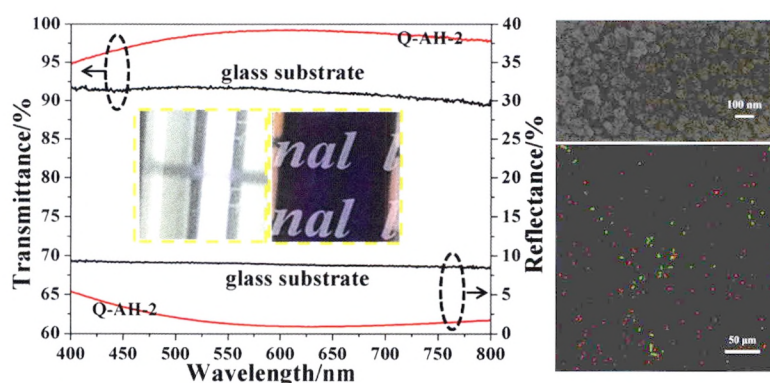


Thermodynamic theoretical calculation results demonstrated that H on the β -hydroxyl group of HEDS structure forms a weak hydrogen bond with S in the form of an intramolecular five-membered ring. During the interaction process, $(\text{H}_2\text{O})_n^{+\bullet}$ preferentially binds to the hydroxyl group of HEDS, forming a radical complex $(\text{M} + \text{H}_2\text{O})^{+\bullet}$, whose disulfide bond will be difficult to be cleaved. In conclusion, the β -hydroxyl group has a protective effect on the disulfide bond of HEDS during the interaction with water radical cations.

Fabrication and Study of Antibacterial/Antireflective Dual-functional Thin Films from Quaternary Ammonium Salt Modified Hollow Silica Nanospheres

Wang, Kaikai; He, Junhui*

Acta Chim. Sinica **2018**, 76(10), 807-812



Antibacterial/antireflective dual-functional thin films were fabricated via dip-coating from quaternary ammonium salt modified hollow silica nanospheres sols. The optical properties of thin films were optimized by regulating the composition of sols. The optimal thin film coated glass substrate presented high transmittance ($T_{\text{max}} = 99.2\%$, $T_{\text{ave}} = 98.6\%$) in the visible range of 400~800 nm. This method is simple and easy for large-area coating without any high-temperature heat treatment.

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