



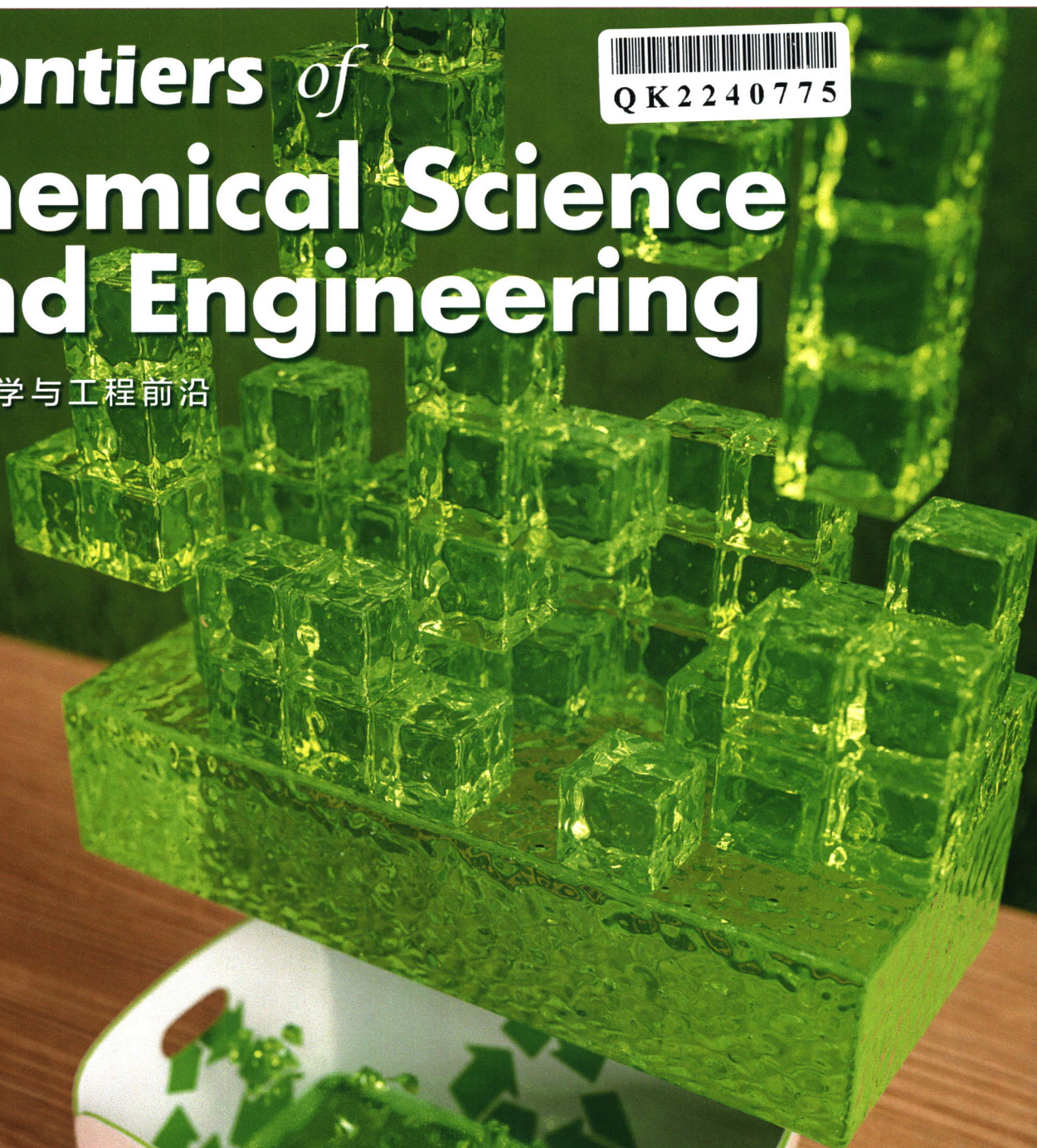
Engineering
Transactions of CAE



ISSN 2095-0179
Volume 16 · Number 9
September 2022

Frontiers of Chemical Science and Engineering

化学科学与工程前沿



Higher Education Press



Springer

万方数据

REVIEW ARTICLE

- 1291** Carbon capture for decarbonisation of energy-intensive industries: a comparative review of techno-economic feasibility of solid looping cycles

Mónica P. S. Santos, Dawid P. Hanak

- 1318** Sustainable functionalization and modification of materials via multicomponent reactions in water

Siamak Javanbakht, Tahereh Nasiriani, Hassan Farhid, Mohammad Taghi Nazeri, Ahmad Shaabani

RESEARCH ARTICLE

- 1345** Tuning porosity of coal-derived activated carbons for CO₂ adsorption

Zhipeng Qie, Lijie Wang, Fei Sun, Huan Xiang, Hua Wang, Jihui Gao, Guangbo Zhao, Xiaolei Fan

- 1355** Anticorrosive composite self-healing coating enabled by solar irradiation

Zhentao Hao, Si Chen, Zhifeng Lin, Weihua Li

- 1367** Metal phosphonate-derived cobalt/nickel phosphide@N-doped carbon hybrids as efficient bifunctional oxygen electrodes for Zn-air batteries

Cai-Yue Wang, Meng-Qi Gao, Cheng-Cai Zhao, Li-Min Zhao, Hui Zhao

1291

Calcium looping is an emerging technology that can reduce the cost of industrial decarbonisation

1318

Sustainable functionalization and modification of materials

1345

1355

1367

1377 Biodegradable, superhydrophobic walnut wood membrane for the separation of oil/water mixtures
Tong Xing, Changqing Dong, Xiaodong Wang, Xiaoying Hu, Changrui Liu, Haiyang Lv

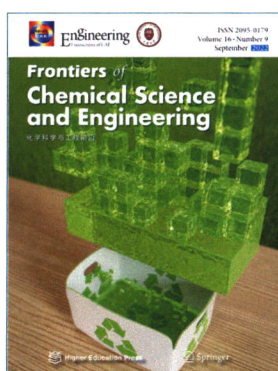
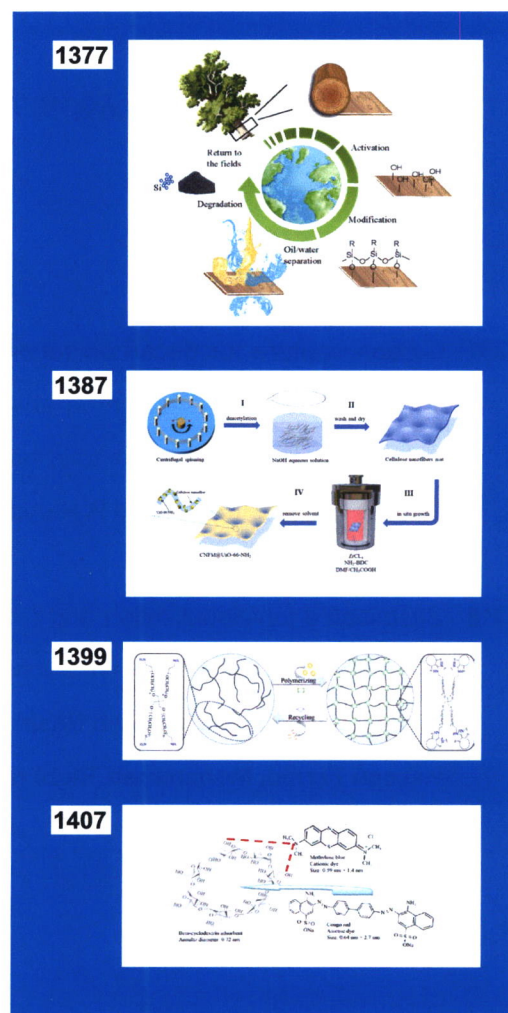
1387 Integrating of metal-organic framework UiO-66-NH₂ and cellulose nanofibers mat for high-performance adsorption of dye rose bengal
Yuyao Han, Lei Xia, Xupin Zhuang, Yuxia Liang

COMMUNICATION

1399 Chemically triggered life control of “smart” hydrogels through click and declick reactions
Xing Feng, Meiqing Du, Hongbei Wei, Xiaoxiao Ruan, Tao Fu, Jie Zhang, Xiaolong Sun

VIEWS & COMMENTS

1407 Beta-cyclodextrin adsorbents to remove water pollutants—a commentary
Fadina Amran, Muhammad Abbas Ahmad Zaini



COVER

In this work, it was reported new hydrogel soft material, which can realize the recovery of raw materials and the regeneration of new hydrogels. Conjugated acceptors containing bismethylthiol esters were employed as hydrogel crosslinkers to be substituted by amine derivatives. Four-arm PEG amine was utilized to react with the representative CAs to prepare highly cross-linked polymers. These materials were characterized by their structure, morphology and mechanical properties. These materials can be triggered by ethylenediamine to degrade completely within hours. The original reactant four-arm PEG amine was recovered, and regenerated the hydrogel using the recovered raw material. This innovative recycled polymer demonstrates the potential application of the new material in terms of manufacturing cost savings and material sustainability. (Xing Feng, Meiqing Du, Hongbei Wei, Xiaoxiao Ruan, Tao Fu, Jie Zhang, Xiaolong Sun, pp. 1399–1406)

Frontiers *of* Chemical Science and Engineering

Vol. 16 No. 9 September 2022

Available online
<http://www.springerlink.com>

CN 11-5981/TQ
邮发代号: **80-969**

ISSN 2095-0179

