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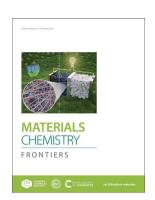
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ISSN 2052-1537 CODEN MCFAC5 7(21) 5031-5456 (2023)



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See Yuan Yuan Li, Kai Li et al., pp. 5377-5382. Image reproduced by permission of Kai Li from Mater. Chem. Front., 2023, **7**, 5377.



#### Inside cover

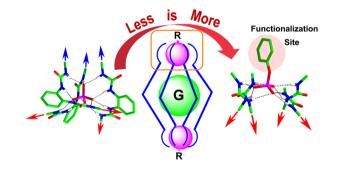
See S. Lanceros-Mendez, C. M. Costa et al., pp. 5046-5062. Image reproduced by permission of C. M. Costa from Mater. Chem. Front., 2023, 7, 5046.

#### **CHEMISTRY FRONTIERS**

# 5041

Less is more: from inorganic-phosphate to organophosphate directed anionocages

Xinsong Sheng, Ying Yang and Chuandong Jia\*

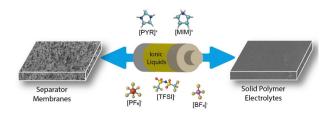


# **REVIEWS**

#### 5046

Ionic liquids in the scope of lithium-ion batteries: from current separator membranes to next generation sustainable solid polymer electrolytes

J. C. Barbosa, D. M. Correia, R. Gonçalves, V. de Zea Bermudez, S. Lanceros-Mendez\* and C. M. Costa\*



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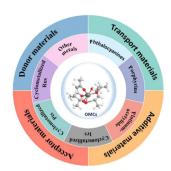
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# Recent progress in organic-metal complexes for organic photovoltaic applications

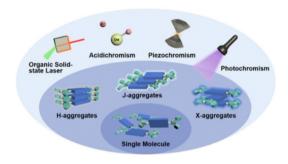
Qianglong Lv, Runnan Yu, Rui Shi and Zhan'ao Tan\*



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# Organic luminescent crystals: role of packing structures and optical properties

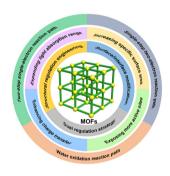
Yuxuan Song, Guocui Pan, Chenchen Zhang, Can Wang,\* Bin Xu\* and Wenjing Tian



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# Metal-organic frameworks for the photocatalytic oxygen reduction reaction to hydrogen peroxide

Xue-Yang Ji, Yao-Yao Wang and Jun Tao\*



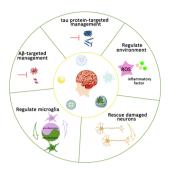
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# MOFs meet membrane: application in water treatment and separation

Wenyang Li, Piao Xu,\* Ziwei Wang, Yangzhuo He, Hong Qin, Ying Zeng, Yicheng Li, Zhengyan Zhang and Jing Gao



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## Recent advances in nanotechnology for combating Alzheimer's disease

Chuan Hu, Baoyu Wu, Yihan Wu, Mingyi Shi, Jiagi Ma, Huile Gao\* and Jinming Zhang\*

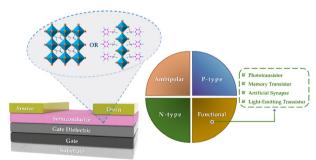
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# Recent advances in the rational design of alkaline OER catalysts: from electronic structures to industrial applications

Ansheng Wang, Wanying Wang, Jinchao Xu, Chunning Zhao, Meng Yu, Lijing Wang, Haijun Zhang, Xiaomeng Zhou,\* Xiaolei Bao\* and Weichao Wang\*

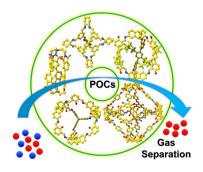
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# Organic-inorganic hybrid perovskite materials and their application in transistors

Yiran Liu, Yunqi Liu and Yunlong Guo\*

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# Porous organic cages for gas separations

Wenjing Wang, Kongzhao Su\* and Dagiang Yuan\*

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# Carbohydrate-macrocycle conjugates for biomedical applications

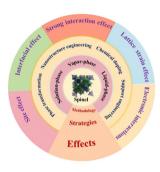
Fanggian Yin, Juan-Juan Li, Bingsen Shi, Kai Zhang, Xiao-Liu Li, Ke-Rang Wang\* and Dong-Sheng Guo\*



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# Synthesis and advantages of spinel-type composites

Zhiyu Shao, Xiaotian Wu, Xiaofeng Wu, Shouhua Feng and Keke Huang\*



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# Fabrication strategies for high quality halide perovskite films in solar cells

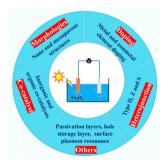
Xiangfan Xie, Shengqiao Zeng, Cangtao Zhou and Shuang Xiao\*



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Key modification strategies for the rational design of hematite to promote photoelectrochemical water oxidation: a review of recent advances

Chunlian Hu, Xiaohu Li, Congzhao Dong, Bonan Li, Xi Zhang, Wanjun Sun and Yong Ding\*



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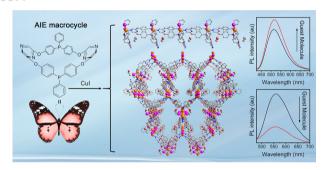


# The marriage of porous cages and metal clusters for advanced catalysis

Jun-Yu Li, Xiao-Dong Yang, Fu-Xue Chen and Jian-Ke Sun\*

#### **RESEARCH ARTICLES**

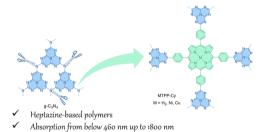
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# AIE macrocyclic molecule-based assembled materials with opposite solvent-responsive properties

Qing He Pan, Yuan Yuan Liu, Yuan Yuan Li,\* Xin Zhang, Qiu Chen Peng, Ya Jing Li and Kai Li\*

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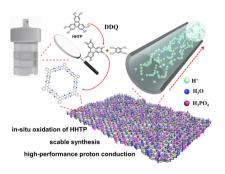


The photooxidation of 1,4-DHP enhanced up to 33 times Efficient oxidation of 1,4-DHP can be achieved even in darkness

# NIR-II light-response porphyrin-heptazine-based conjugated organic polymers for highly efficient photooxidation

Lin-Fang Yang, Cheng-Cheng Zhang, Yi-Zhou Zhu\* and Jian-Yu Zheng\*

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# Scalable synthesis of pyrazine-linked conjugated microporous polymers for high-performance proton conduction

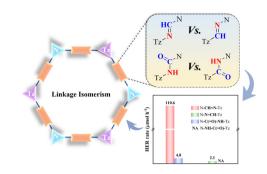
Gang Yuan, Hao Luo, Zhenhua Li, Yuze Chen, Bangdi Ge, Xiaowei Song\* and Zhiqiang Liang\*

#### **RESEARCH ARTICLES**

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# Effect of COF linkage isomerism on photocatalytic hydrogen evolution performance

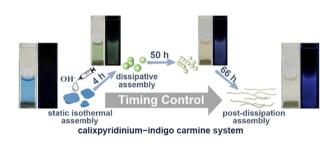
Mingcai Zhang, Xuan Wu, Yangbin Xie, Xiaolong Hao, Qinghao Wang, Yongqing Zhao,\* Jincai Wu and Xiaobo Pan\*



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# Structural evolution from disordered to fibrous assembly via a dual visual dissipative pathway

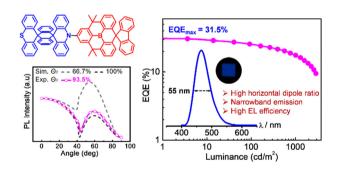
Kui Wang,\* Xin Meng and Xue-Jiao Zhang



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TADF emitters based on a tri-spiral acridine donor and a spiro-B-heterotriangulene acceptor with high horizontal dipole orientation ratios and high efficiencies in deep-blue OLEDs

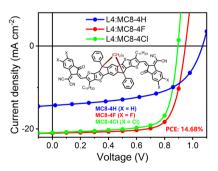
Young Hoon Lee, Jeoungmin Ji, Thi Quyen Tran, Taehwan Lee, Jaehoon Jung, Youngil Lee,\* Seunghyup Yoo\* and Min Hyung Lee\*



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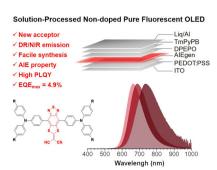
# Fused-ring electron acceptors with a macrocyclic side chain

Guangan Nie, Tai An, Xianyi Meng, Jiangzhao Chen, Xiaoliang Zhang, Jiamin Cao,\* Zuo Xiao\* and Liming Ding



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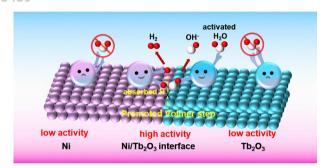
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# Deep-red/NIR AlEgens based on electronwithdrawing dithiafulvalene-fused benzothiadiazole for solution-processed non-doped OLEDs

Yanling Liu, Ziwei Deng, Jiale Li, Jianlong Xie, Xing Feng, Zijie Qiu, Guohua Xie,\* Zheng Zhao\* and Ben Zhong Tang\*

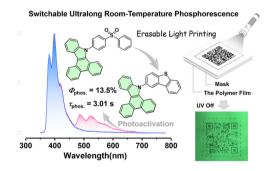
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A superhydrophilic self-supported nickel/terbium oxide electrode for the alkaline hydrogen evolution reaction at high current density

Zining Qiu, Xiaodan Yang, Bowen Ni, Jiarui Liu, Hongming Sun,\* Jing Chen, Cheng-Peng Li and Miao Du\*

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Controlling the efficient and ultralong room-temperature phosphorescence of 9H-dibenzola.clcarbazole derivatives for erasable light printing

Wei Cai, Linggi Zuo, Shiya Feng, Pengtao Hu, Hengshan Wei, Zhexian Zhang, Hongru Wu, Leyu Wang,\* Yuhai Wang, Guang Shi\* and Bingjia Xu\*