

# Nanoscale Horizons

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### Cover

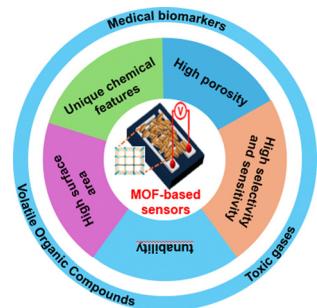
See Haejun Chung,  
Sejeong Kim *et al.*,  
pp. 1077–1083.  
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Sejeong Kim,  
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2025, 10, 1077.

## REVIEWS

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### Advancements in MOF-based resistive gas sensors: synthesis methods and applications for toxic gas detection

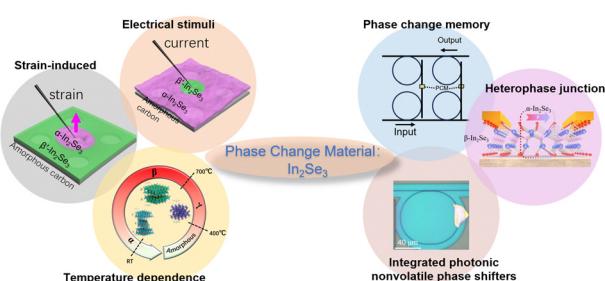
Linh Ho Thuy Nguyen, Ali Mirzaei, Jin-Young Kim, Thang Bach Phan, Lam Dai Tran, Kevin C.-W. Wu, Hyoun Woo Kim,\* Sang Sub Kim\* and Tan Le Hoang Doan\*



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### Polymorphic phases in 2D $\text{In}_2\text{Se}_3$ : fundamental properties, phase transition modulation methodologies and advanced applications

Weiying Zheng, Zhiqian Liu, Guoqiang Xi, Tengzhang Liu, Dingguan Wang, Lin Wang and Wugang Liao\*



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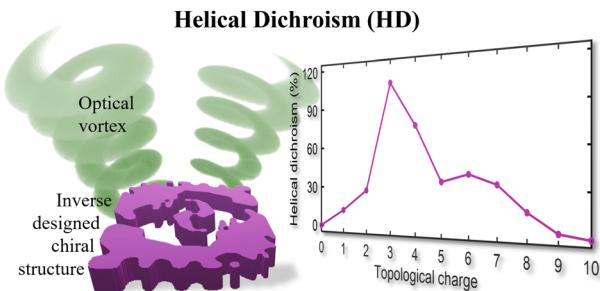


## COMMUNICATIONS

1077

**Inverse design of chiral structures for giant helical dichroism**

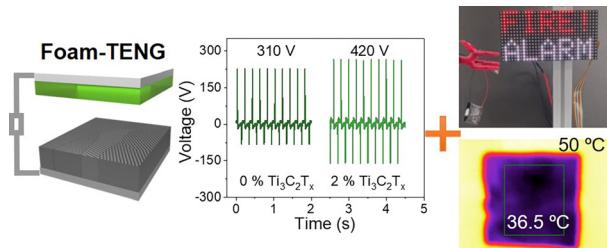
Chia-Chun Pan, Munseong Bae, Hongtao Wang, Jaesung Lim, Ranjith Rajasekharan Unnithan, Joel K. W. Yang, Haejun Chung\* and Sejeong Kim\*



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**Multifunctional  $\text{Ti}_3\text{C}_2\text{T}_x$ -alginate foams for energy harvesting and fire warning**

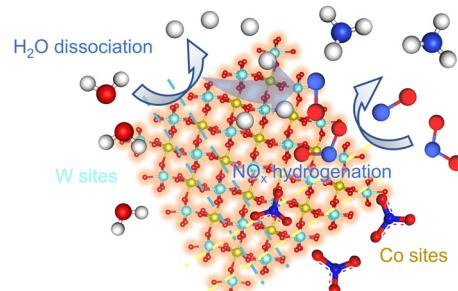
Bernd Wicklein,\* Hyunjoon Yoo, Geetha Valuoruthu, Ji-Seok Kim, Mannan Khan, Manmatha Mahato, Federico Carosio, Yury Gogotsi and Il-Kwon Oh\*



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 **$\text{CoWO}_4$  nanoparticles with dual active sites for highly efficient ammonia synthesis**

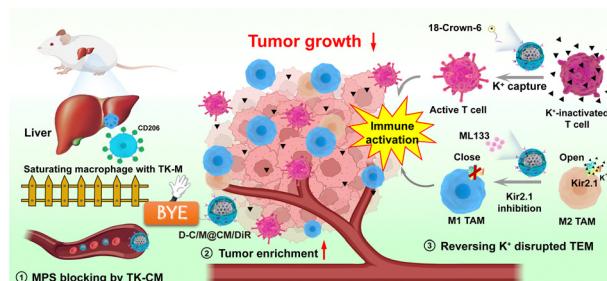
Lian Duan, Zhengcong Huang, Gen Chen, Min Liu, Xiaohe Liu, Renzhi Ma\* and Ning Zhang\*



1107

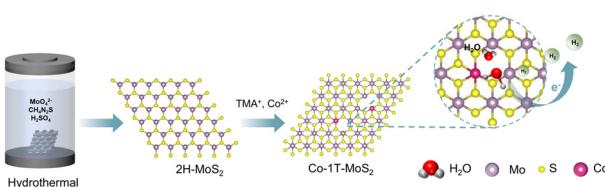
**Reversing cancer immunosuppression via  $\text{K}^+$  capture and repolarization of tumor-associated macrophages**

Si-Ye Tong, Cong-Min Huo, Yu-Cheng Zuo, Shuo Gao, David Tai Leong,\* Wei Xue and Jing-Yi Zhu\*



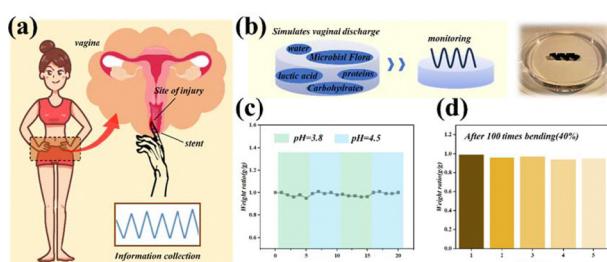
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Achieving highly efficient electrocatalytic hydrogen evolution with Co-doped MoS<sub>2</sub> nanosheets

Fengrui Sun, Kebin Yang, Xinbo Qin, Weibing Wu\* and Yizhong Lu

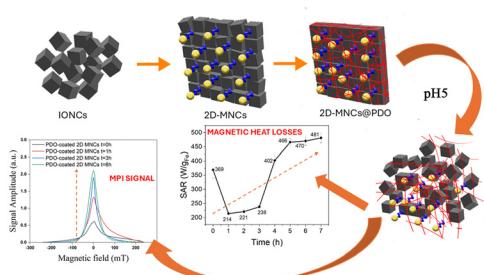
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## A bioinspired helical hydrogel scaffold with real-time sensing for enhanced precision in gynecological digital vaginal examination

Weipeng Lu, Qing He, Zheng Mao, Songchao Fu, Yue Wang, Zhiwei Jiang, Ying Wang, Yue Cao, Sunlong Li, Cihui Liu\* and Qian Dong\*

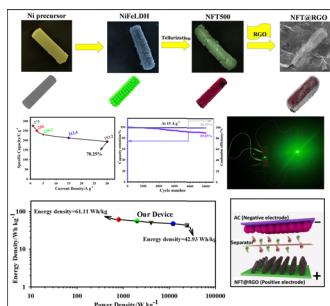
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## Magnetic nanosheets: from iron oxide nanocubes to polydopamine embedded 2D clusters and their multi-purpose properties

Giacomo Mandriota, Sahitya Kumar Avugadda, Ehsan Sadeghi, Niccolò Silvestri, Roberto Marotta, Helena Gavilán, Ulf Olsson, Cinzia Giannini, Yu Hsin Tsai, Anna Cristina S. Samia and Teresa Pellegrino

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Reinforced supercapacitor electrode via reduced graphene oxide encapsulated NiTe<sub>2</sub>-FeTe<sub>2</sub> hollow nanorods

Mohammad Ali Saghafizadeh, Akbar Mohammadi Zardkhoshou\* and Saeid Saeed Hosseiny Davarani\*

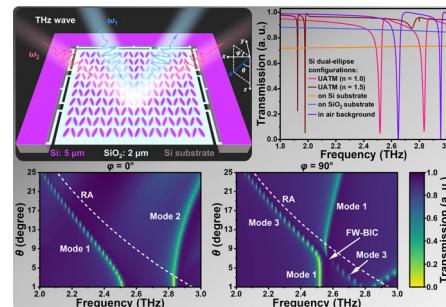


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**An ultrathin all-dielectric terahertz metamaterial with quasi-BIC induced angular dispersion**

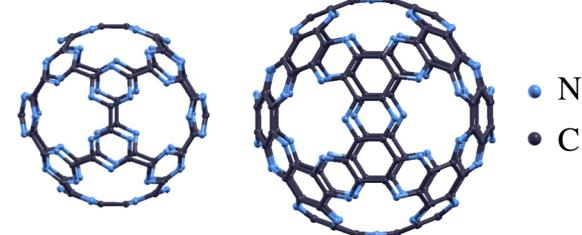
Daoye Zheng and Yu-Sheng Lin\*



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**Porous carbon nitride fullerenes: a novel family of porous cage molecules**

Zacharias G. Fthenakis\* and Nektarios N. Lathiotakis\*



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**Emulating working memory consolidation with a 1D supramolecular nanofibre-based neuromorphic device**

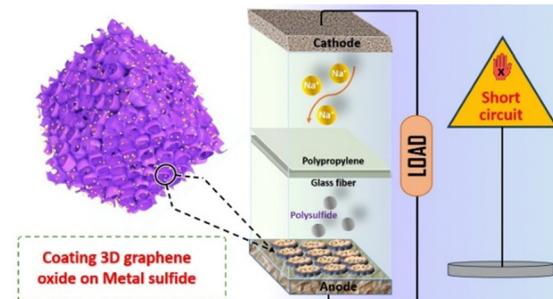
Tejaswini S. Rao, Subi J. George and Giridhar U. Kulkarni\*



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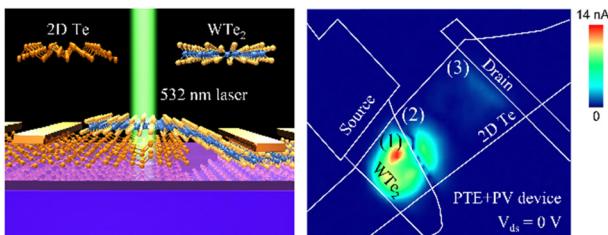
**Optimizing sodium storage and durability in metal sulfide anodes with a 3D graphene architecture**

Mujtaba Aminu Muhammad, Yangjie Liu, Baffa Haruna, Ahmed Abdel-aziz, Zul Qarnain, Amir Mahmoud Makin, Jiaqi Yu, Bo Zheng, Xiang Hu\* and Zhenhai Wen\*



## COMMUNICATIONS

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Spatially resolved optoelectronic puddles of  $\text{WTe}_2$ -2D Te heterostructure

Thi Uyen Tran, Ngoc Thanh Duong, Dae Young Park, Jaeuk Bahng, Hai Phuong Duong, Van Dam Do, Mun Seok Jeong and Seong Chu Lim\*

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Jinghua Li, Yun Liu, Xiaonan Li, Gaofeng Liang, Changshun Ruan\* and Kaiyong Cai\*

