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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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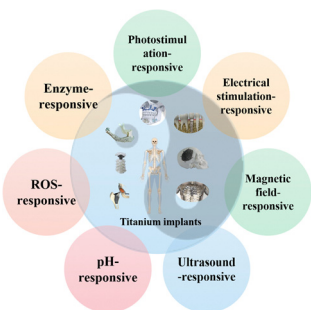
Smart stimuli-responsive strategies for titanium implant functionalization in bone regeneration and therapeutics

Jinkai Zhang, Yu Zhuang, Ruilong Sheng, Helena Tomás, João Rodrigues,* Guangyin Yuan,* Xudong Wang* and Kaili Lin*



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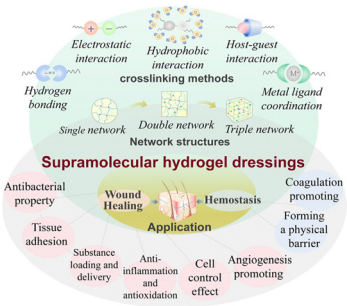
Supramolecular hydrogels for wound repair and hemostasis

Shaowen Zhuo, Yongping Liang, Zhengying Wu, Xin Zhao,* Yong Han* and Baolin Guo*



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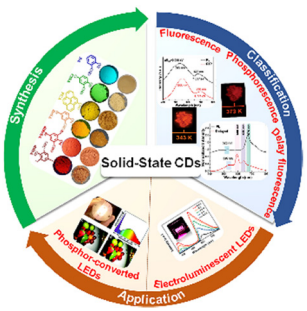

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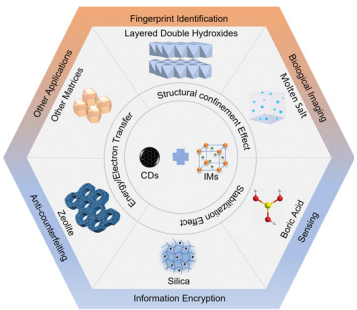
The afterglow of carbon dots shining in inorganic matrices

Xiaoyan He, Yihao Zheng, Chaofan Hu, Bingfu Lei, Xingcai Zhang,* Yingliang Liu* and Jianle Zhuang*



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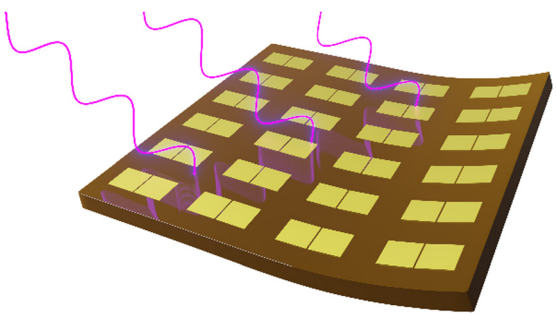

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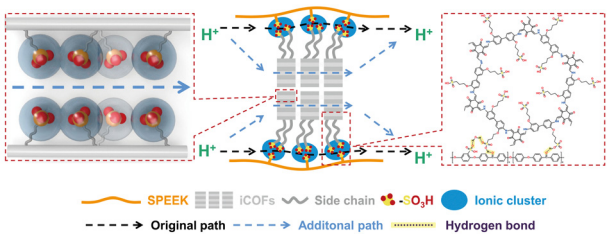

Covalent organic frameworks with flexible side chains in hybrid PEMs enable highly efficient proton conductivity

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, Qinhuidan Bai, Hong Wu* and Zhongyi Jiang*

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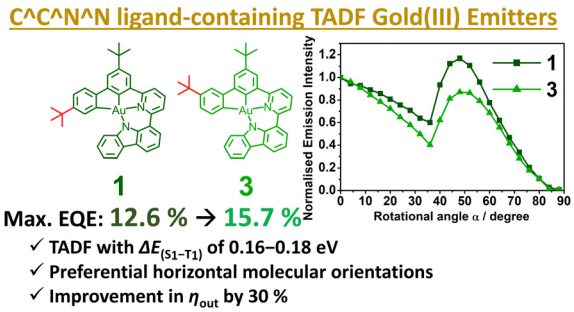

Thermally activated delayed fluorescence tetradentate ligand-containing gold(III) complexes with preferential molecular orientation and their application in organic light-emitting devices

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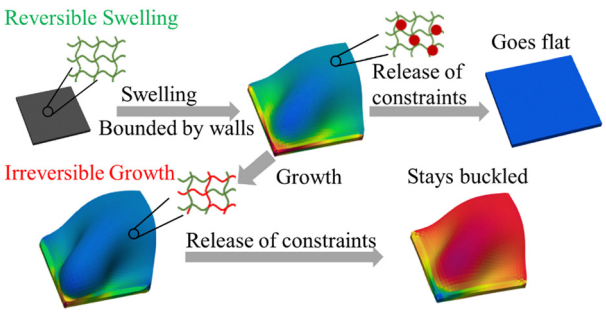

Biomimetic growth in polymer gels

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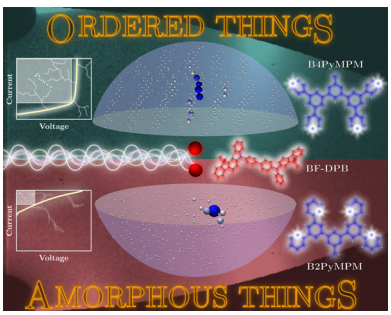

Molecularly induced order promotes charge separation through delocalized charge-transfer states at donor–acceptor heterojunctions

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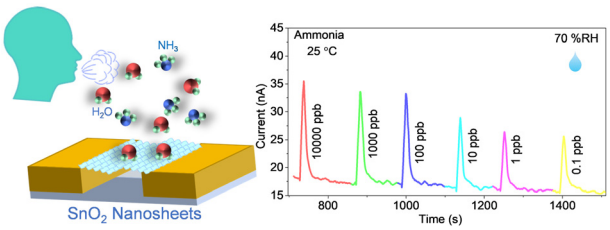
Porous SnO_2 nanosheets for room temperature ammonia sensing in extreme humidity

Mohit Verma, Gaurav Bahuguna, Sukhwinder Singh, Ankita Kumari, Dibyajyoti Ghosh, Hossam Haick and Ritu Gupta*



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Real-time correlation of crystallization and segmental order in conjugated polymers

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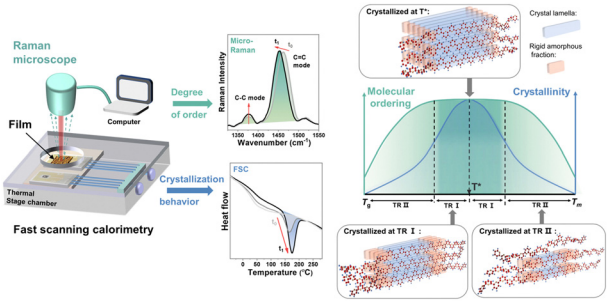

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Bidirectional optical response hydrogel with adjustable human comfort temperature for smart windows

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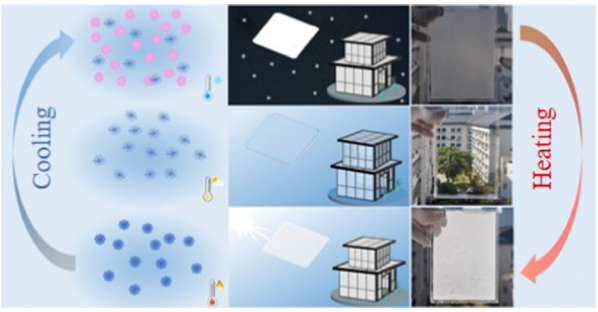

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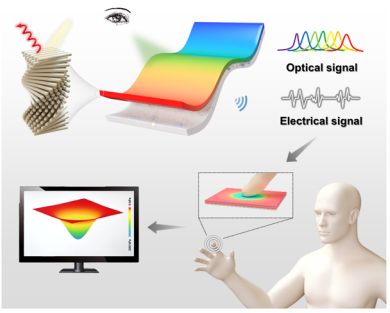
Jiazhe Ma, Yanzhao Yang, Xuan Zhang, Pan Xue, Cristian Valenzuela, Yuan Liu, Ling Wang* and Wei Feng*



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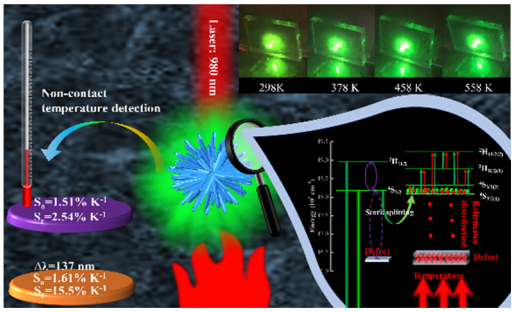

Anomalous thermal activation of green upconversion luminescence in Yb/Er/ZnGdO self-assembled microflowers for high-sensitivity temperature detection

Wei Zheng, Aifeng He, Hong Ma, Jianhua Chen, Bo Jing, Yan Li, Xiaogang Yu, Chunqiang Cao and Baoyu Sun*

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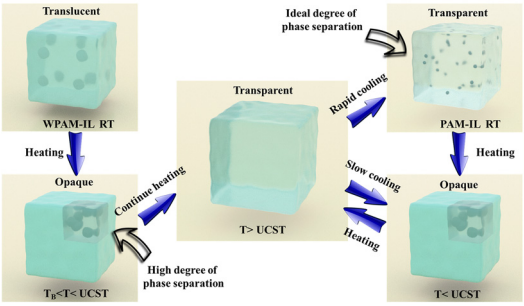

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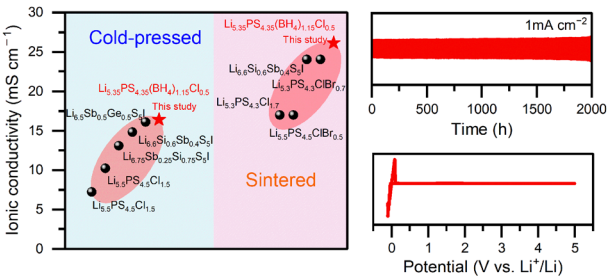

High Ionic Conductivity and Electrochemical Stability against Lithium Metal

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Ji-Hoon Han, Do Kyung Kim, Young Joo Lee, Young-Su Lee,* Kyung-Woo Yi and Young Whan Cho*

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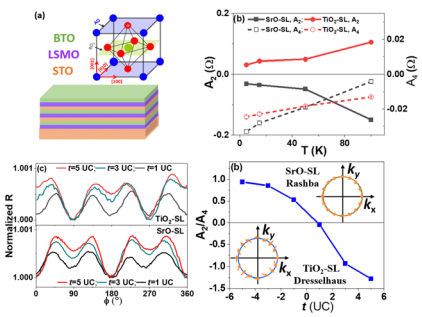

Tuning Rashba–Dresselhaus effect with ferroelectric polarization at asymmetric heterostructural interface

Bangmin Zhang,* Chunhua Tang, Ping Yang and Jingsheng Chen*

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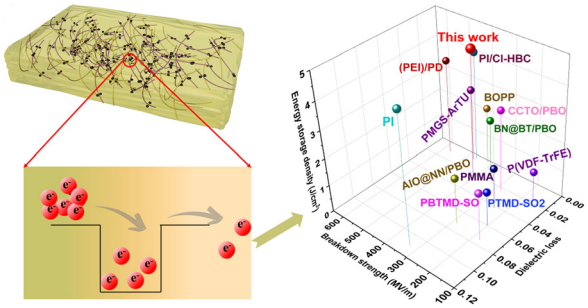
Scalable co-cured polyimide/poly(*p*-phenylene benzobisoxazole) all-organic composites enabling improved energy storage density, low leakage current and long-term cycling stability

Peiyuan Zuo, Jinpeng Li, Donglin Chen, Lingzhi Nie, Liang Gao, Jingyu Lin and Qixin Zhuang*



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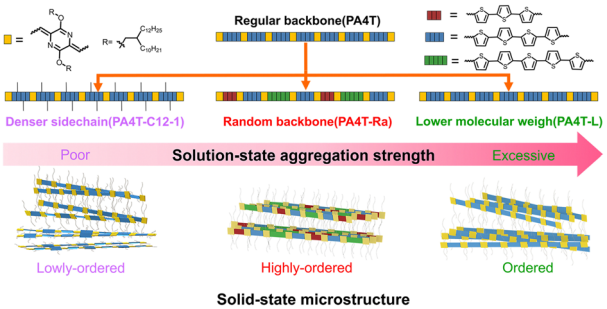
A skeletal randomization strategy for high-performance quinoidal-aromatic polymers

Quanfeng Zhou, Cheng Liu, Jinlun Li, Runze Xie, Guoxiang Zhang, Xiang Ge, Zesheng Zhang, Lianjie Zhang, Junwu Chen, Xiu Gong, Chen Yang, Yuanyu Wang,* Yi Liu* and Xuncheng Liu*



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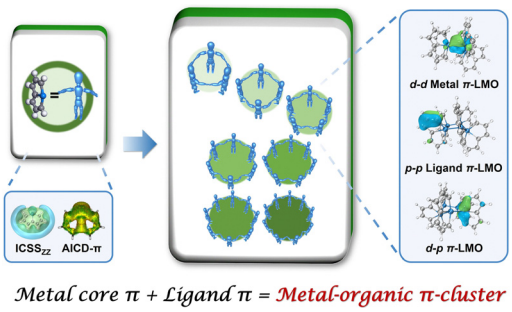
Zirui Wang, Yayu Yan, Jiali Chen, Qiao-Hong Li* and Jian Zhang*