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IN THIS ISSUE

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Cover
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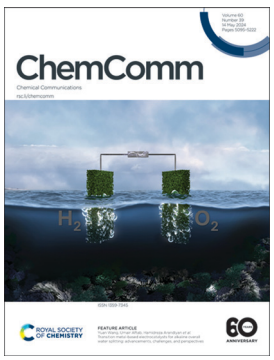


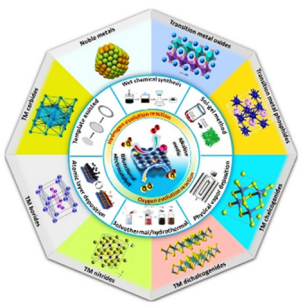
Inside cover
See Yuan Wang, Umair Aftab, Hamidreza Arandiyan *et al.*, pp. 5104–5135. Image reproduced by permission of Yuan Wang from *Chem. Commun.*, 2024, **60**, 5104.

FEATURE ARTICLES

5104

Transition metal-based electrocatalysts for alkaline overall water splitting: advancements, challenges, and perspectives

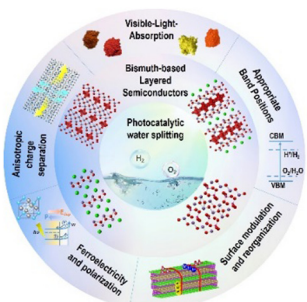
Muhammad Nazim Lakhan, Abdul Hanan, Altaf Hussain, Irfan Ali Soomro, Yuan Wang,* Mukhtiar Ahmed, Umair Aftab,* Hongyu Sun and Hamidreza Arandiyan*



5136

Advances in the structural engineering of layered bismuth-based semiconductors for visible light-driven photocatalytic water splitting

Xiaoping Tao, Xiaoyuan Zhou and Rengui Li*



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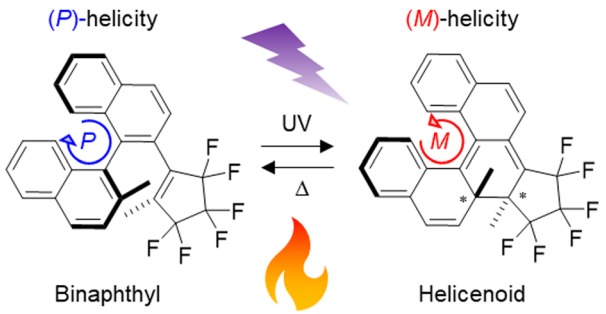
5149

A chiral photoswitch based on enantiospecific interconversion between binaphthyl and helicenoid skeletons

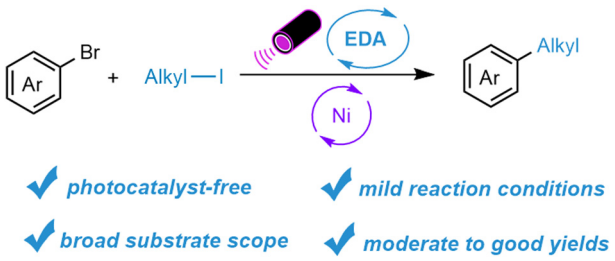
Tetsuya Nakagawa, Ryuji Kato, Yuichi Iiyoshi, Masaki Furuya, Tomoki Kitano, Ryo Nakamura, Yasushi Yokoyama and Takashi Ubukata*



5153

Nickel-catalyzed C(sp^2)–C(sp^3) coupling *via* photoactive electron donor–acceptor complexes

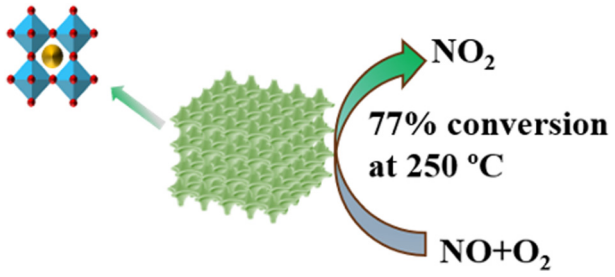
Salman Alsharif, Chen Zhu, Xiushan Liu, Shao-Chi Lee, Huifeng Yue* and Magnus Rueping*



5157

Three-dimensional ordered macroporous $LaFe_{1-x}Mn_xO_3$ with high stability for efficient NO oxidation and sulfur resistance

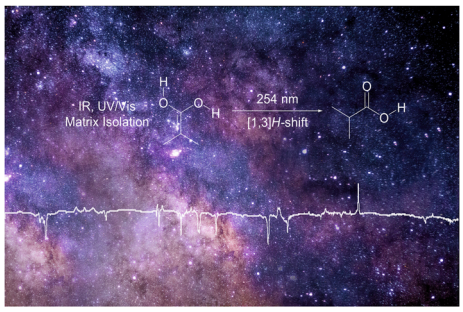
Shengjie Zuo, Ping Wang, Miao He, Jiasai Yao, Haocheng Li, Jing Xiong, Xiaohua Sun,* Yuechang Wei* and Zhenxing Li*



5161

The enol of isobutyric acid

Akkad Danho, Artur Mardyukov and Peter R. Schreiner*



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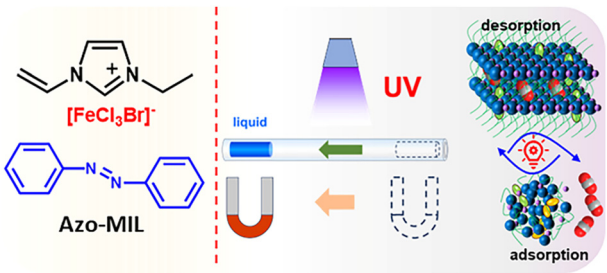
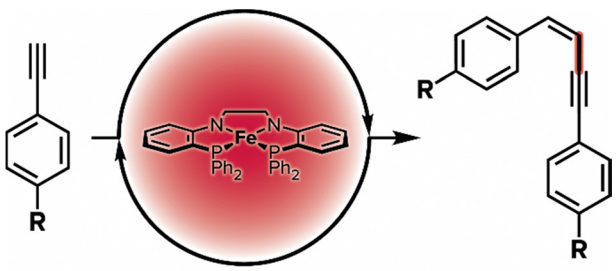
5165



Magnetic ionic crystals with light controllable mobility and CO_2 physisorption/desorption

Yifan Ge, Shuai Tan, Yong Wu and Caihong Wang*

5169



***Z*-selective dimerization of terminal alkynes by a (PNNP)Fe^{II} complex**

Jeremiah E. Stevens, Justin D. Miller, Matthew C. Fitzsimmons, Curtis E. Moore and Christine M. Thomas*

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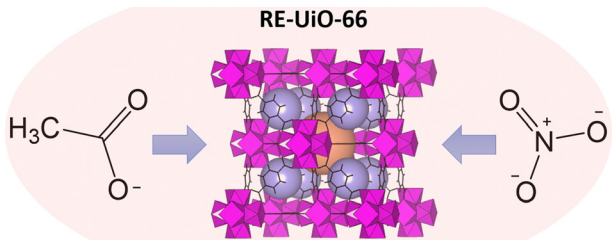

Rare-earth acetates as alternative precursors for rare-earth cluster-based metal–organic frameworks

Micaela Richezzi, P. Rafael Donnarumma, Christopher Copeman and Ashlee J. Howarth*

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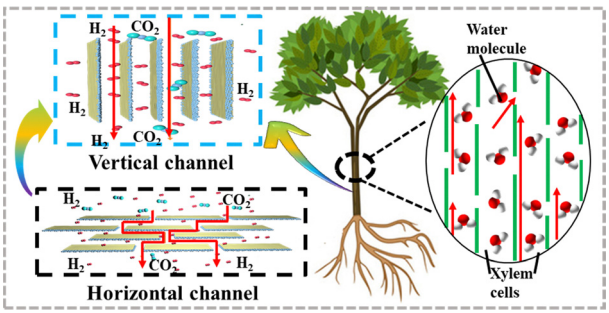

A vertically-stacked MXene/rGO composite membrane for highly efficient H_2/CO_2 separation

Zhaorui Dong, Yiyi Fan, Xiuxia Meng,* Yun Jin, Jian Song, Xiaobin Wang, Naitao Yang,* Jaka Sunarso* and Shaomin Liu

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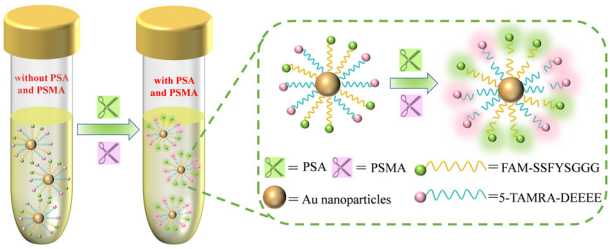
Precise prostate cancer diagnosis using fluorescent nanoprobes for detecting PSA and PSMA in serum

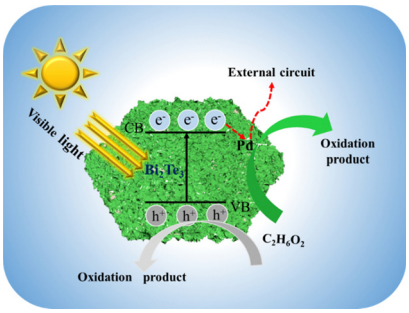
Mingyi Ouyang, Ming Jia, Zixuan Chang, Yinian Wang, Keyi Wang, Xiaonan Gao* and Bo Tang*



5185

Bi_2Te_3 nanosheets promoted Pd for ethylene glycol electrooxidation both in the dark and under visible light irradiation

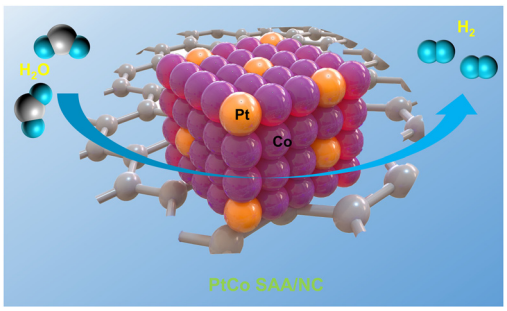
Fangfang Ren, Zhenghao Fei, Yun Yang,* Shuli Wang and Ligang Feng*



5189

A nitrogen-doped carbon nanosheet composited platinum–cobalt single atom alloy catalyst for effective hydrogen evolution reaction

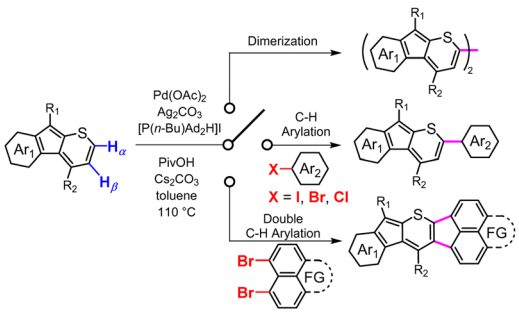
Xudong Niu, Huilong Geng, Zhengyu Lv, Jian Wei,* Dongyao Xu* and Wenxing Chen*



5193

C–H arylation of thiopyran derivatives with aryl halides

Yangzhe Su, Min Wang, Jianping Xu, Weinan Chen and Gang Zhou*



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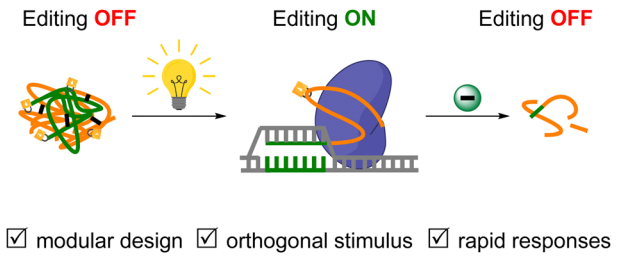
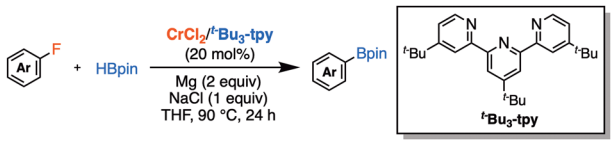


Chemical control of CRISPR/Cpf1 editing *via* orthogonal activation and deactivation of crosslinked crRNA

Cui-Lian Lin, Wen-Da Chen, Li Liu and Liang Cheng*

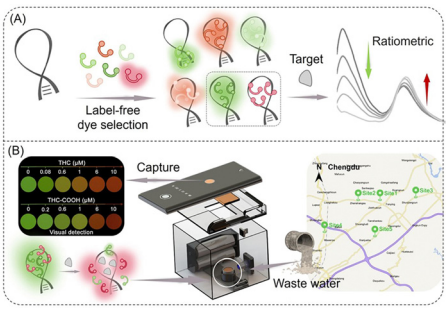
5201



Cr-catalyzed borylation of C(aryl)–F bonds using a terpyridine ligand

Senlin Liu, Zheng Luo, Shuaiyong Zhao, Meiming Luo* and Xiaoming Zeng*

5205



A simple aptamer-dye fluorescence sensor for detecting Δ9-tetrahydrocannabinol and its metabolite in urban sewage

Yingnan Wei, Lin Yang, Yi Ye, Linchuan Liao, Hao Dai, Zeliang Wei, Yao Lin* and Chengbin Zheng*

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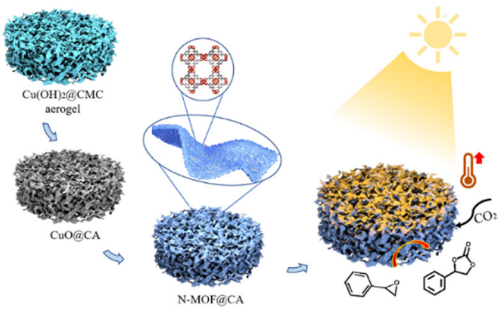

A MOF nanoparticle@carbon aerogel integrated photothermal catalytic microreactor for CO_2 utilization

Junyi Chen,* Lei Shao, Bing Zhang, Weiliang Tian, Yu Fu and Liying Zhang*

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COMMUNICATIONS

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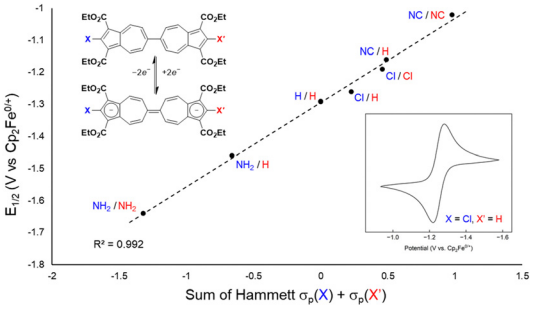
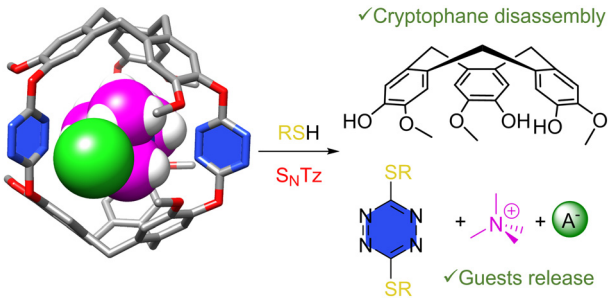
Tuning the redox profile of the 6,6′-biazulenic platform through functionalization along its molecular axis

Shaun R. Kelsey, Georgii Griaznov, Andrew D. Spaeth, Daron E. Janzen, Justin T. Douglas, Ward H. Thompson and Mikhail V. Barybin*



5217

Self-assembled tetrazine cryptophane for ion pair recognition and guest release by cage disassembly

Louise Miton, Elise Antonetti, Marie Poujade, Jean-Pierre Dutasta, Paola Nava, Alexandre Martinez* and Yoann Cotelle*