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ISSN 1359–7345 CODEN CHCOFS 61(13) 2591–2828 (2025)



Cover

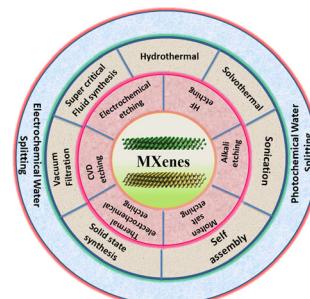
See Peng Cui and Hanyu Zhang,
pp. 2742–2745.
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Peng Cui from
Chem. Commun.,
2025, **61**, 2742.

HIGHLIGHTS

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A brief review on the progress of MXene-based catalysts for electro- and photochemical water splitting for hydrogen generation

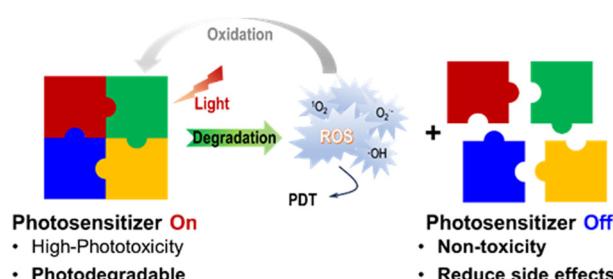
Manzoor Ahmad Pandit, Jingwei Yuan, Roshan Nazir, Yubing Dong and Qianqian Li*



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Photodynamic therapy with photodegradable photosensitizers

Haorui Wu, Youjian Zhang, Lifen Jiang and Huaiyi Huang*



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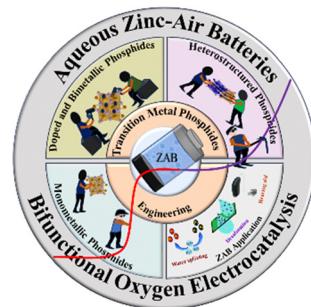
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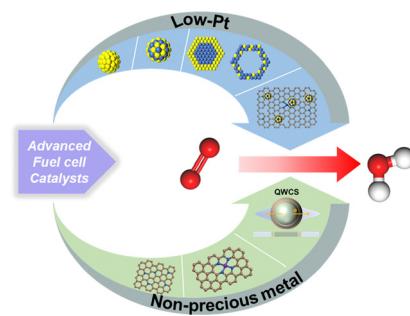
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FEATURE ARTICLES

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Transition metal phosphide-based oxygen electrocatalysts for aqueous zinc–air batteriesSantanu Ghora, Rishika Chakraborty, Saheb Bag,
Mopidevi Manikanta Kumar and C. Retna Raj*

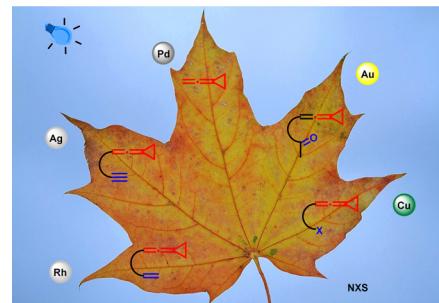
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Innovative strategies for designing and constructing efficient fuel cell electrocatalystsChengming Huang, Fangzheng Wang, Xia Chen, Jing Li,*
Minhua Shao* and Zidong Wei*

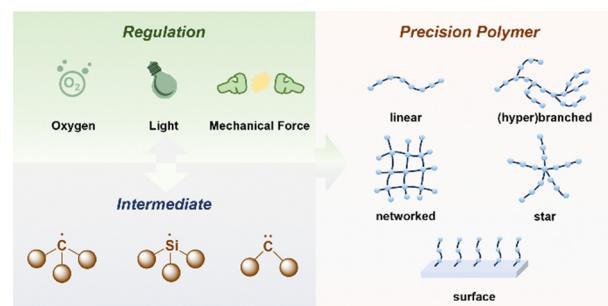
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Recent transformations of vinylidene cyclopropanes (VDCPs)

Sheng-Hao Jiang, Yin Wei* and Min Shi*

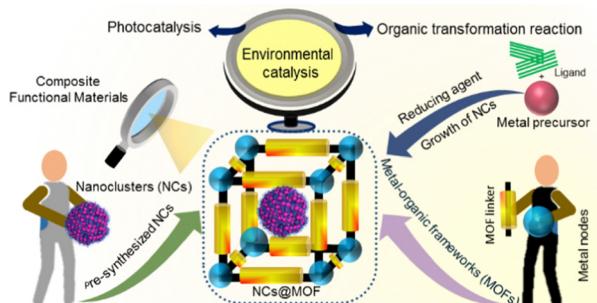


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Oxygen, light, and mechanical force mediated radical polymerization toward precision polymer synthesisZhujun Huang, Jin Dong, Kaiwen Liu and
Xiangcheng Pan*

FEATURE ARTICLES

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Rational design and synthesis of atomically precise nanocluster-based nanocomposites: a step towards environmental catalysis

Alok Kumar, Glory James, Ravari Kandy Aparna and Sukhendu Mandal*

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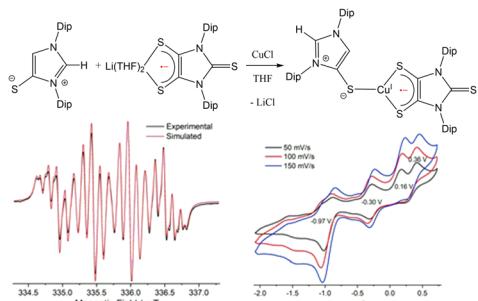
2742



A non-interpenetrated mesoporous hydrogen-bonded organic framework constructed with 1,3,5-tri(4-carboxyphenyl)benzene

Peng Cui* and Hanyu Zhang

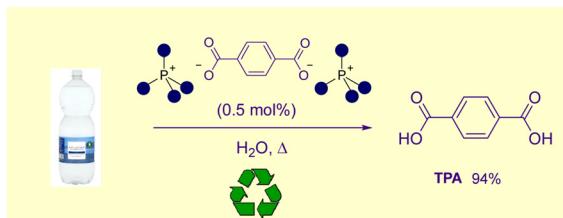
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Isolation and characterization of a blue coloured three coordinate Cu(I)-radical complex with an S₃ donor set

Sujit Das, Sonam Suthar, Maria Francis, Saurav Ghosh, Sangita Mondal, Sunil Kumar and Kartik Chandra Mondal*

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- Novel terephthalate catalyst
- Circumvents product inhibition
- No product contamination
- Lipophilicity readily tunable and is a key driver of catalyst activity
- Active at low loadings

Neutral hydrolysis of poly(ethylene terephthalate) catalysed by highly active terephthalate-based ionic liquids at low loadings

Ian L. Martin, Lee B. Anderson, Deirdre A. McAdams, Conall Molloy, Peter W. Dunne and Stephen J. Connolly*

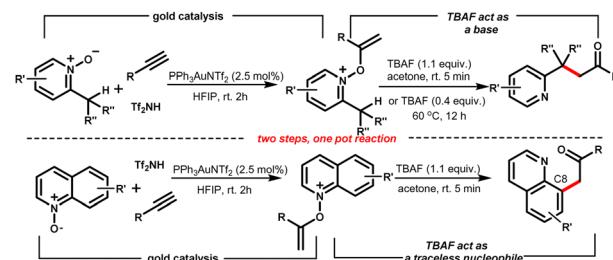


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A sequential Au(i)/TBAF-promoted rapid and selective functionalization of heteroarene N-oxides with alkynes

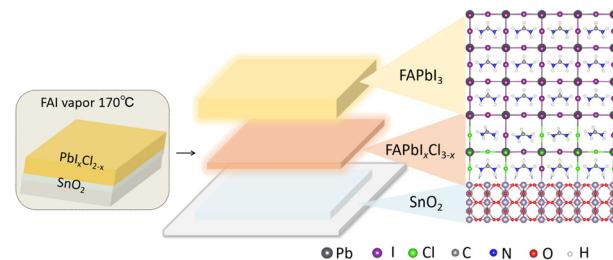
Mengfei Jiang, Hui long Zhu, Lei Huang, Du Luo, Heping Shi, Zhou Xu* and Nan Wu*



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Enhancing open-circuit voltage in FAPbI_3 perovskite solar cells via self-formation of coherent buried interface $\text{FAPbI}_x\text{Cl}_{3-x}$

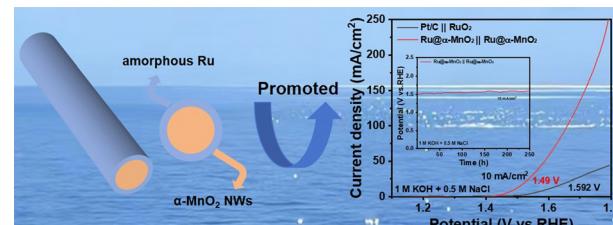
Cuina Gao, Sihui Jia, Xiaofei Yin, Zhi Li, Guang Yang, Jing Chen,* Zhaoqian Li* and Xingtao An*



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Ru@ MnO_2 core@shell nanowires as a bifunctional electrocatalyst for efficient solar-driven seawater splitting

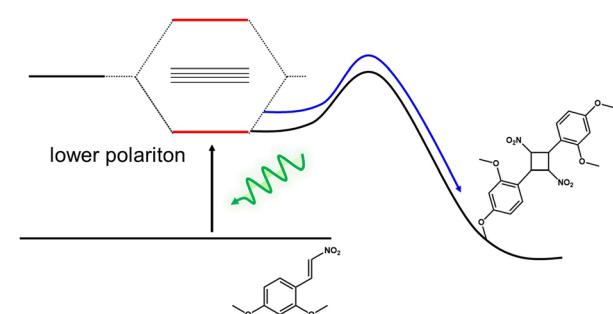
Na Li, Aitong Yang, Mengyuan Jin, Shun Wang, Ping Yu,* Juan Wang* and Huile Jin*



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Optical cavity enhancement of visible light-driven photochemical reaction in the crystalline state

Ikuto Sasaki, Kiyonori Takahashi, Farsai Taemaitree, Takayoshi Nakamura, James A. Hutchison, Hiroshi Uji-i and Kenji Hirai*



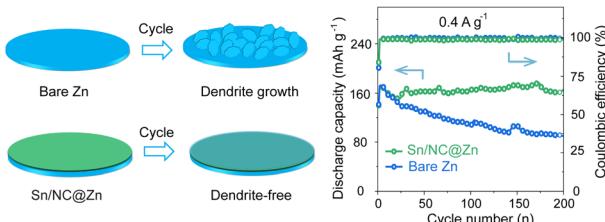
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**Metal-directed hierarchical superhelices from hybrid peptide foldamers**

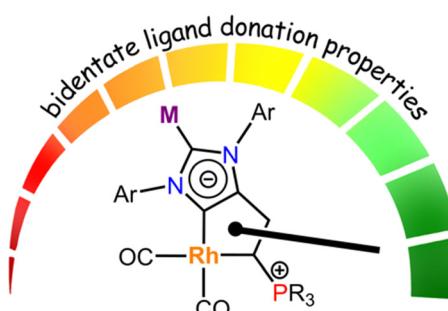
Sanjit Dey, Souvik Roy, DRGKoppalu R. Puneeth Kumar, Sachin A. Nalawade, Manjeet Singh, Sandip U. Toraskar, Souvik Panda Mahapatra and Hosahudya N. Gopi*

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**Dendrite-free Zn anode induced by Sn/NC towards highly efficient Zn-ion batteries**

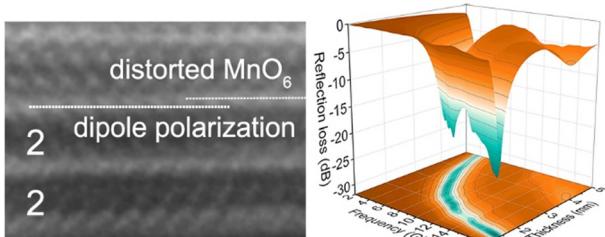
Mingyue Wang, Shuoshuo Ban, Nanzhe Li, Shengxiang Chen, Mingfu Ye, Jiannan Zhu,* Wenhai Wang* and Konglin Wu*

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**Pushing the limits of electron donation for *cis*-chelating ligands via an alliance of phosphonium ylide and anionic abnormal NHC**

Mustapha El Kadiri, Abdelhaq Cherradi, Oleg A. Filippov,* Carine Duhayon, Vincent César, Elena S. Shubina, Mohammed Lahcini,* Dmitry A. Valyaev* and Yves Canac*

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**Enhanced dielectric losses in α -MnO₂ via protonation modulation**

Tengchao Guo, Yuejun Feng, Bin Quan, Yuhang Zhuang,* Guomin Sun, Liang Xue, Lingzhe Fang* and Xiaohui Zhu*

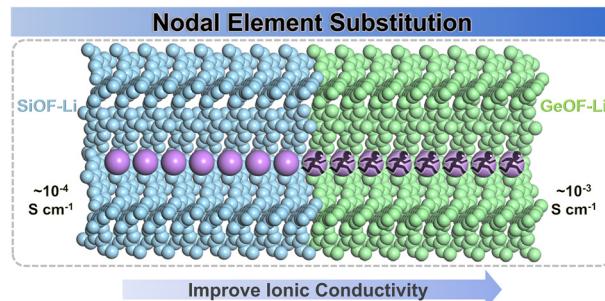


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The enhancement of Li-ion conductivity in 2D metalloid organic frameworks via nodal element substitution

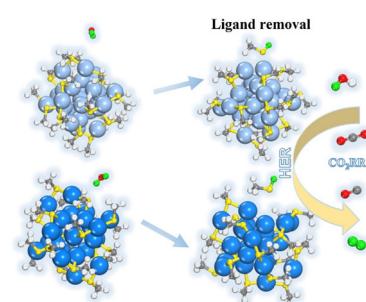
Lisha Liang, Yan Wang, Shumaila Ashraf and Pengfei Li*



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Understanding the Ag–S interface stability and electrocatalytic activity of CO₂ electroreduction in atomically precise Ag₂₅ nanoclusters

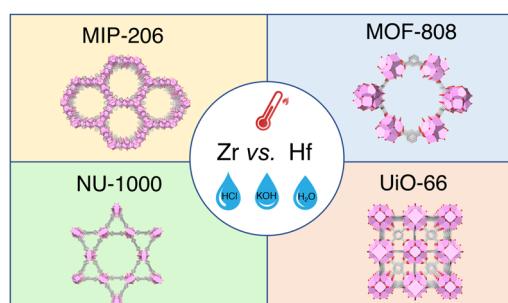
Yuting Ye, Xia Zhou, Yuping Chen, Likai Wang* and Qing Tang*



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Zirconium vs. hafnium: a comparative study of mesoporous MOF stability

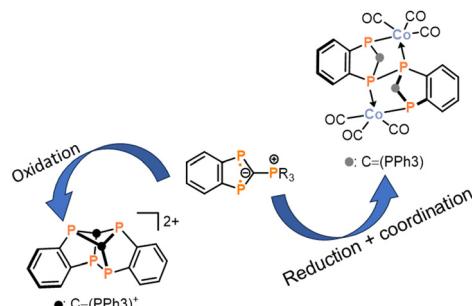
Orysia Zaremba, Subhajit Dutta, Jesus Requies, Jacopo Andreo and Stefan Wuttke*



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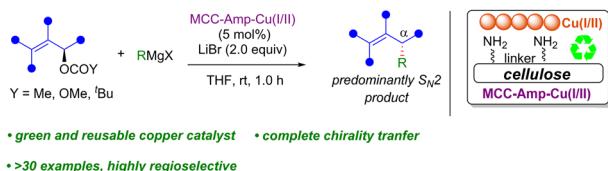
Redox-induced dimerisations of a phosphacyclic biradicaloid

David Zuber, Oksana Storcheva, Karsten Paul Lüdtke, Leonidas Brunk and Peter Coburger*



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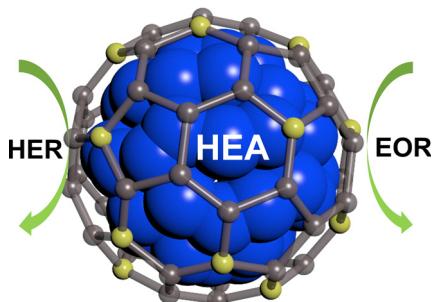
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Heterogeneous copper-catalyzed Grignard reactions with allylic substrates

Shobhan Mondal, Luca Deiana, Armando Córdova,* Haibo Wu* and Jan-E. Bäckvall*

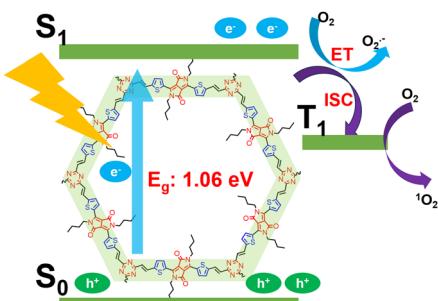
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Robust bifunctionality towards hydrogen evolution and ethanol oxidation reactions catalyzed by six-element high-entropy alloys

Yingjie Yu, Han Shi, Yuhua Xie, Yazhou Chen,* Chunsheng Li, Su Ma,* Yan Sun and Zehui Yang*

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A vinylene-linked diketopyrrolopyrrole-based covalent organic framework for photocatalytic oxidation reactions

Wei Zhao, Jing-Lan Kan, Chaowei Zhao,* Yuan Guo, Fan Yang* and Yu-Bin Dong

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High-performance anionic stereogenic-at-cobalt(III) complex/halide salts/oxone catalytic system for enantioselective halocyclization of olefins

Yi-Jun Fang, Xiao-Bao Wu, Qi-Ming Wang, Zu-Kui Xie, Chuan-Zhi Yao, Hua-Jie Jiang* and Jie Yu*

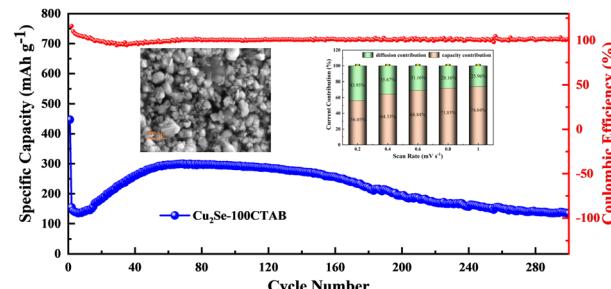


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Toward high-performance rechargeable magnesium batteries with a Cu₂Se-CTAB nanoparticle cathode and Mg[B(HFIP)₄]₂/DME electrolyte

Tengteng Zhang, Zihang Gao, Jiguang Zhang,* Rui Shi, Yana Liu, Jun Wang and Yunfeng Zhu



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Synthesis of fully fused tetrapyrazinoporphyrazine polymers bearing three-dimensional structures controlled by steric repulsion

Kosuke Watanabe, Teruki Toya, Yuto Toyota, Yoichi Kobayashi, Junichi Usuba, Yuh Hijikata, Ryotaro Matsuda, Katsuyuki Nishimura, Haruki Sugiyama and Yasutomo Segawa*

