

# Materials Horizons

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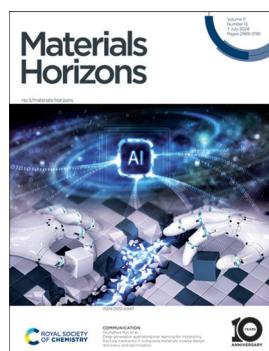
## IN THIS ISSUE

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### Cover

See Jing Wei et al.,  
pp. 3038–3047.  
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### Inside cover

See Seunghwa Ryu et al.,  
pp. 3048–3065.  
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2024, 11, 3048.

## EDITORIAL

2997

**Materials Horizons Emerging Investigator**  
Series: Dr Sahnawaz Ahmed, National Institute  
of Pharmaceutical Education and Research  
(NIPER) Kolkata, India

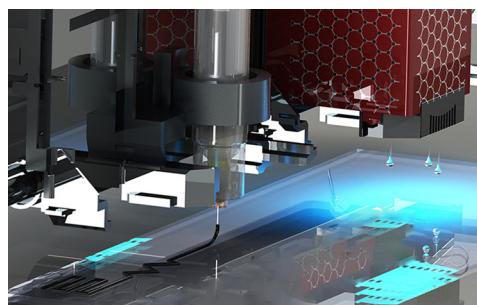


## COMMENTARY

2999

**A reflection on “Formation and processability of liquid crystalline dispersions of graphene oxide”**

Ali R. Jalili\* and Gordon Wallace\*





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Elemental answers

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## OPINION

3005

**Better nanoscience through open, collaborative, and critical discussions**

Nathanne Cristina Vilela Rost, Maha Said, Mustafa Gharib, Raphaël Lévy and Federico Boem\*

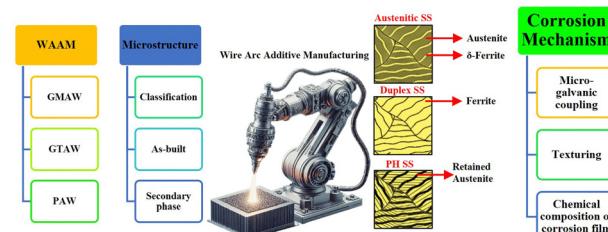


## REVIEW

3011

**Corrosion response of steels fabricated through arc directed energy deposition additive manufacturing: a review**

Khashayar Morshed-Behbahani\* and Ali Nasiri\*

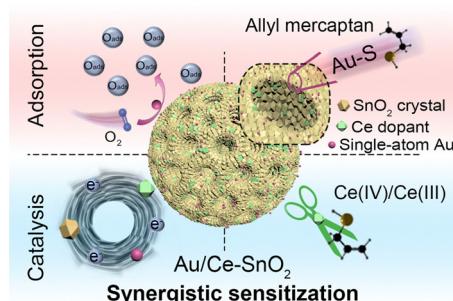


## COMMUNICATIONS

3038

**Synergistic sensitization effects of single-atom gold and cerium dopants on mesoporous SnO<sub>2</sub> nanospheres for enhanced volatile sulfur compound sensing**

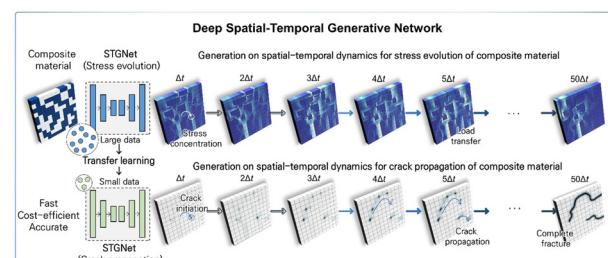
Ping Li, Zizheng Wang, Youyou Feng, Bingxi Feng, Dong Cheng and Jing Wei\*



3048

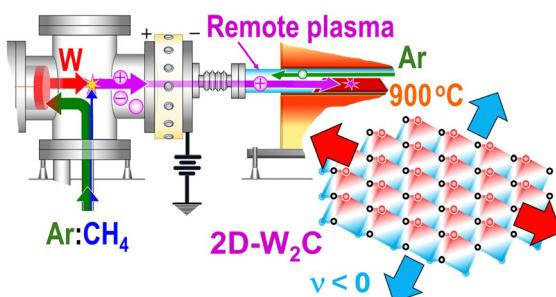
**Deep generative spatiotemporal learning for integrating fracture mechanics in composite materials: inverse design, discovery, and optimization**

Donggeun Park, Jaemin Lee, Hugon Lee, Grace X. Gu and Seunghwa Ryu\*



## COMMUNICATIONS

3066



## Giant auxetic behavior in remote-plasma synthesized few-layer tungsten semicarbide

Noah B. Stoczek, Farman Ullah and Giovanni Fanchini\*

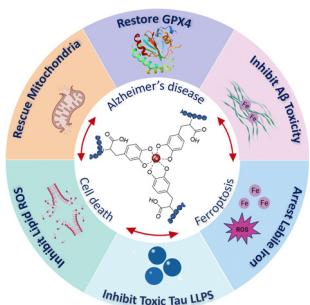
3076



## Aggregation-induced emission organic metal halide complex for X-ray scintillation

Tunde Blessed Shonde, He Liu, Oluwadara Joshua Olasupo, Alexander Bouchard, Sara Bouchard, Annaliese Franklin, Xinsong Lin, Luis M. Stand and Biwu Ma\*

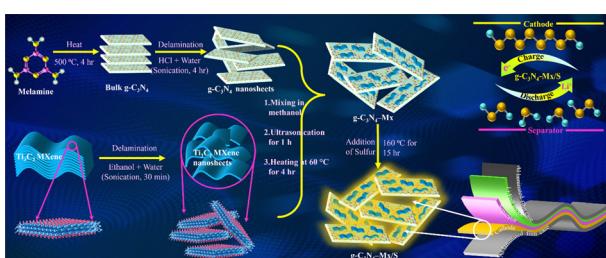
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## Polycatechols inhibit ferroptosis and modulate tau liquid–liquid phase separation to mitigate Alzheimer's disease

Hariharan Moorthy, Madhu Ramesh, Diksha Padhi, Prayasee Baruah and Thimmaiah Govindaraju\*

3090

Advancing lithium–sulfur battery efficiency: utilizing a 2D/2D g-C<sub>3</sub>N<sub>4</sub>@MXene heterostructure to enhance sulfur evolution reactions and regulate polysulfides under lean electrolyte conditions

Vijay K. Tomer,\* Otavio Augusto Titton Dias, Abdelaziz M. Gouda, Ritu Malik\* and Mohini Sain\*

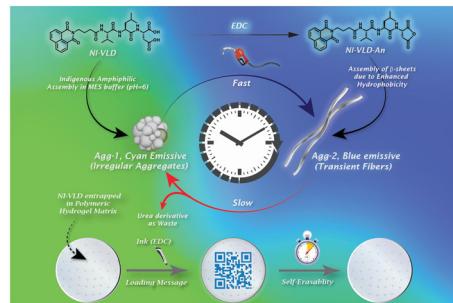


## COMMUNICATIONS

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## Chemically fueled dynamic switching between assembly-encoded emissions

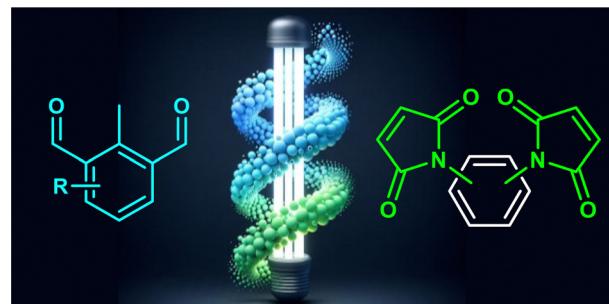
Manirul Islam, Malay Kumar Baroi, Basab Kanti Das, Aanchal Kumari, Krishnendu Das\* and Sahnawaz Ahmed\*



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## Photo-induced synthesis of polymeric nanoparticles and chemiluminescent degradable materials via flow chemistry

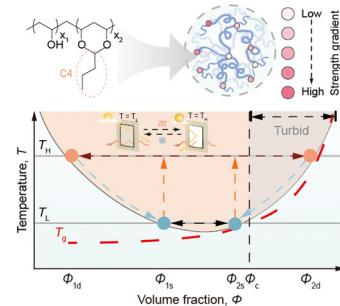
Joshua O. Holloway, Laura Delafresnaye,\* Emily M. Cameron, Jochen A. Kammerer and Christopher Barner-Kowollik\*



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## Engineering a polyvinyl butyral hydrogel as a thermochromic interlayer for energy-saving windows

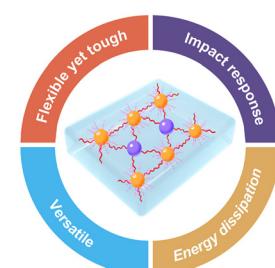
Zequan Lin, Zican Yang and Liang Gao\*



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## Intelligent anti-impact elastomers by precisely tailoring the topology of modular polymer networks

Jianfeng Cheng, Xianhua Yao, Zhipeng Zhang, Yizhong Tan, Nan Hu, Chunfeng Ma\* and Guangzhao Zhang\*

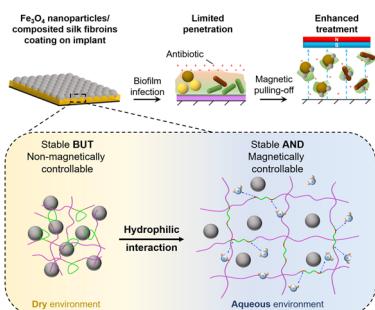


Modular construction strategy for intelligent anti-impact elastomer



## COMMUNICATIONS

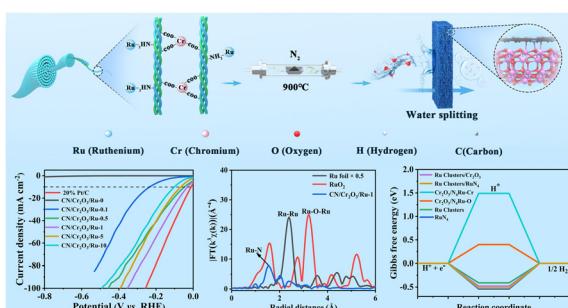
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### Composited silk fibroins ensured adhesion stability and magnetic controllability of $\text{Fe}_3\text{O}_4$ -nanoparticle coating on implant for biofilm treatment

Kecheng Quan, Zhinan Mao, Yupu Lu, Yu Qin, Shuren Wang, Chunhao Yu, Xuewei Bi, Hao Tang, Xiaoxiang Ren, Dafu Chen,\* Yan Cheng, Yong Wang,\* Yufeng Zheng\* and Dandan Xia\*

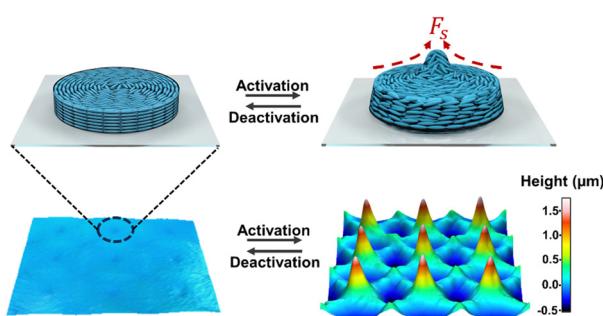
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### Atomic-scale Ru anchored on chromium-shavings as a precursor for a pH-universal hydrogen evolution reaction electrocatalyst

Qingxin Han,\* Qiangqiang Lu, Xuechuan Wang, Chao Wei, Xiaoyu Guan,\* Luming Chen, Xiao Wang and Ji Li\*

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### Transforming patterned defects into dynamic poly-regional topographies in liquid crystal oligomers

Yuxin You, Youssef M. Golestani, Dirk J. Broer, Tinghong Yang, Guofu Zhou, Robin L. B. Selinger,\* Dong Yuan\* and Danqing Liu\*

## CORRECTION

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### Correction: Thermoelectric nanowires for dense 3D printed architectures

Danwei Zhang,\* Jayanthi Ramiah, Mehmet Cagirici, Kivanc Saglik, Samantha Faye Duran Solco, Jing Cao,\* Jianwei Xu\* and Ady Suwardi\*

