

# Materials Advances

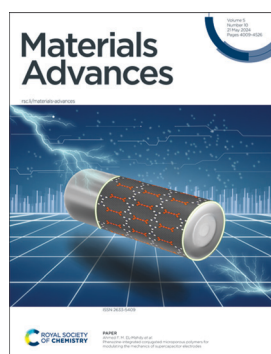
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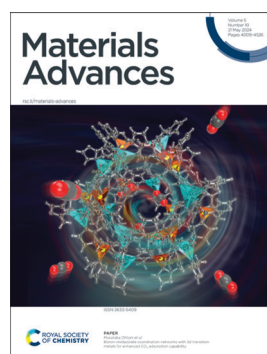
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See Ahmed F. M. EL-Mahdy *et al.*, pp. 4142–4150.  
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### Inside cover

See Masataka Ohtani *et al.*, pp. 4151–4158.  
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## EDITORIAL

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### Introduction to surface engineering of transition metal-based 2D layered materials for anti-corrosion and energy applications

Subrata Kundu

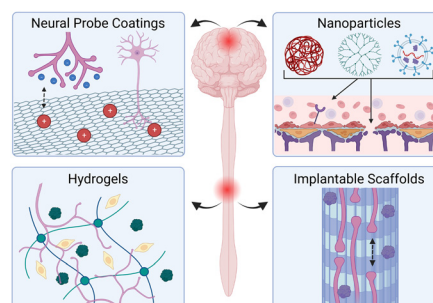


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### Biomaterial strategies for regulating the neuroinflammatory response

Alycia N. Galindo, David A. Frey Rubio and Marian H. Hettiaratchi\*



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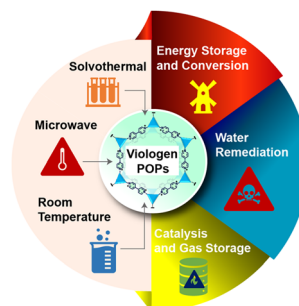
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### Recent advancement in viologen functionalized porous organic polymers (vPOPs) for energy and environmental remediation

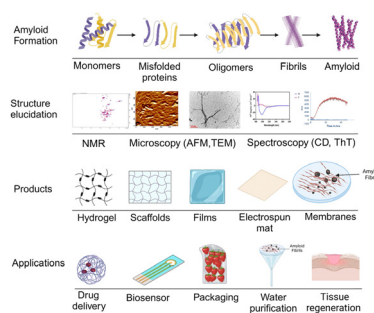
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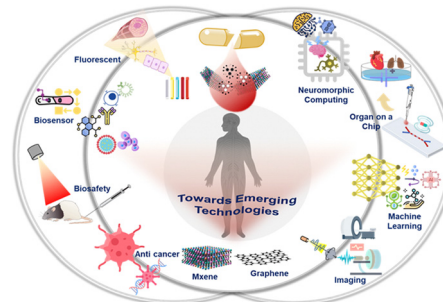
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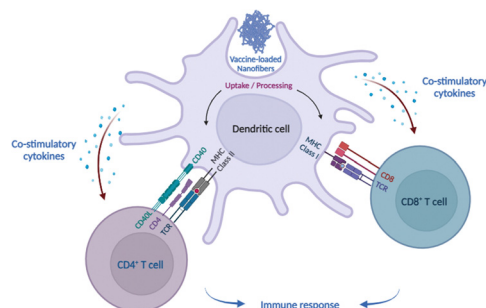
Kamil Reza Khondakar,\* Divya Tripathi, Hira Mazumdar,\* Kirti Ahuja and Ajeet Kaushik



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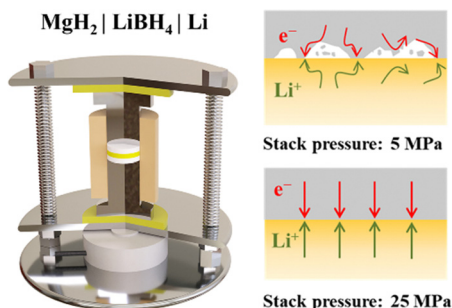
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Hatem A. F. M. Hassan,\* Mohamed Haider and Sherif Ashraf Fahmy



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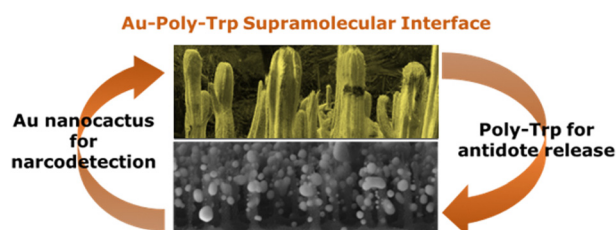
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### Enhancing the cycling performance of MgH<sub>2</sub>-LiBH<sub>4</sub> based solid-state batteries via stacking pressure tailoring

Xueye Zhuang, Haoliang Chen, Shiman He,\* Long Hu, Hui Wang\* and Renzong Hu\*

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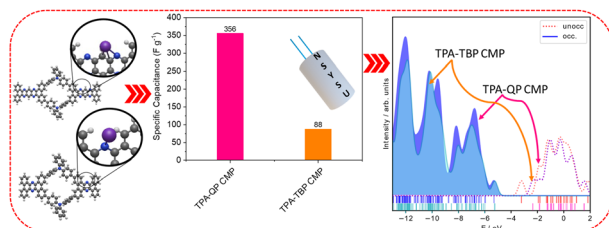


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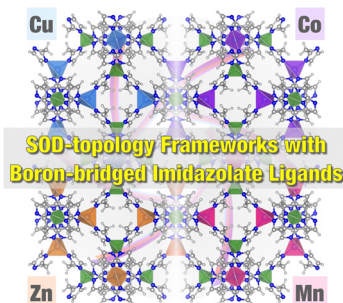
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### Phenazine-integrated conjugated microporous polymers for modulating the mechanics of supercapacitor electrodes

Mohammed G. Kotp, Johann Lüder, Shiao-Wei Kuo and Ahmed F. M. EL-Mahdy\*

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### Boron-imidazolate coordination networks with 3d transition metals for enhanced CO<sub>2</sub> adsorption capability

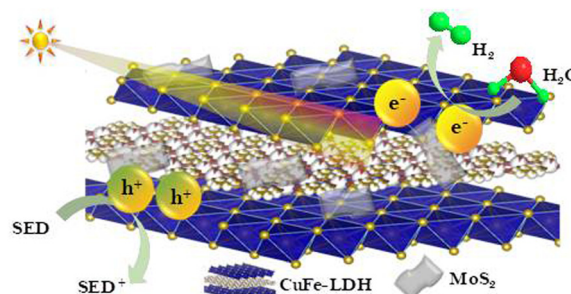
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### Surface engineering of a 2D CuFe-LDH/MoS<sub>2</sub> photocatalyst for improved hydrogen generation

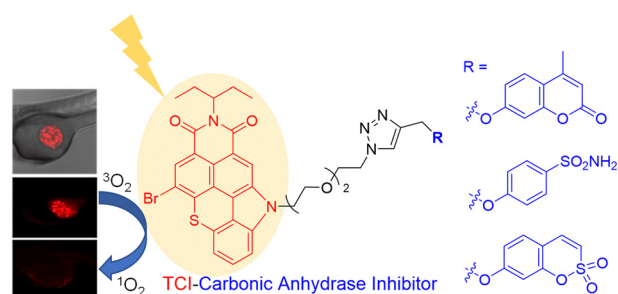
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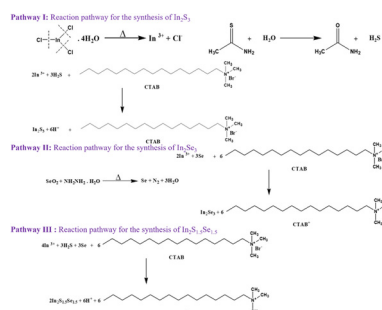
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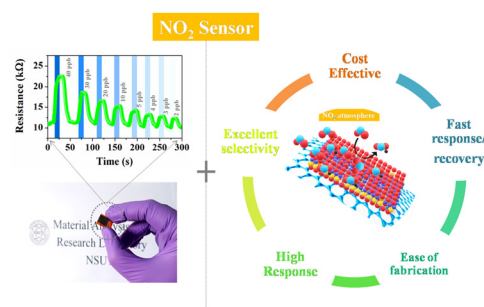
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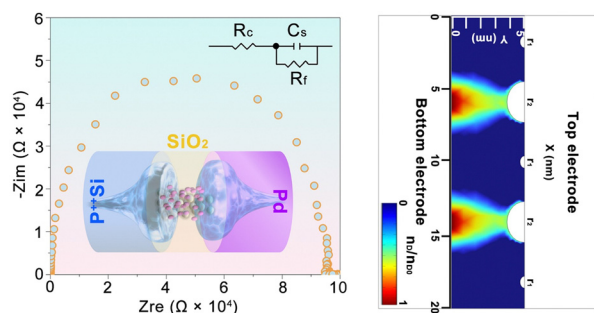
### Phase Transition of Globular Protein Vesicles In Macromolecularly Crowded Conditions



### Phase transition of recombinant fusion protein assemblies in macromolecularly crowded conditions

Jooyong Shin, Yinhao Jia, Janani Sampath and Yeongseon Jang\*

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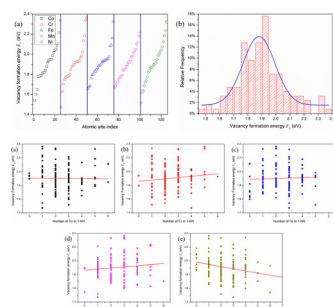
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Shilan Fu, Junfeng Liu, Siqi Wu, Lin Zhang, Xu Zhang\* and FengFu Fu\*

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### Defect energetics in an high-entropy alloy fcc CoCrFeMnNi

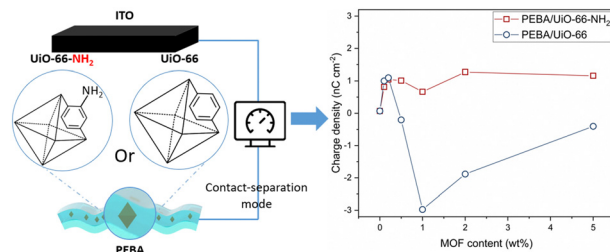
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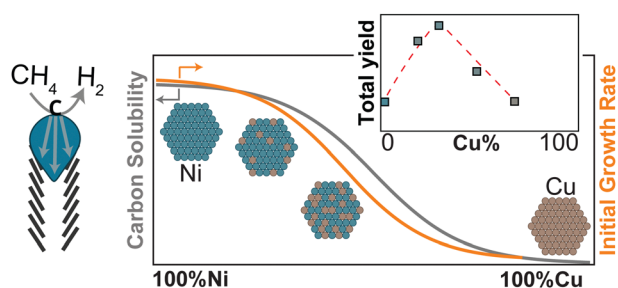
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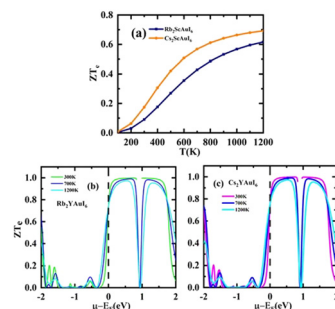
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### A DFT exploration of the optoelectronic and thermoelectric features of a novel halide double perovskite A<sub>2</sub>YAul<sub>6</sub> (A = Rb, Cs) for solar cell and renewable energy applications

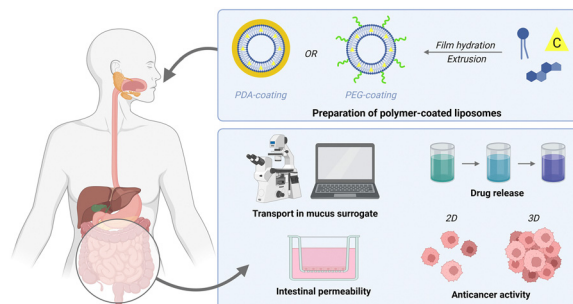
Abrar Nazir, Aparna Dixit, Ejaz Ahmad Khera,\* Mumtaz Manzoor, Ramesh Sharma and A. J. A. Moayad\*



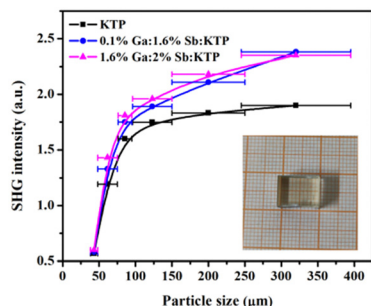
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### Impact of polyethylene glycol and polydopamine coatings on the performance of camptothecin-loaded liposomes for localised treatment of colorectal cancer

Anna Maria Maurelli, Bárbara Ferreira, Sofia Dias, Helena Almeida, Vincenzo De Leo,\* Bruno Sarmento, Lucia Catucci\* and José das Neves\*



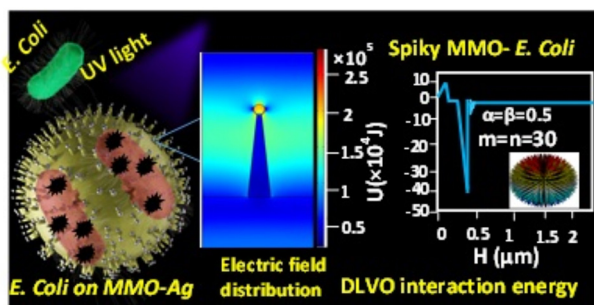
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### The effect of co-substitution of heterovalent ions Ga<sup>3+</sup> and Sb<sup>5+</sup> on nonlinear optical properties of phosphate crystals

Yutong Zhang, Biao Wang, Xinhui Jia, Xi Chong, Jing Li,\* Bingbing Zhang\* and Jiyang Wang

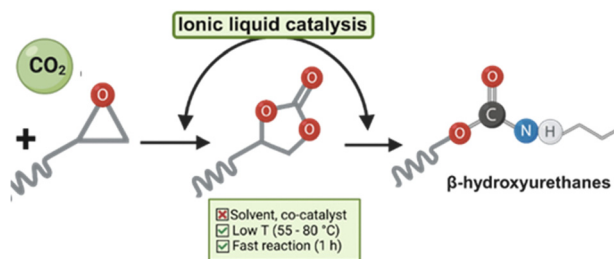
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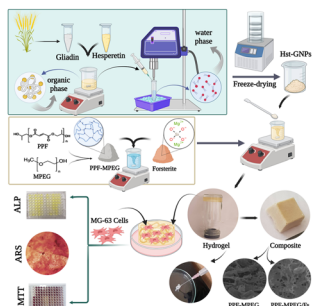
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### A forsterite-reinforced polypropylene fumarate/methoxy polyethylene glycol-hydrogel enriched with flavonoid nanoparticles enhances osteoconductivity

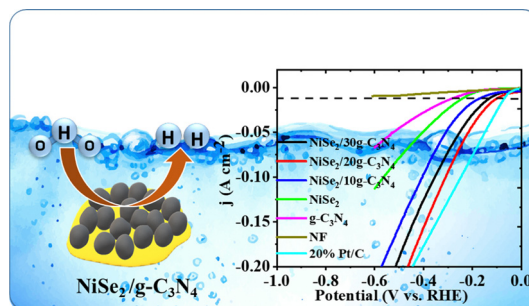
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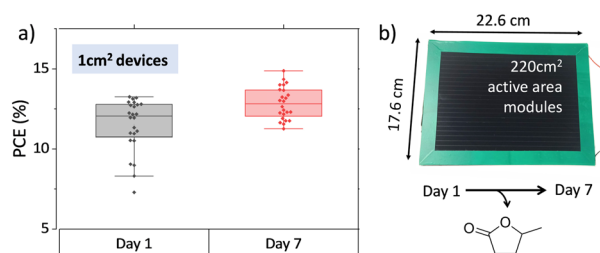
Somnath R. Khaladkar, Oshnik Maurya, Girish Gund, Bhavesh Sinha, Girish Kamble, Jin Hyeok Kim,\* R. R. Deshmukh\* and Archana Kalekar\*



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### Age-induced excellence with green solvents: the impact of residual solvent and post-treatments in screen-printed carbon perovskite solar cells and modules

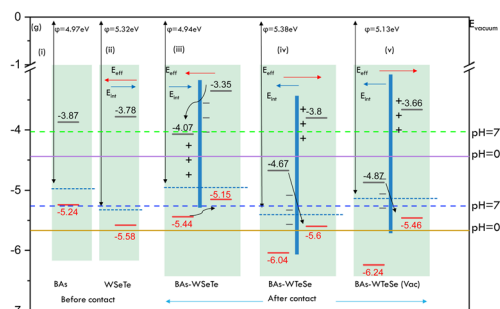
Carys Worsley,\* Sarah-Jane Potts, Declan Hughes, Wing Chung Tsoi and Trystan Watson\*



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### Enhanced photocatalytic water splitting with two-dimensional van der Waals heterostructures of BAs/WTeSe

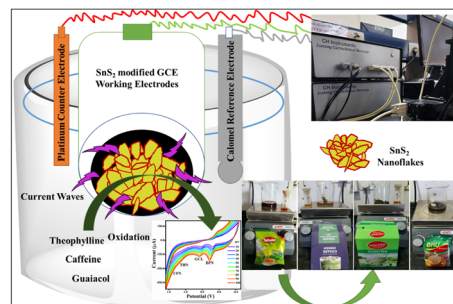
BiBi Hanifan, Abdul Jalil, Syed Zafar Ilyas, Azeem Ghulam Nabi\* and Devis Di Tommaso\*



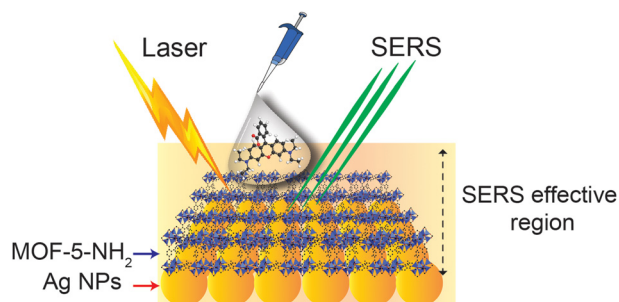
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### Highly sensitive and selective electrochemical detection of caffeine, theophylline and guaiacol in green tea, green coffee, coffee, and tea extracts using a SnS<sub>2</sub> nanoflake-modified electrode

Amisha Kushwaha, Gajendar Singh, Umesh Kumar Gaur and Manu Sharma\*



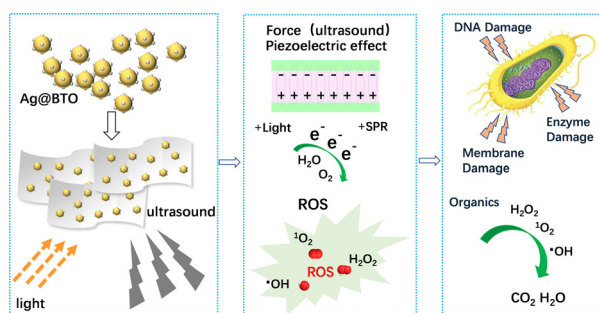
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### Integrating the amino-functionalized MOF-5 film with the silver nanoparticle substrate for a high SERS enhancement effect and long-term stability

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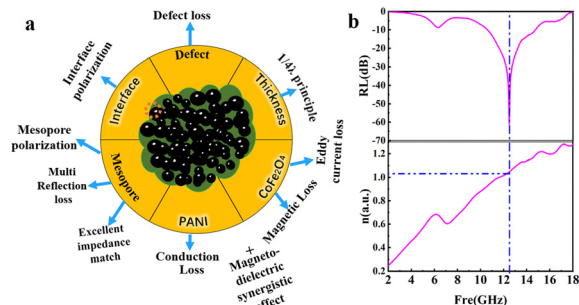
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### A heterostructure nanofiber film with an enhanced internal electrical field and surface plasmon resonance for efficient microbial removal

Wanting Li, Jing Yang, Xin Gao, Yiqian Fu, Huiyu He, Pu Wang, Yudong Hou, Mankang Zhu and Xiu-Hong Wang\*

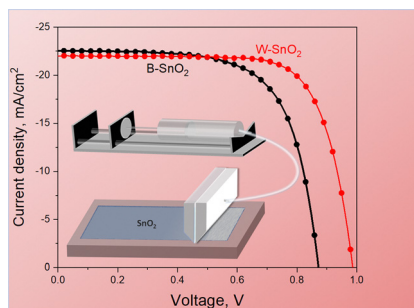
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### A coral-like nano-PCF composite as a broad-bandwidth microwave absorber

Aiqiong Wang, Jianxiong Li and Xiaoming Zhao\*

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### Slot-die coating of electron transport layers for perovskite solar cells using water and butanol-based tin oxide dispersions

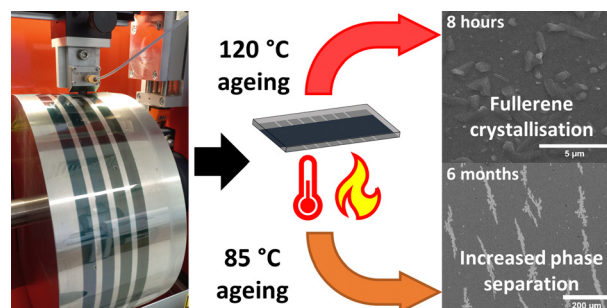
Anuja Vijayan, Vishnu Vijayakumar, Malin B. Johansson, Masoud Karimipour, Monica Lira-Cantu, Byeong Jo Kim and Gerrit Boschloo\*



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### Investigation of different degradation pathways for organic photovoltaics at different temperatures

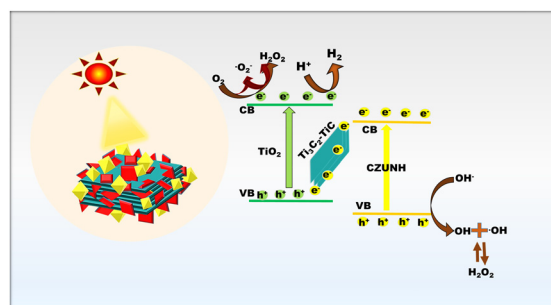
Bradley P. Kirk, Amira R. Alghamdi, Matthew J. Griffith, Xun Pan, Martyn Jevric, David A. Lewis, Gunther G. Andersson and Mats R. Andersson\*



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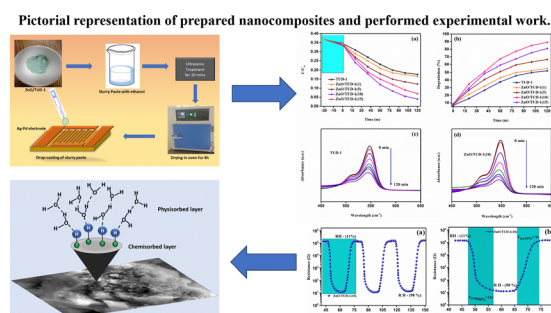
Lijarani Biswal, Suraj Prakash Tripathy, Srabani Dash, Sarmistha Das, Satyabrata Subudhi and Kulamani Parida\*



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### A three-dimensional ZnO/TUD-1 nanocomposite-based multifunctional sensor for humidity detection and wastewater remediation

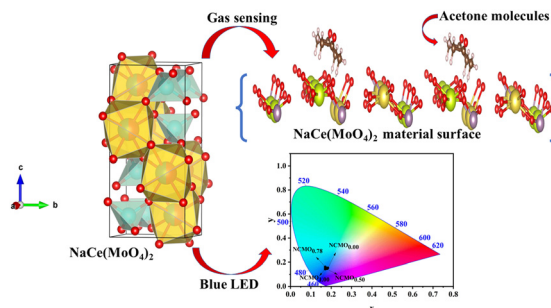
Aryan Boora, Surender Duhan,\* Bhavna Rohilla, Priya Malik, Supriya Sehrawat, M. S. Goyat, Yogendra Kumar Mishra and Vinod Kumar



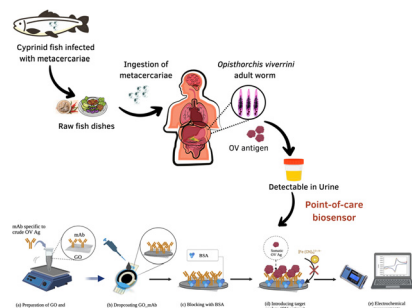
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### A truncated octahedron $\text{NaCe}(\text{MoO}_4)_2$ nanostructure: a potential material for blue emission and acetone sensing

Nibedita Haldar, Tanmoy Mondal, Tanushri Das, Debabrata Sarkar, Mrinal Pal, Asiful H. Seikh and Chandan Kumar Ghosh\*



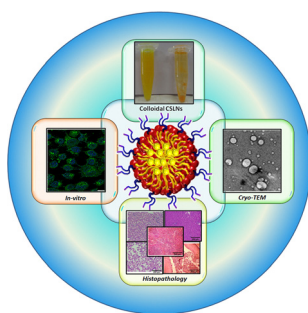
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### Functionalized graphene oxide–antibody conjugate-based electrochemical immunosensors to detect *Opisthorchis viverrini* antigen in urine

Nang Noon Shean Aye, Pornsuda Maraming, Patcharaporn Tippayawat, Sakda Daduang, Anchalee Techasen, Wassana Jammongkan, Paiboon Sithithaworn and Jureerut Daduang\*

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### Selective induction of apoptotic cell death in lung carcinoma cells by curcumin-loaded PEGylated lipid nanoparticles with minimal normal tissue toxicity: *in vitro* and *in vivo* toxicity evaluation by oral delivery

Bijaideep Dutta, Sourav Kumar Das, Mayur Temgire, Jayesh Bellare, K. C. Barick,\* Amit Kumar and P. A. Hassan\*

