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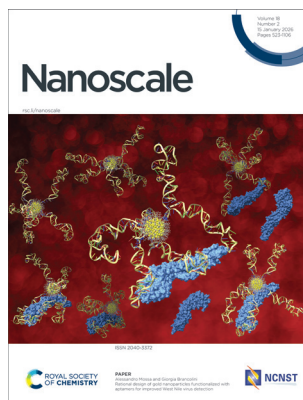
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### Cover

See Edward Loukopoulos, Ana E. Platero-Prats *et al.*, pp. 706–711.

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### Inside cover

See Alessandro Mossa and Giorgia Brancolini, pp. 723–738.

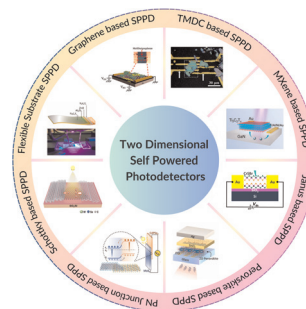
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### Advances in visible and ultraviolet self-powered photodetectors: exploring 2D materials and Janus heterostructures

Umer Ahsan, Ehsan Elahi, Abdul Sattar, Kalyan Jyoti Sarkar, Muhammad Asad, Hina Mustafa, Muhammad Irfan, Muhammad Ammar Sabar and Zdenek Sofer\*



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### Recent advances in preparation and application of flexible thermally conductive elastomer films

Jixiang Zhu, Zuhang Wang, Xinyu Zhang, Chenhu Mei, Chunfa Ye, Ming Li, Longqi Zhao and Xiaoyan Li\*



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# EES Batteries

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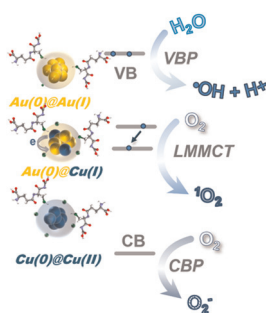
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## COMMUNICATIONS

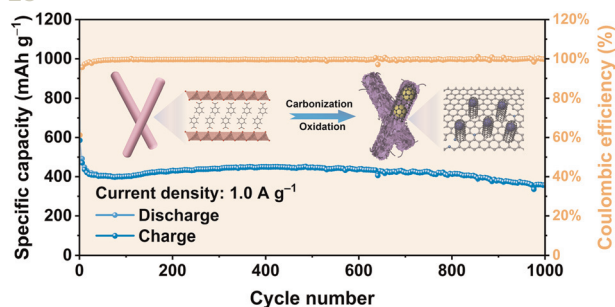
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### Ultrasmall glutathione-protected Au/Cu and their alloy nanoclusters with specific ROS generation

Ling Chen, Tianfeng Pan, Jing Jin, Xuejiao Yang, Wencai Sun, Zicheng Wanyan, Haizhu Yu\* and Manzhou Zhu

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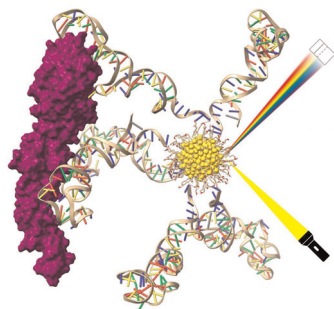


### Constructing 1D carbon hybrids with spatially confined Co<sub>3</sub>O<sub>4</sub> nanoparticles for advanced lithium-ion battery anodes

Huijuan Yao, Nan Wu, Limin Song, Wei Zhang, Rui Cao, Haoquan Zheng\* and Hang Zhang\*

## PAPERS

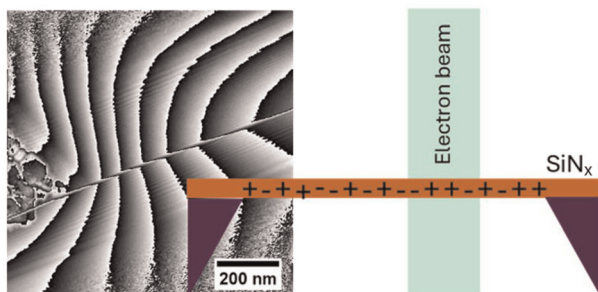
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### Rational design of gold nanoparticles functionalized with aptamers for improved West Nile virus detection

Alessandro Mossa\* and Giorgia Brancolini\*

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### Charges on a suspended silicon nitride membrane under a high-energy electron beam

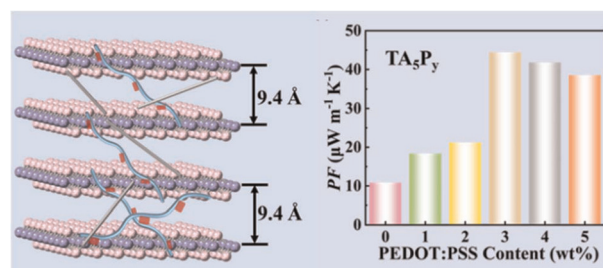
Mads Søndergaard Larsen, Ole Hansen, Nestor J. Zaluzec, Kristian Speranza Mølhav and Murat Nulati Yesibolati\*



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## 2D/1D van der Waals material-based composites for wearable thermoelectric generators and sensors

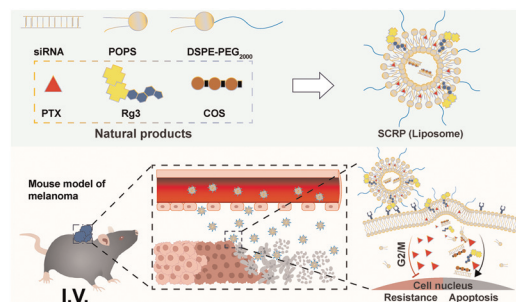
Peng-an Zong,\* Wenhui Li, Mengran Chen, Heng Liu, Xuefei Zhang\* and Yixiang Ou\*



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## A natural synergy-based nanosystem co-delivering siRNA and paclitaxel for full-stage apoptosis promotion in melanoma

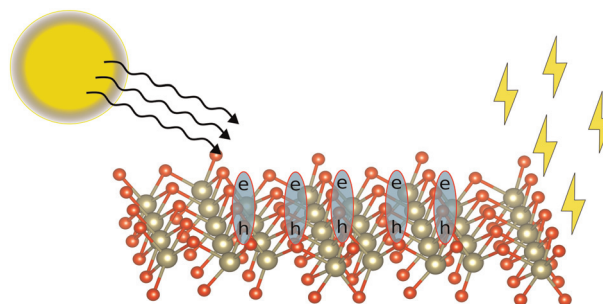
Jiangu Wang, Huanchun Xing, Lin Wang, Zhongxing Xu, Xin Sui, Yuan Luo, Liao Shen, Xiuli Zhao,\* Jun Yang\* and Yongan Wang\*



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## Stable 1T'' HfCl₂ monolayer with strong excitonic effects and promising solar harvesting efficiency

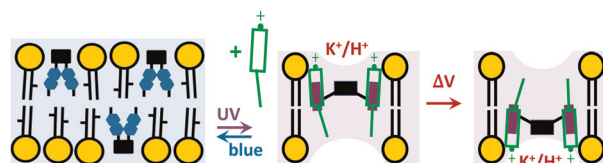
João Marcos T. Palheta, André L. de O. Batista, Efracio Mamani Flores, Celso R. C. Rêgo, Alexandre Silva Santos, Diego Guedes-Sobrinho, Alexandre Cavalheiro Dias and Maurício Jeomar Piotrowski\*



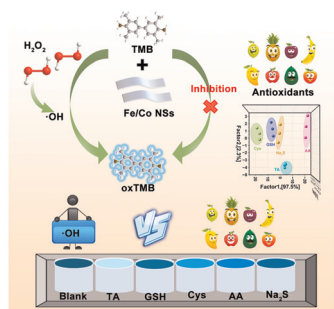
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## Optical control of carrier-mediated ion transport by photoswitchable lipids

Juergen Pfeffermann, Rohit Yadav, Toma Glasnov, Oliver Thorn-Seshold and Peter Pohl\*



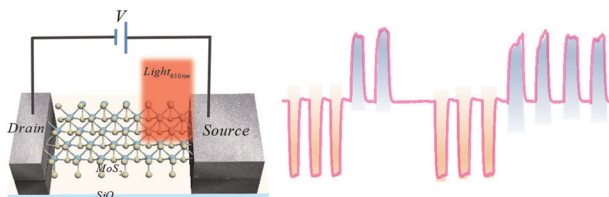
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### Distinction of antioxidants using a three-channel colorimetric sensor array constructed with a bimetallic FeCo nanozyme

Li Li,\* Jianjian Zhao and Zhengbo Chen\*

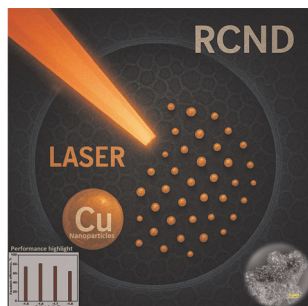
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### Nano-silver/MoS<sub>2</sub>/nano-silver bipolar photodetector and its symmetric ternary-encoded image transmission

Liu Yangjun, Liang Haifeng,\* Li Yang and Huang Yuting\*

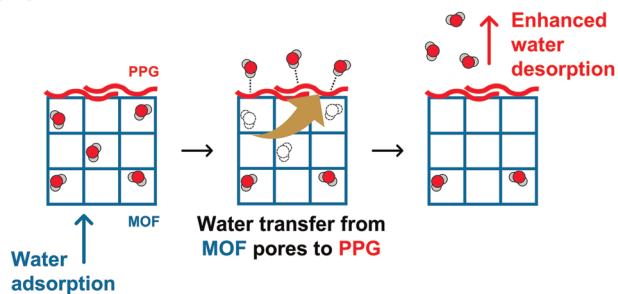
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### A laser-induced catalyst for the electro-synthesis of ammonia

Divya Catherin Sesu, Hani Porat, Aneena Lal, Asmita Dutta, Manish Kumar Yadav, Refael Minnes and Arie Borenstein\*

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### Enhancing water release in atmospheric water harvesting systems by mixing oligomeric liquids with metal-organic framework

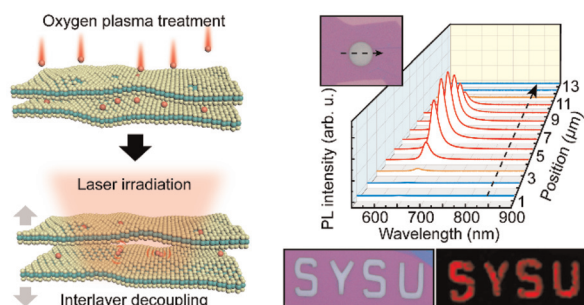
Meles Zenawi Gebrekidan, Yuto Toki, Arisa Fukatsu,\* Kenji Okada and Masahide Takahashi\*



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### Strong direct-bandgap photoluminescence of suspended few-layer MoS<sub>2</sub> via interlayer decoupling

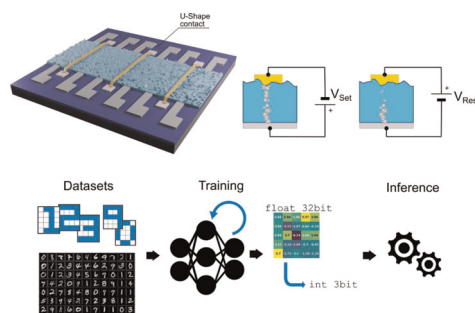
Jiahao Wu, Jinyan Huang, Juncong She\* and Shasha Li\*



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### Fast prototyping of memristors for ReRAMs and neuromorphic computing

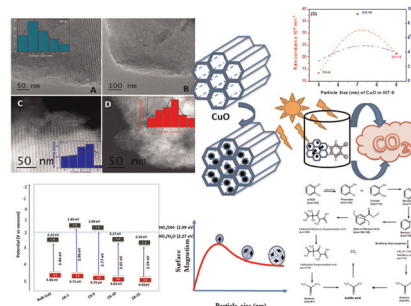
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### Size-controlled CuO nanoparticles in KIT-6: magneto-photocatalytic properties and mechanistic insights

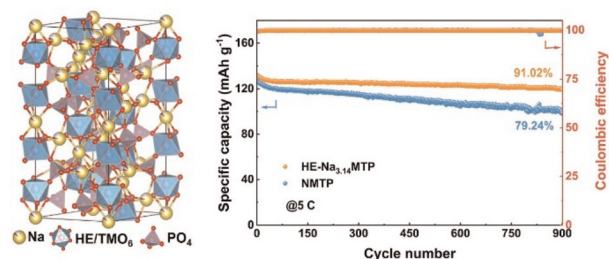
Sagnik Mitra, Adarsh Kumar, Deepak Tyagi, Anindita Sarkar, Sai Haranath Rekapalli, Mayuresh D. Mukadam, Ahin Roy, Debasis Sen, Kaustava Bhattacharyya\* and Avesh Kumar Tyagi\*



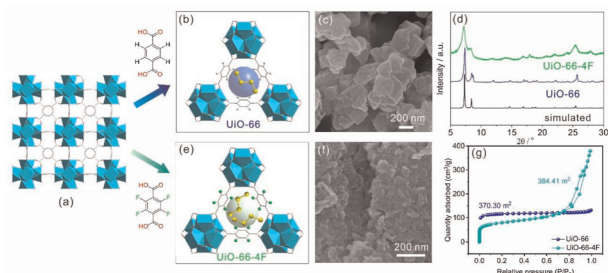
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### Trace high-entropy doping unlocks a high-energy, high-rate and stable Mn-based NASICON cathode for sodium-ion batteries

Xiaoteng Zhang, Hao Fan, Ping Hu, Lei Zhang, Wenchao Shi, Ruohan Yu\* and Liang Zhou\*



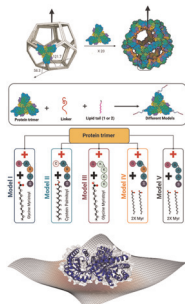
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## Fluorinated Zr-MOF-modified separators for Li-S batteries with enhanced electrochemical performance

Yang-Jie Wang, Lei Cao, Hai-Xin Li, Bao-Qun Wang, Jin-Shan Xiong, Jun-Jie Zhang, Jin-Liang Zhuang,\* Xuan Du\* and Wei Zhao\*

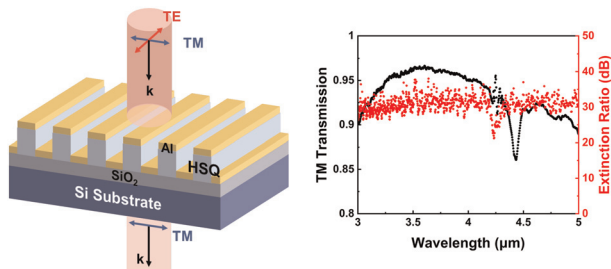
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## Molecular insight into the efficient & robust design of vesiculated protein nano-cages

Shadi Rahnama and Mohammad Reza Ejtehadi\*

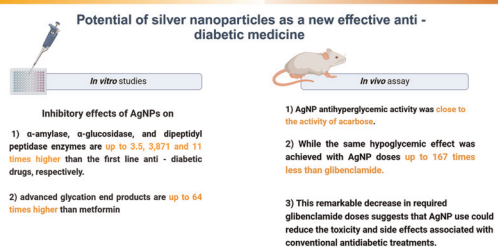
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## High-performance mid-infrared linear polarizers using Fabry-Pérot-resonant HSQ-based gratings via a simplified fabrication

Xiaojia Liang, Jingyuan Zhu, Qing Zhong, Dongbai Xue,\* Chao Feng, Siyu Dong,\* Hongfei Jiao, Zeyong Wei, Zhanshan Wang and Xinbin Cheng

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## Properties of AgNPs stabilized with polyvinylpyrrolidone relevant to antidiabetic agents

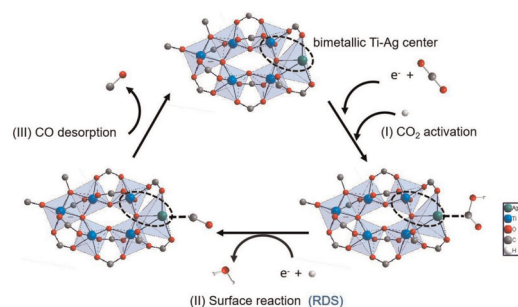
Victoria Vera Pineda, Antonio Alvarez de la Paz, Nina Bogdanchikova,\* Alexey Pestrykov, Juan José Acevedo Fernández and Maira Rubi Segura Campos\*



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### Temperature-dependent electrochemical CO<sub>2</sub>-to-CO conversion on the bimetallic Ti–Ag nanocluster

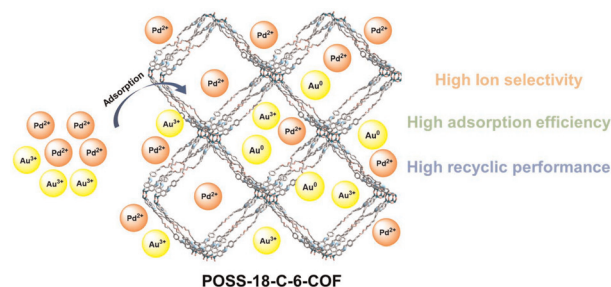
Bing Liu,\* Chaohui Liu, Peng Xiao, Lin Yan and Jing Ma



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### 3D covalent organic framework with crown ether and POSS motifs for selective recovery of Au(III) and Pd(II) from highly acidic wastewater

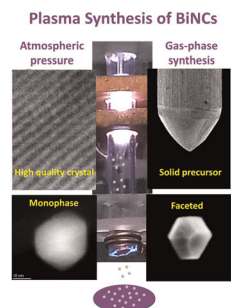
Xuyuan Jin, Shuainan Ni,\* Chenchen Zhu, Zhiwei Liu and Chengliang Xiao\*



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### Atmospheric pressure plasma synthesis of monophasic bismuth nanocrystals

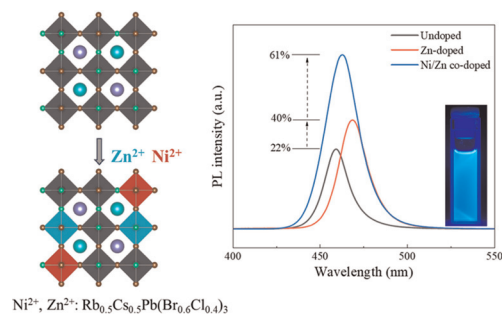
Ali Khatibi,\* Miryam Arredondo, Paul Maguire and Davide Mariotti\*



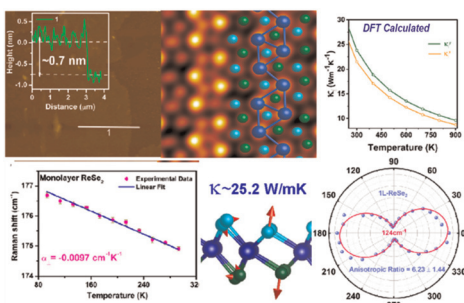
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### Enhanced luminescence efficiency and stability in deep-blue perovskite quantum dots through synergistic Zn<sup>2+</sup>/Ni<sup>2+</sup> co-doping

Xueyong Zheng, Juan Luo, Zhenyu Li, Chunli Jiang, Mengqin Liu, Ruijuan Qi, Hechun Lin, Chunhua Luo\* and Hui Peng\*

Ni<sup>2+</sup>, Zn<sup>2+</sup>: Rb<sub>0.5</sub>Cs<sub>0.5</sub>Pb(Br<sub>0.6</sub>Cl<sub>0.4</sub>)<sub>3</sub>

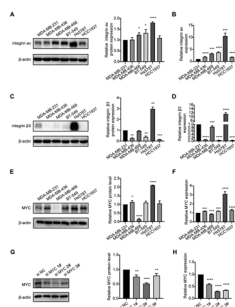
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### Anisotropic in-plane thermal transport in monolayer ReSe<sub>2</sub> and its modulation through layer control and selenium vacancies: experiment vs. theory

Shipra Aswal, Sirsendu Ghosal, Himanshu Murari, Ravinder Chahal, Viliam Vretenár, Ravi K. Biroju, Lubomír Vančo, Subhradip Ghosh and P. K. Giri\*

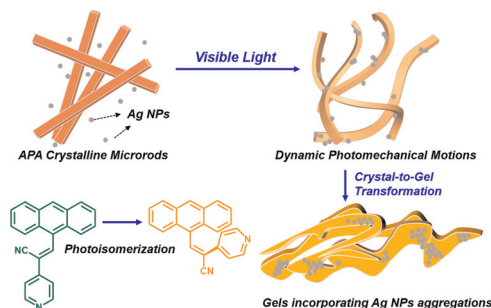
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### iRGD-engineered exosomes mediate siMYC delivery for effective tumor suppression in triple-negative breast cancer

Hui Li, Weiguang Yuan, Jialin Liu, Yingjie Wang, Fang Fang, Yuanyuan Yu, Jianxun Hou, Mengru Jin, Siwei Li, Siyu Liu, Yajie Gong, Yijun Chu, Xingda Zhang, Shilu Zhao, Wenhui Hao, Xuquan Qin, Qinchun Fan, Xi Chen, Youxue Zhang,\* Da Pang\* and Xianyu Zhang\*

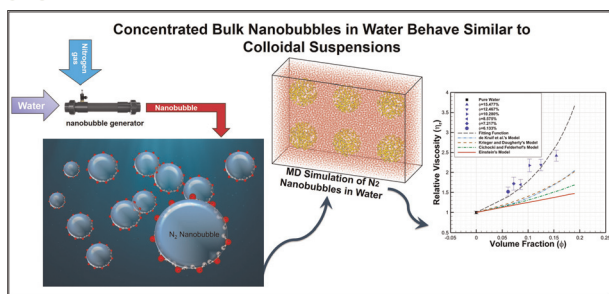
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### Photoinduced dynamic gelation and deformations based on molecular crystal microrods stimulated by Z-to-E photoisomerization

Yu-Hao Li, Jiang-Tao Liu, Ya-Bing Sun, Yun-Peng Huang, Jia-Wang Hou, Yikai Xu, Chen-Chen Zhang, Tian-Yi Xu and Fei Tong\*

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### Rheology of highly concentrated bulk nanobubbles in water

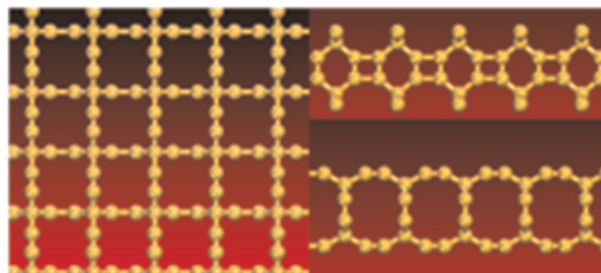
Fankai Peng and Ahmad Jabbarzadeh\*



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### First-principles and machine learning investigation of the structural and optoelectronic properties of dodecaphenylene: a novel carbon allotrope

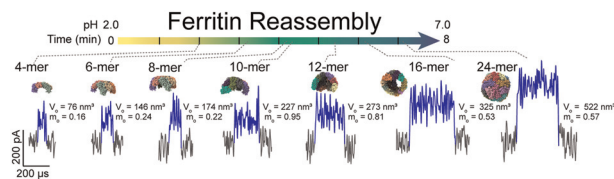
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### Tracking single-molecule ferritin reassembly and disassembly using polymer-coated nanopores

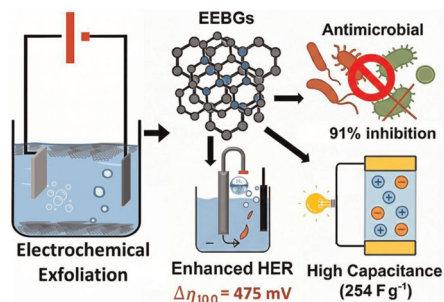
Mahya Assadipapari, Alireza Soleimanian, Max Adam, Jiali Li, Arman Yousefi, Saaman Zargarbashi, Lei Xu, Max F. K. Wills, Hesna Kara, Marina Santana Vega, Alasdair W. Clark, Andrew J. Hudson, Jian-An Huang, Mohsen Rahmani and Cuifeng Ying\*



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### Electrochemically integrated 2D borophene-graphene architectures for energy and antimicrobial applications

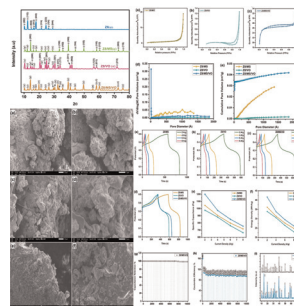
Ravi Ranjan Pandey, Himani Pandey, Anshu Andola, Divyesh Joshi, Misao Fujii, Anand Prakash, Hideyuki Nakanishi\* and Rakesh K. Pandey\*



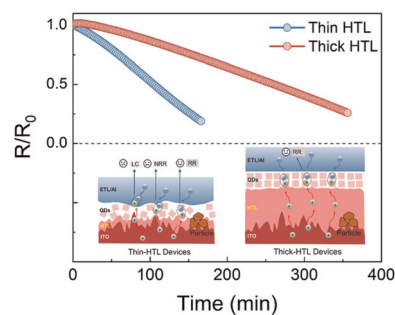
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### One-pot *in situ* Co-assembly of binary ZIF-8/MoS<sub>2</sub>, ZIF-8/V<sub>2</sub>O<sub>5</sub>, and ternary ZIF-8/MoS<sub>2</sub>/V<sub>2</sub>O<sub>5</sub> composite supercapacitor electrodes

Omer Munir, Muhammad Saleem,\* Muhammad Zeewaqaq Manzoor, Abdul Quader, Amir Shahzad, Afnan Qabil Alshammari, Afkar Qabil Alshammari, Sadiq Ali and Muhammad Nadeem Akhtar\*



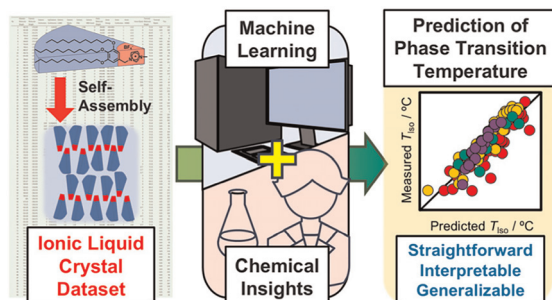
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### Conductivity-enhanced thick hole-transporting layers *via* doping–crosslink synergy for efficient and stable NIR QLEDs

Wei-Zhi Liu, Ye Wang, Shuai-Hao Xu, Ross D. Jansen-van Vuuren,\* Dong-Ying Zhou\* and Liang-Sheng Liao\*

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### Prediction of the phase transition temperatures of functional nanostructured liquid crystals: a machine learning method based on small data for the design of self-assembled materials

Shingo Takegawa, Haruka Tobita, Yasuhiko Igarashi, Yuya Oaki\* and Takashi Kato\*

