

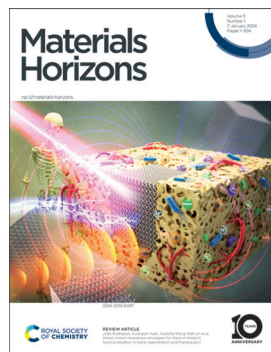
# Materials Horizons

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See João Rodrigues, Guangyin Yuan, Xudong Wang, Kaili Lin *et al.*, pp. 12–36. Image reproduced by permission of Kaili Lin from *Mater. Horiz.*, 2024, 11, 12.



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See Xin Zhao, Yong Han, Baolin Guo *et al.*, pp. 37–101. Image reproduced by permission of Xin Zhao and Baolin Guo from *Mater. Horiz.*, 2024, 11, 37.

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**Materials Horizons Emerging Investigator Series:**  
Dr Jie Xu, Argonne National Laboratory, USA

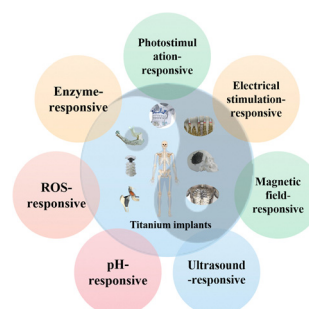


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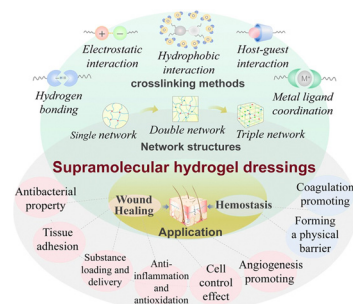


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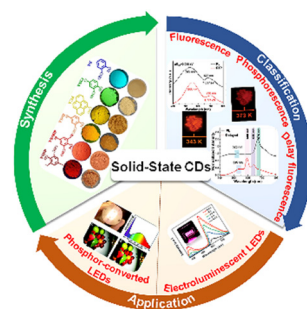
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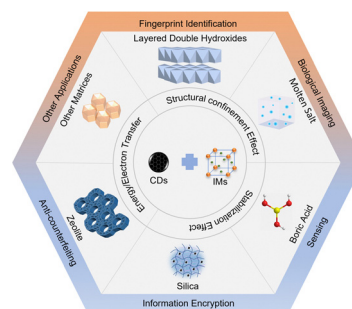
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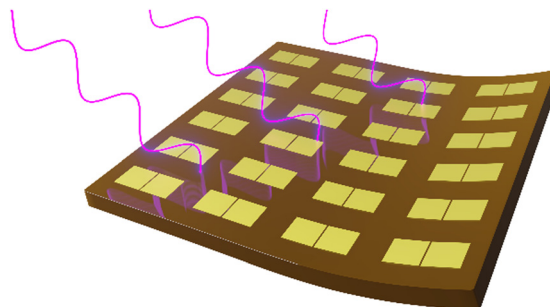


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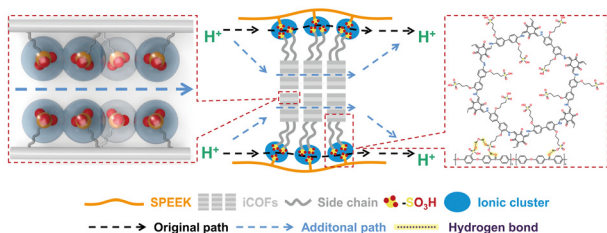
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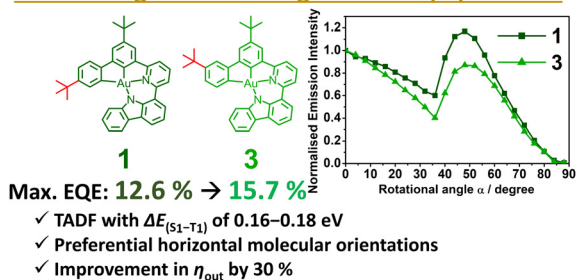


### Covalent organic frameworks with flexible side chains in hybrid PEMs enable highly efficient proton conductivity

Ziwen Liu, Xiao Pang, Benbing Shi, Na Xing, Yawei Liu, Bohui Lyu, Leilang Zhang, Yan Kong, Sijia Wang, Zhong Gao, Rou Xue, Tianyu Jing, Changkun Liu, Qinhuaidan Bai, Hong Wu\* and Zhongyi Jiang\*

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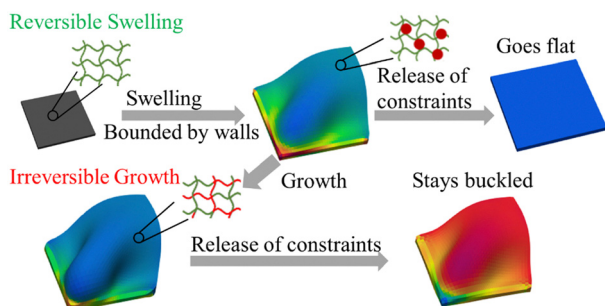
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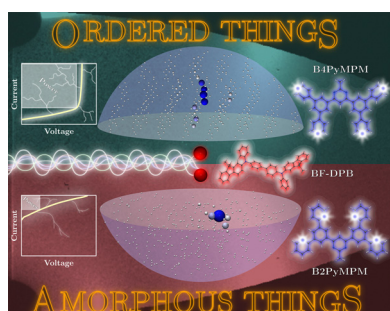
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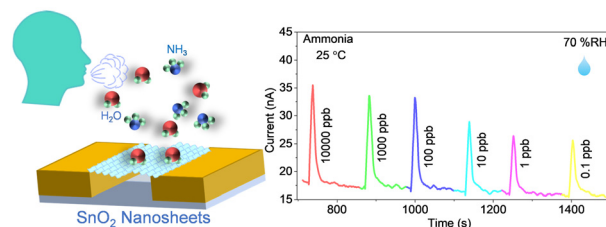




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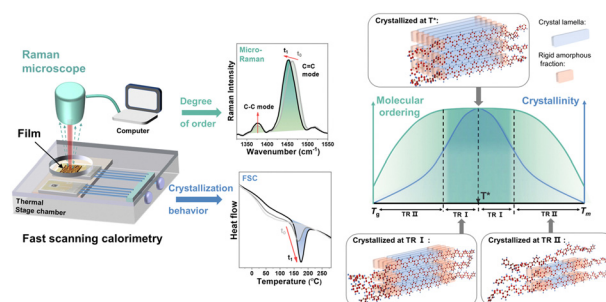
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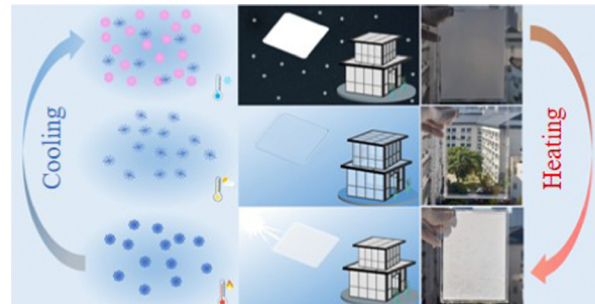
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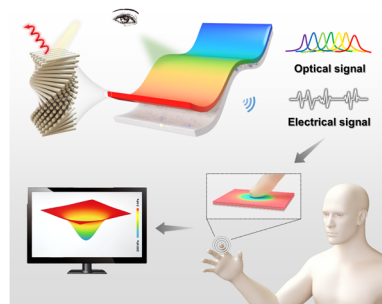
Zhenkun Yu, Yulin Ma, Linhan Mao, Yue Lian, Yanwen Xiao, Zhaoxia Chen\* and Yuhong Zhang\*



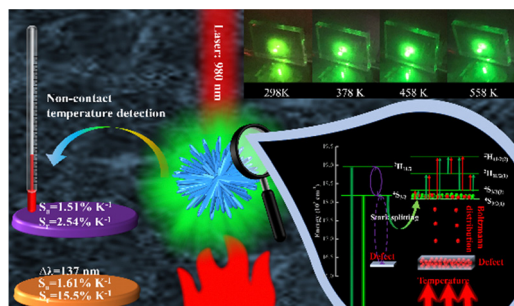
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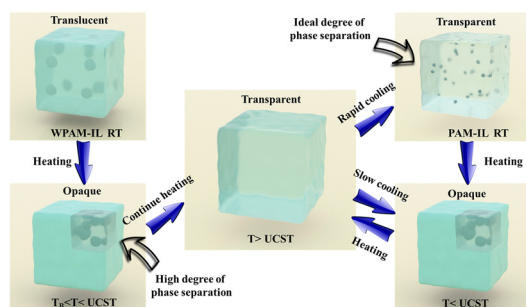
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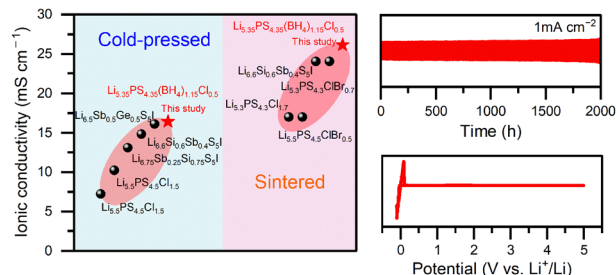
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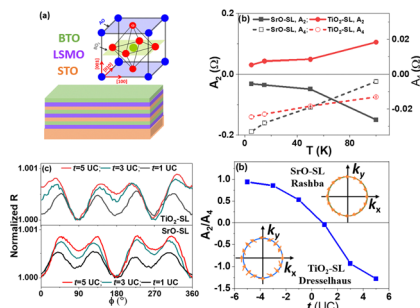


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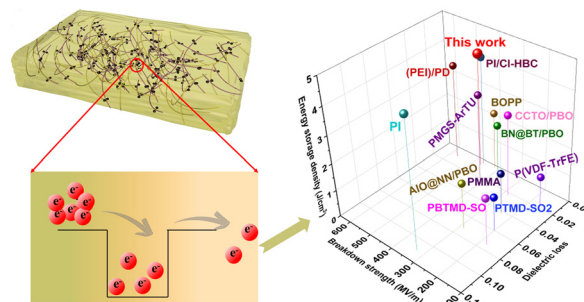


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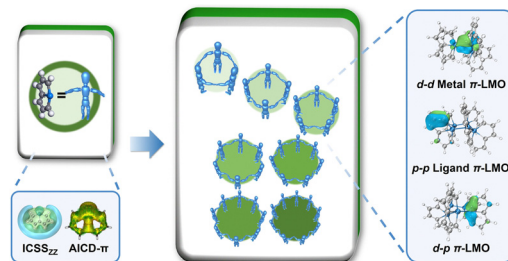
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Zirui Wang, Yayu Yan, Jiali Chen, Qiao-Hong Li\* and Jian Zhang\*



*Metal core  $\pi$  + Ligand  $\pi$  = Metal-organic  $\pi$ -cluster*

