Journal of Materials Chemistry A

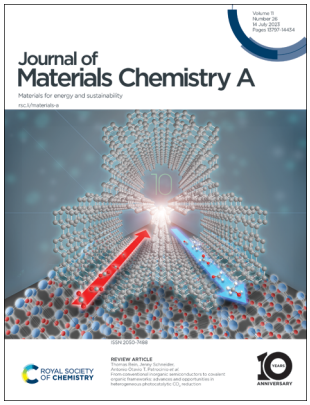
Materials for energy and sustainability

rsc.li/materials-a

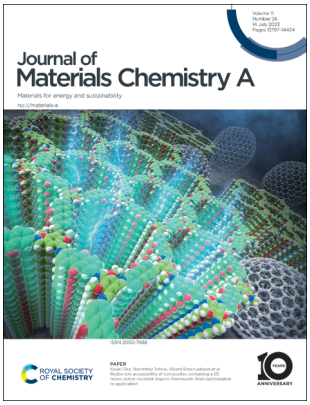
The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

IN THIS ISSUE

ISSN 2050-7488 CODEN JMCAET 11(26) 13797–14434 (2023)

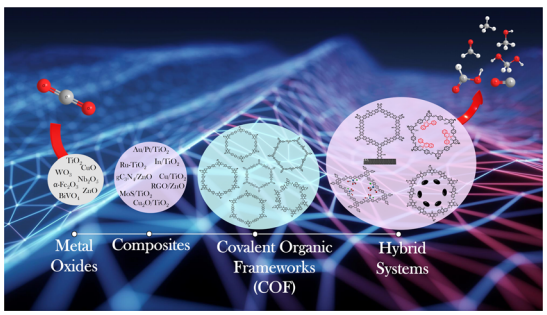


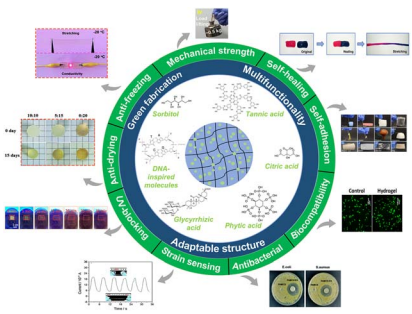
Cover
See Thomas Bein, Jenny Schneider, Antonio Otavio T. Patrocinio *et al.*, pp. 13815–13843. Image reproduced by permission of Antonio Otavio de Toledo Patrocinio from *J. Mater. Chem. A*, 2023, **11**, 13815.



Inside cover
See Kouki Oka, Norimitsu Tohnai, Rikard Emanuelsson *et al.*, pp. 13923–13931. Image reproduced by permission of Kouki Oka from *J. Mater. Chem. A*, 2023, **11**, 13923.

REVIEWS





Journal of Materials Chemistry A (electronic: ISSN 2050-7496) is published 48 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, UK CB4 0WF.

All orders, with cheques made payable to the Royal Society of Chemistry, should be sent to the Royal Society of Chemistry Order Department, Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, CB4 0WF, UK
Tel +44 (0)1223 432398; E-mail **orders@rsc.org**

2023 Annual (electronic) subscription price: £1968, $4085. Customers in Canada will be subject to a surcharge to cover GST. Customers in the EU subscribing to the electronic version only will be charged VAT.

If you take an institutional subscription to any Royal Society of Chemistry journal you are entitled to free, site-wide web access to that journal. You can arrange access via Internet Protocol (IP) address at www.rsc.org/ip

Customers should make payments by cheque in sterling payable on a UK clearing bank or in US dollars payable on a US clearing bank.

Journal of Materials Chemistry A

rsc.li/materials-a

Journal of Materials Chemistry A, B & C cover high quality studies across all fields of materials chemistry. The journals focus on those theoretical or experimental studies that report new understanding, applications, properties and synthesis of materials. *Journal of Materials Chemistry A* covers materials with applications in energy & sustainability.

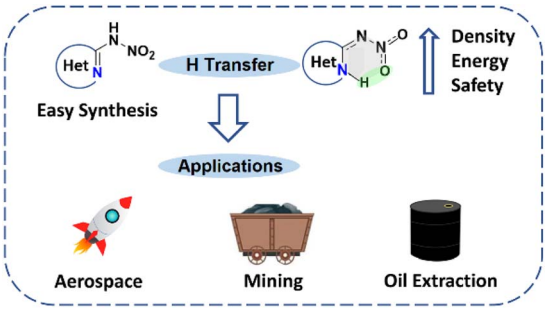
Information for Authors

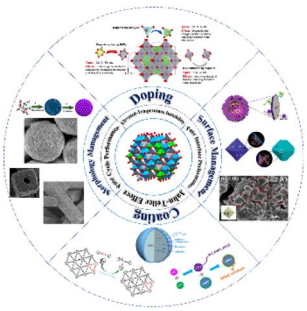
Full details on how to submit material for publication in Journal of Materials Chemistry A are given in the Instructions for Authors (available from **http://www.rsc.org/authors**). Submissions should be made via the journal's homepage: **rsc.li/materials-a.** Submissions: The journal welcomes submissions of manuscripts for publication as Full Papers, Communications, Reviews, Highlights and Applications. Full Papers and Communications should describe original work of high quality and impact which must highlight the novel properties or applications (or potential properties/applications) of the materials studied.

Additional details are available from the Editorial Office or **http://www.rsc.org/authors**

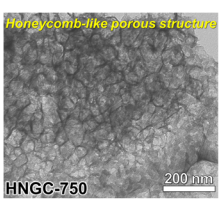
ROYAL SOCIETY OF CHEMISTRY

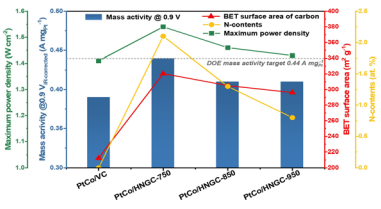
REVIEWS



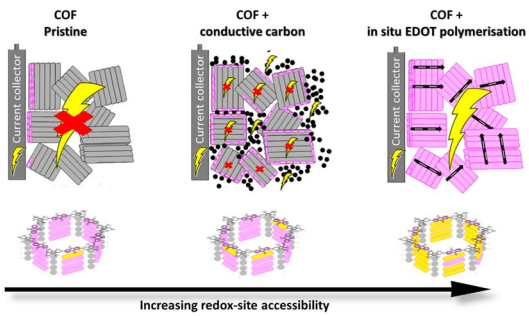


COMMUNICATION





PAPERS

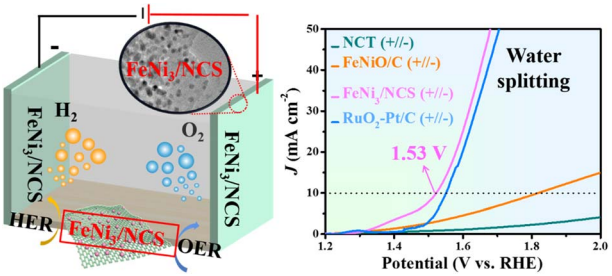


PAPERS

PAPERS

PAPERS

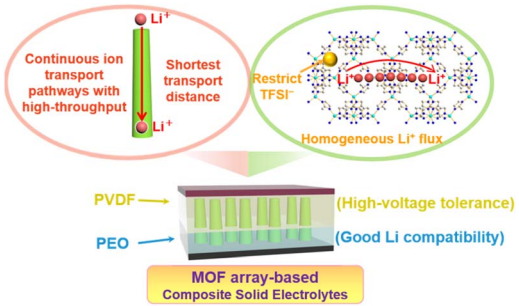
14015



Low-temperature pyrolysis enables $FeNi_3$ nanoparticle implanted N-doped carbon nanosheets as an efficient bifunctional electrocatalyst for overall water splitting

Rong Xin, Yijiang Liu,* Xuxin Li, Shicheng Yi, Mingyue Zhang, Hongbiao Chen, Huaming Li and Zhiqun Lin*

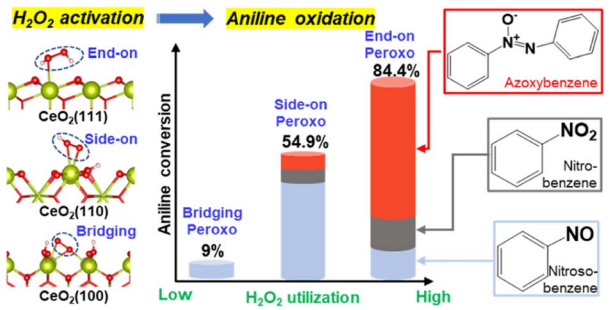
14025



A MOF vertical array enables continuous ion transport pathways with high throughput

Shuxian Wang, Zhongliang Li, Fangying Shen, Zhiqin Ruan, Yutong Huang, Yang Liu, Yan Liu, Luyi Chen,* Ya-Qian Lan* and Qifeng Zheng*

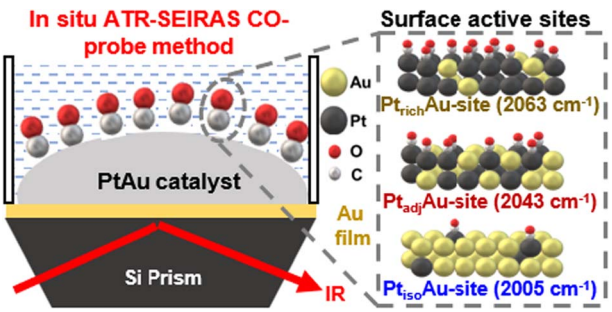
14034



Facet-dependent peroxo species regulate product distribution and H_2O_2 utilization in CeO_2-catalyzed aniline oxidation

Linyuan Tian, Yin-Song Liao, Jyh-Pin Chou,* Zicong Tan, Jian Lin Chen, Jung-Hoon Lee,* Tsz Woon Benedict Lo and Yung-Kang Peng*

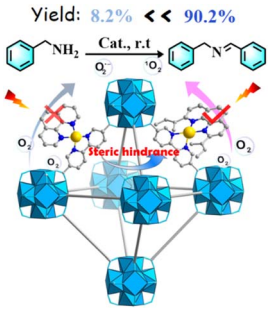
14043

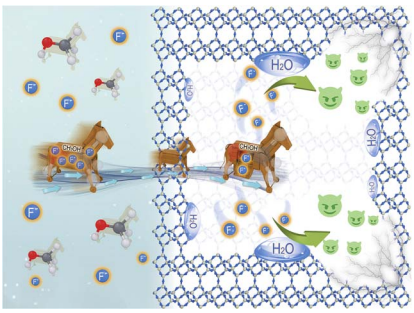


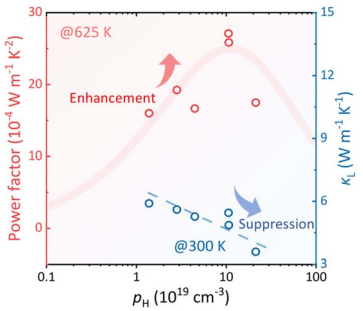
Revealing surface fine structure on PtAu catalysts by an *in situ* ATR-SEIRAS CO-probe method

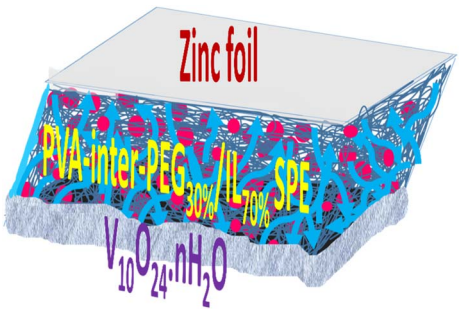
Guang Li, Zheng-Chao An, Jian Yang, Jin-Hong Zheng, Li-Fei Ji, Jun-Ming Zhang, Jin-Yu Ye,* Bin-Wei Zhang,* Yan-Xia Jiang* and Shi-Gang Sun

PAPERS



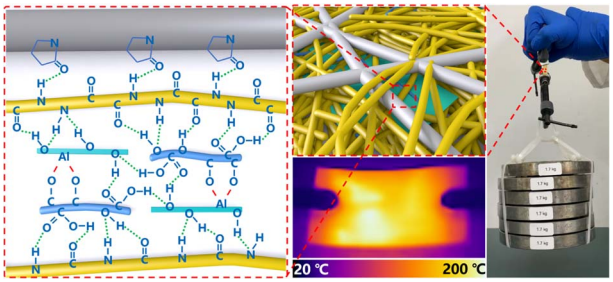


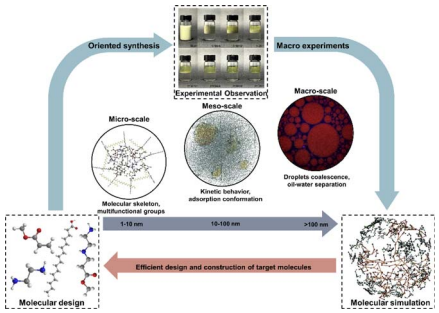


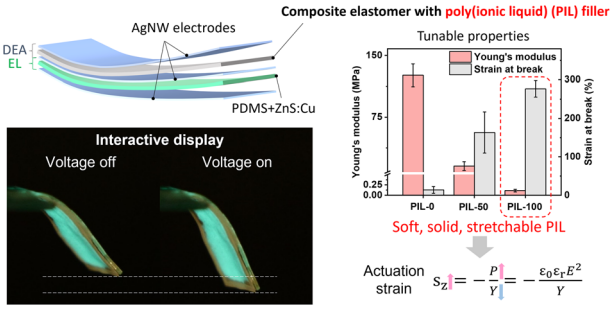


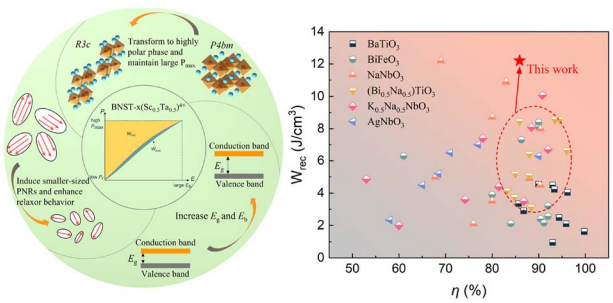
PAPERS

PAPERS



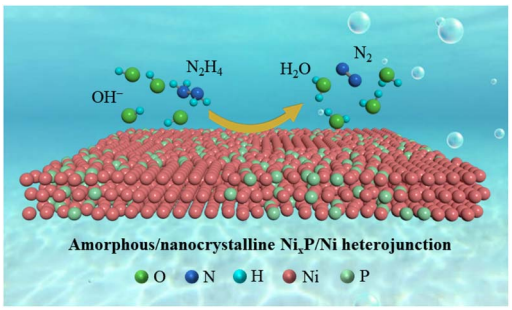


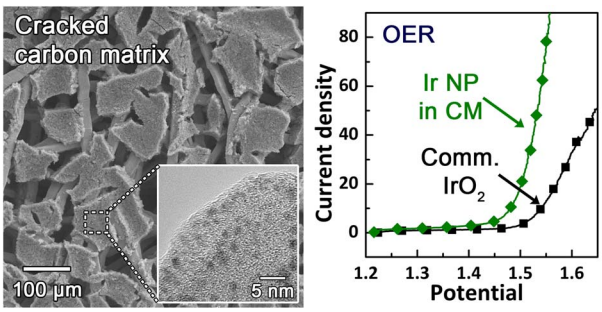


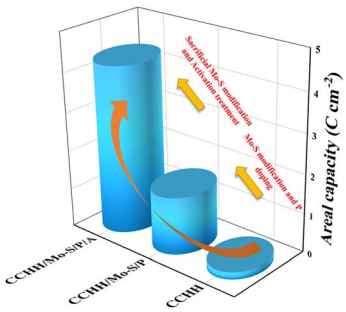


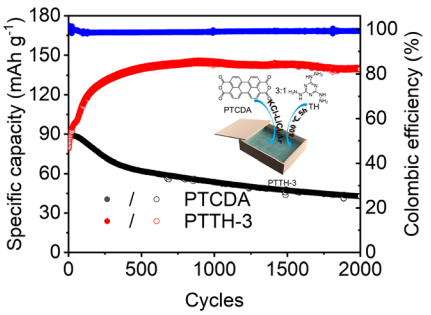
PAPERS

PAPERS



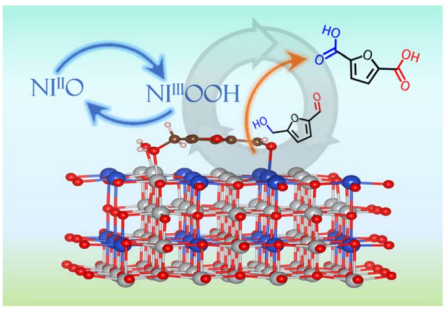


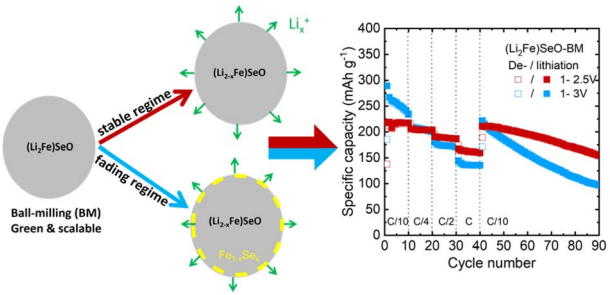


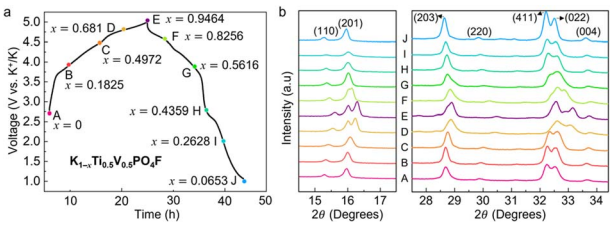


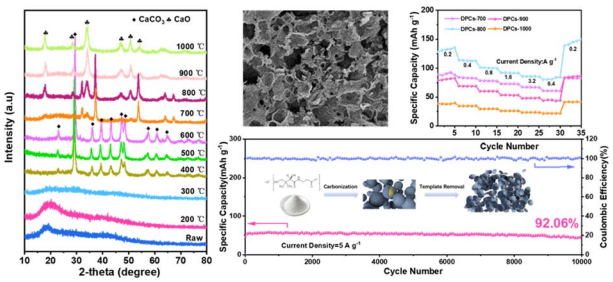
PAPERS

PAPERS



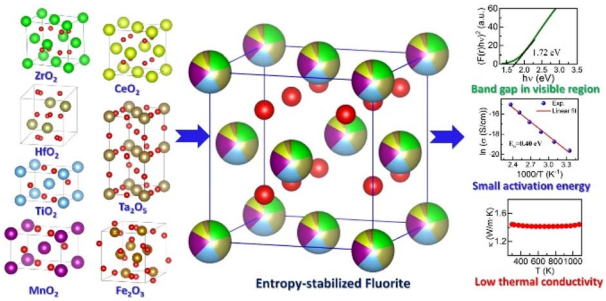






PAPERS

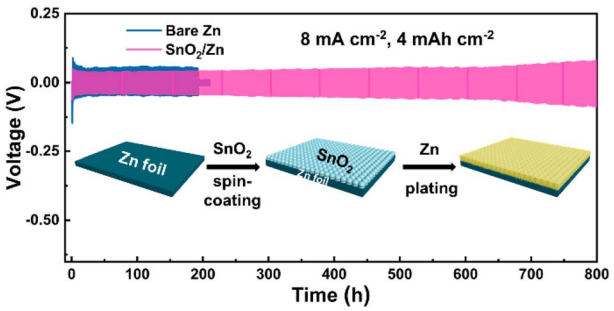
14320



Novel entropy-stabilized fluorite oxides with multifunctional properties

Ashutosh Kumar, David Bérardan, Francois Brisset, Diana Dragoe and Nita Dragoe*

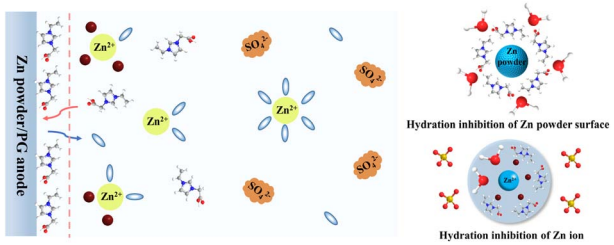
14333



Highly reversible, dendrite-free and low-polarization Zn metal anodes enabled by a thin SnO_2 layer for aqueous Zn-ion batteries

Yuejuan Zhang, Penghui Chen, Mingming Li, Shaoqing Li, Ying Yue, Yanchun Wang, Sishen Xie and Weiya Zhou*

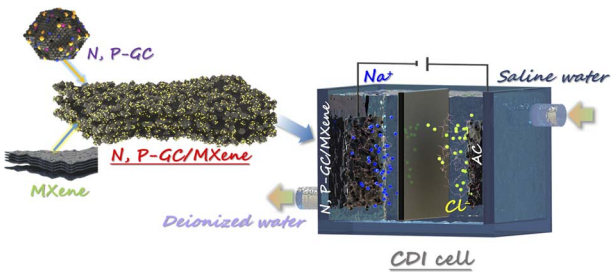
14345



Designing multidimensional hydration inhibitor towards the long cycling performance of zinc powder anode

Chuheng Cao, Wencheng Du,* Cheng Chao Li,* Minghui Ye, Yufei Zhang, Yongchao Tang and Xiaoqing Liu

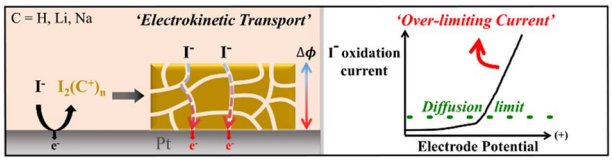
14356

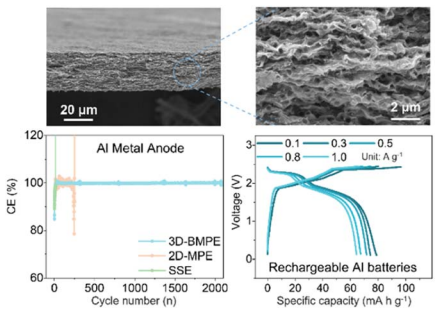


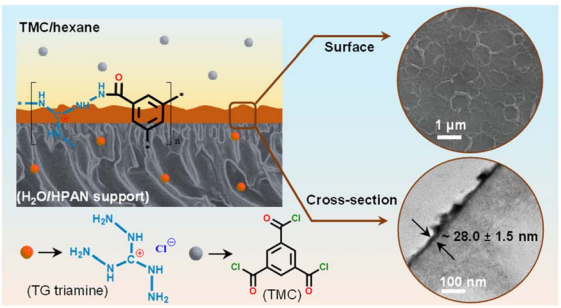
Core–shell 2D nanoarchitectures: engineering N, P-doped graphitic carbon/MXene heterostructures for superior capacitive deionization

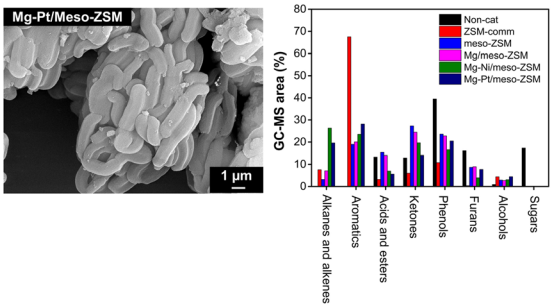
Ying Zhang, Haolin Li, Qian Yang, Shuaihua Zhang,* Bin Zhao, Jingyu Wu, Ningzhao Shang, Xiaoxian Zhao, Zhichang Xiao, Xiaohuan Zang, Jeonghun Kim, Xingtao Xu* and Yusuke Yamauchi*

PAPERS

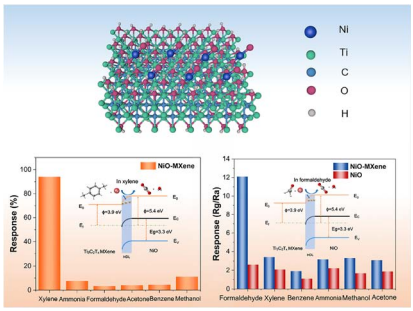






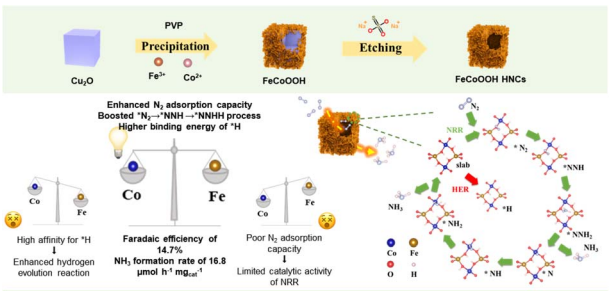


PAPERS



In situ fabrication of a NiO nanoparticles/single-layered MXene nanosheet Schottky heterojunction toward sensing xylene and formaldehyde

Xueying Song, Kuikun Gu, Qinwei Zhang, Linhu Jin, Chunfeng He* and Mingzhe Zhang*



Unveiling the role of cobalt doping in optimizing ammonia electrosynthesis on iron–cobalt oxyhydroxide hollow nanocages

Xinxin Han, Cheng Liu, Yuan Tang, Qiangguo Meng, Weizhen Zhou, Shixia Chen,* Shuguang Deng and Jun Wang*