

# Materials Advances

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### Cover

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### Inside cover

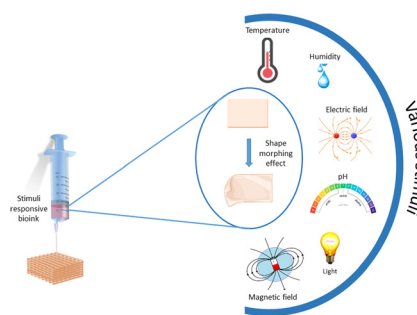
See Yuming Zhao *et al.*, pp. 214–227. Image reproduced by permission of Parinaz Salari and Yuming Zhao from *Mater. Adv.*, 2026, 7, 214.

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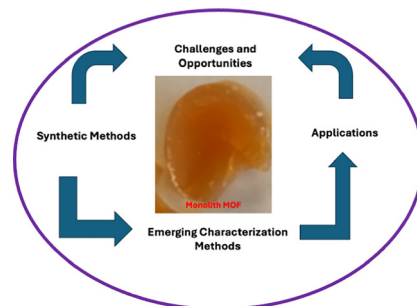
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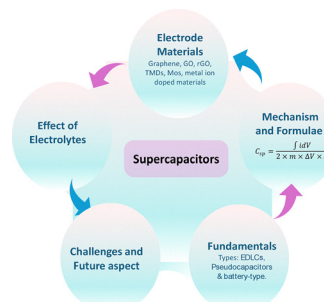
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Elemental answers



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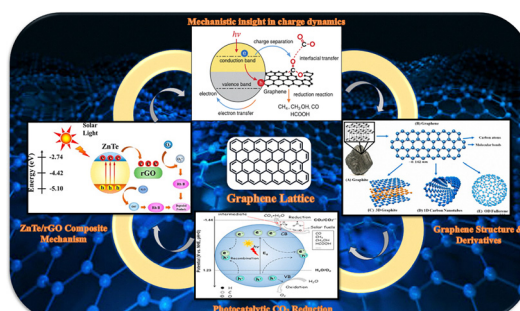
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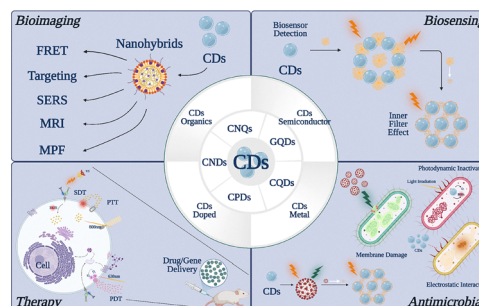
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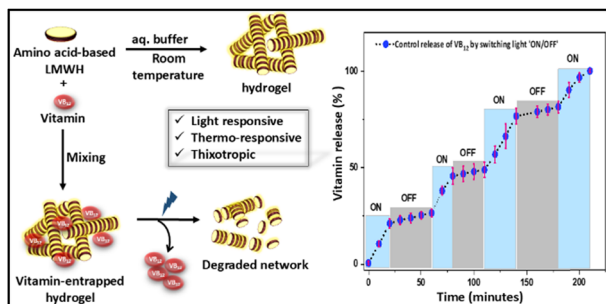
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Gyeongsu Seo, Byoung-su Kim, Hyeongu Lim, Jaewon Choi, Minse Kim, Hyungseok Lee\* and Hyun-Ouk Kim\*



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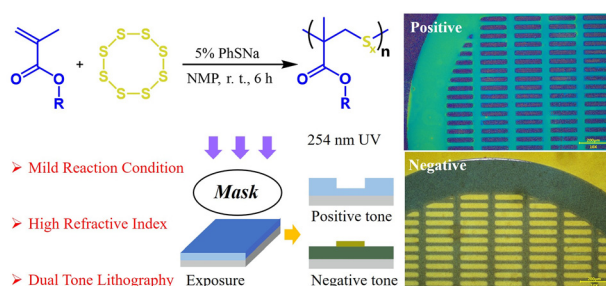
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Divya Chauhan and Chandan Maity\*

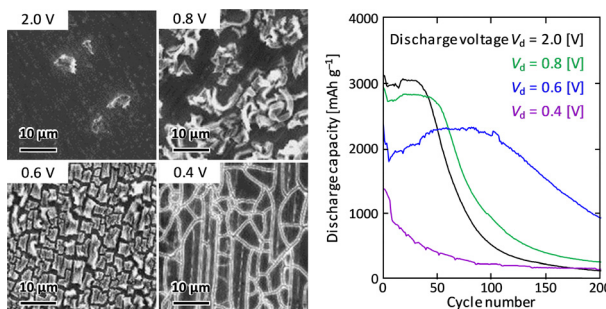
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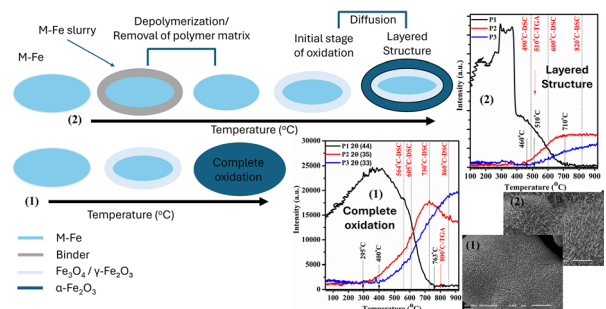


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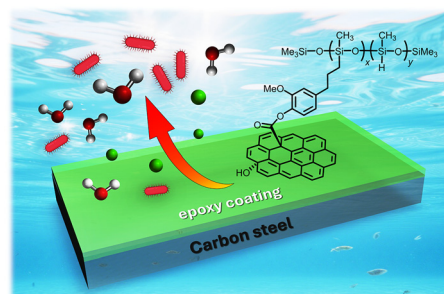
Supriya E. More,\* Suyog A. Raut, S. Premkumar, Somnath R. Bhopale, Davy Deduytsche, Sudha V. Bhoraskar, Mahendra A. More, Damien Thiry, Christophe Detavernier, Nathalie De Geyter, Vikas L. Mathe\* and Rino Morent



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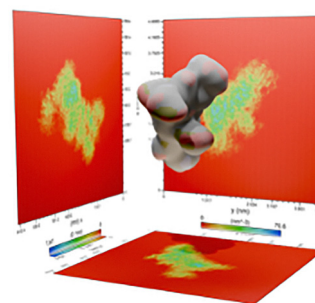
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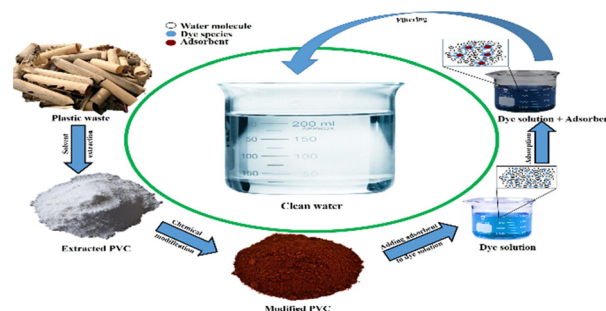
Anne-Sylvie Fabiano Tixier,\* Nicolas Michel,\* Rosaria Ciriminna,\* Giovanna Li Petri, Giuseppe Angellotti, Ana Rosa Garcia\* and Mario Pagliaro\*



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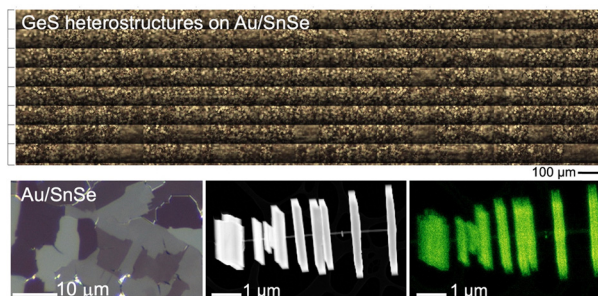
Lokman Hosen, Md Abdul Goni,\* Most. Johura Khatun and Sharmeen Nishat\*



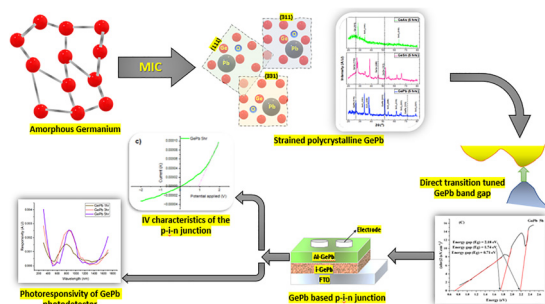
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### GeS mixed-dimensional 1D nanowire–2D plate heterostructures on van der Waals substrates

Eli Sutter\* and Peter Sutter



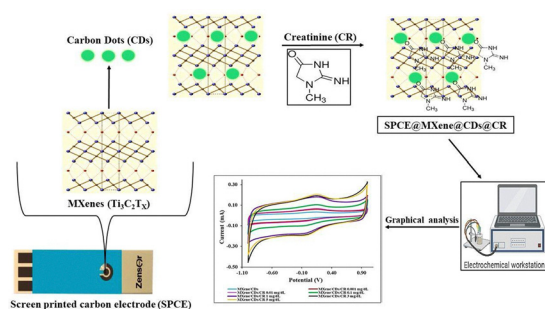
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### Thermal evaporation fabrication of UV-NIR p-i-n photodetectors based on highly tensile-strained Ge via incorporation of Pb rather than Sn and As

Mohamed A. Nawwar,\* Abdelhamid El-Shaer, Mohamed Y. Saeed, Magdy S. Abo Ghazala, Ahmed Mourtada Elseman and Abd El-Hady B. Kashyout\*

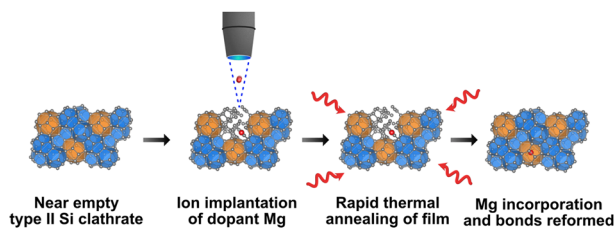
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### Electrochemical nanosensors using MXene-carbon dot modified screen-printed carbon electrodes for creatinine detection in serum samples

Poornima Bhatt, Monika Chhillar, Anup Singh, Deepak Kukkar,\* Ashok Kumar, Ashok Kumar Yadav, Jaskiran Kaur and Manil Kukkar\*

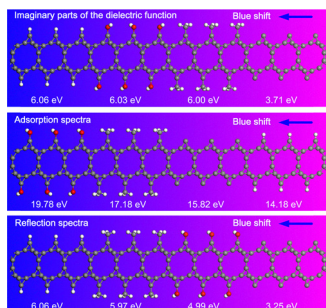
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### Ion implantation of magnesium guests into type II silicon clathrate films: an alternate approach to doping a cage-like silicon allotrope

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### A planar T-carbon structure with tunable electric and optical properties via chemical decorations on the (111) plane: a first-principles investigation

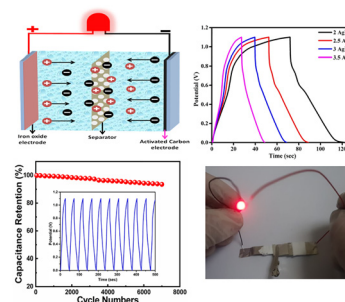
Haifang Cai, Zhiwen Duan, Kun Cai,\* Douglas S. Galvao\* and Qinghua Qin\*



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### Electrochemical evaluation of anodic galvanized-iron nanoparticles as electrode materials for supercapacitors

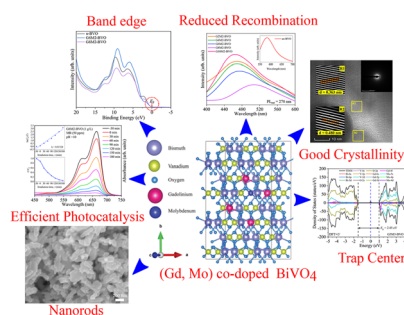
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### Unveiling photocatalytic functionalities of (Gd<sup>3+</sup>, Mo<sup>6+</sup>) co-doped BiVO<sub>4</sub> nanoparticles: an experimental–DFT approach

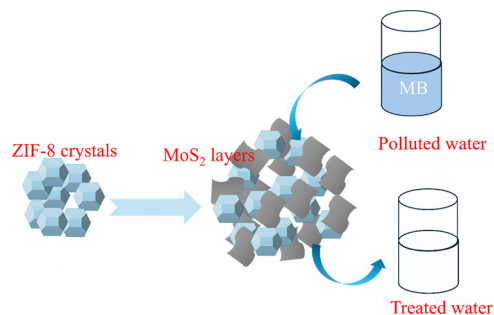
Nusaibah Ehsan, Md. Rafatul Haq, Sadiq Shahriyar Nishat, Quazi Shafayat Hossain, Shirin Akter Jahan, M. N. I. Khan, Umme Sarmeen Akhtar, Muhammad Shahriar Bashar, H. N. Das, Dipa Islam, Md. Zakir Sultan, Sharmin Jahan, Khandker Saadat Hossain and Imtiaz Ahmed\*



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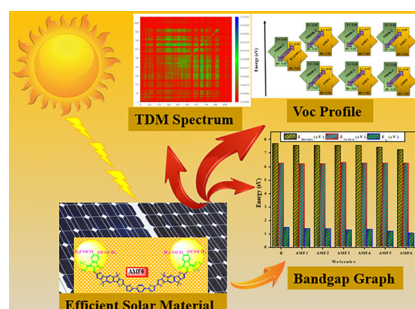
Rofaida F. H. Darweesh, Remon M. Zaki, Aldoshy Mahdy and Abdelaal S. A. Ahmed\*



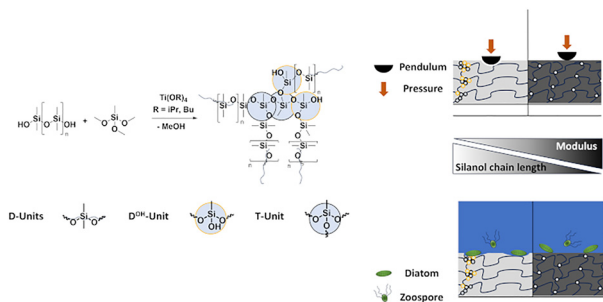
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Roman Azeem and Muhammad Ramzan Saeed Ashraf Janjua\*



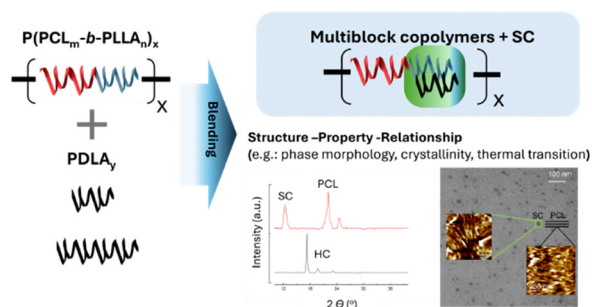
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### Reducing attachment of marine diatoms and bacteria by fine tuning the modulus of PDMS based coatings

Thorsten Marochow, Lejla Jusufagic, John A. Finlay, Peter Allen, Anthony S. Clare and Axel Rosenhahn\*

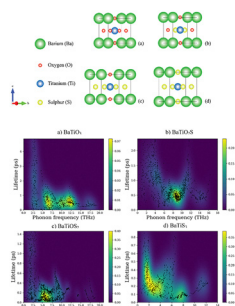
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### Correlative characterization of stereocomplex formation in blends of aliphatic polyester P(PCL<sub>m</sub>-b-PLLA<sub>n</sub>) multiblock-copolymers and PDLA

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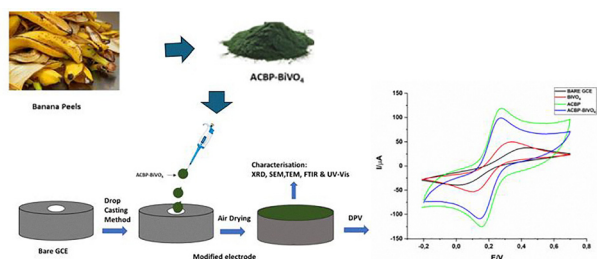
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U. Ahmed, M. M. Hossian, M. M. Uddin, N. Jahan and M. A. Ali\*

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### Synergistic electrochemical detection of ciprofloxacin using bismuth vanadate nanocomposite-modified activated carbon derived from banana peel biomass

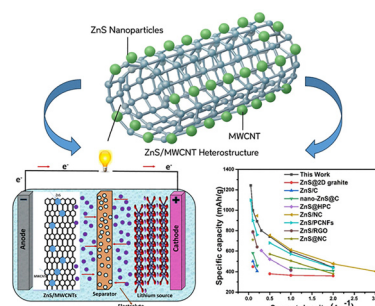
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## A synergistic ZnS/MWCNT heterostructure as an advanced electrode for high-performance, long-cycle life lithium-ion batteries: experimental and DFT insights

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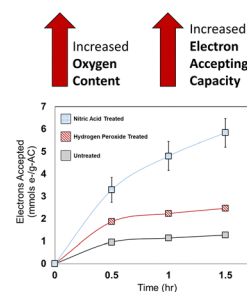
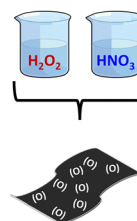


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## Enhancing short-term electron exchange in pyrogenic carbonaceous materials through post-pyrolysis oxidative treatments

Ethan Quinn, Detlef R. U. Knappe and Douglas F. Call\*

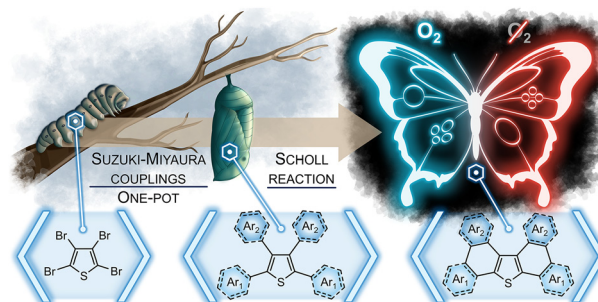
Activated carbon cloth treated with chemical oxidizers results in increased oxygen containing moieties



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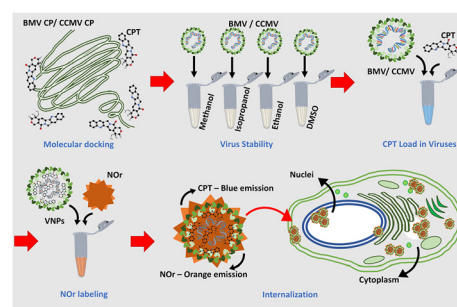
Clara Fabregat, Roger Bujaldón,\* Silvia Oliva, Jaume Garcia-Amorós, Dmytro Volyniuk, Melika Ghasemi, Juozas V. Grazulevicius, Joaquim Puigdollers and Dolores Velasco\*



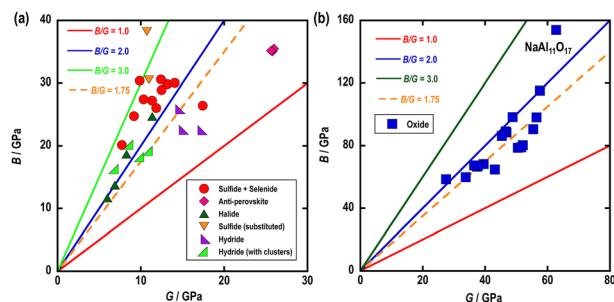
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## The solvent stability of bromovirus allows for delivery of hydrophobic chemotherapeutic drugs

Elizabeth Loredó-García, M. Mariana Herrera-Hernandez, Carlos Medrano-Villagómez, Pierrick G. J. Fournier, Ana G. Rodríguez-Hernández, Marcos Loredó-Tovías, Jaime Ruiz-García, Bogdan Dragnea and Ruben D. Cadena-Nava\*



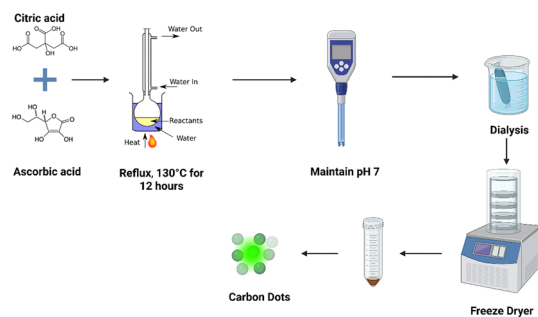
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### Elastic properties of diverse sodium-ion conductive materials: a first-principles study

Masato Torii, Atsushi Sakuda,\* Kota Motohashi and Akitoshi Hayashi

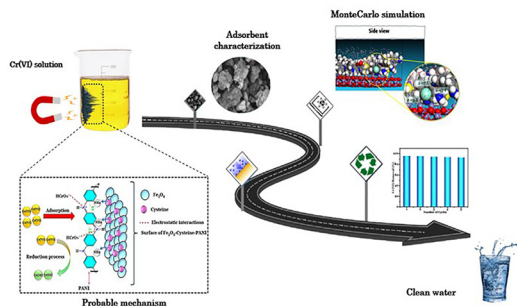
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### Selective cellular uptake and cytotoxicity effects of fluorescent carbon dots: a comparative study in cancer and normal cells

Ankesh Kumar, Raghu Solanki, Geethu Prakash, Abdulkhalik Mansuri, Ashutosh Kumar, Dhiraj Bhatia\* and Pankaj Yadav\*

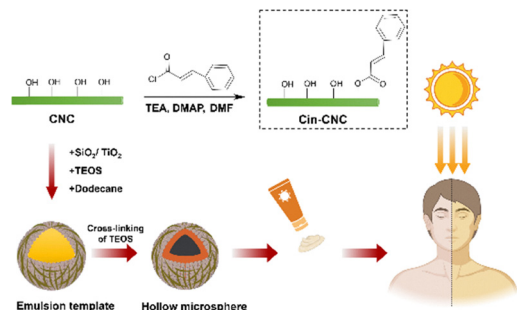
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### Tailored magnetic hybrid composites with recoverable properties for efficient Cr(VI) adsorption and reduction: a synergistic experimental and theoretical study

Abdelaziz Imgharn,\* Mohammed Elhoudi, Samira El omari, Kamal Ait El Bacha, Mohamed Laabd, Lahcen Bazzi and Abdallah Albourine

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### High-performance hollow microspheres for UV protection from cinnamate-functionalized cellulose nanocrystals and inorganic nanoparticles

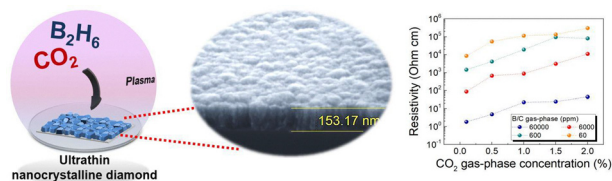
Fangyuan Ge, Man-hin Kwok\* and To Ngai\*



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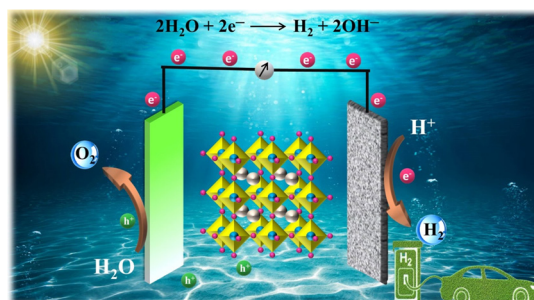
P. Ashcheulov,\* M. Davydova, A. Taylor, P. Hubík, A. Kovalenko, J. Kopeček, L. Fekete and Z. Weiss



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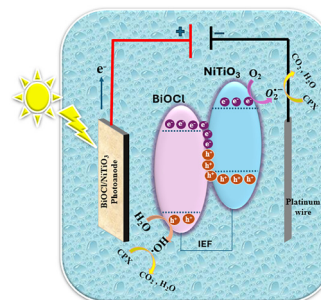
Hosakote Shankar Anusha, Vodeti Rajeshwar, Usha Jinendra, Jagadeep Chandra S, Elayaperumal Sumitha, Basavarajappa Sannappa Hanumanthappa, Vinod Divya, Mohammad Khalid, Shadma Wahab, Kotermane Mallikarjunappa Anilkumar,\* Peter R. Makgwane, Honnegowdanahalli Shivabasappa Nagendra Prasad and Harikaranahalli Puttaiah Shivaraju\*



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### Integrated hierarchical Z-scheme BiOCl/NiTiO<sub>3</sub> heterostructured photoanode and its photoelectrocatalytic application in ciprofloxacin degradation

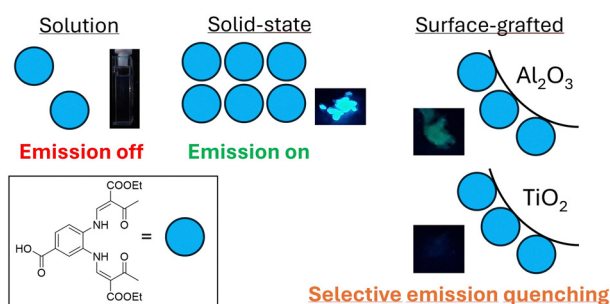
Babatope O. Ojo\* and Nonhlangabezo Mabuba\*



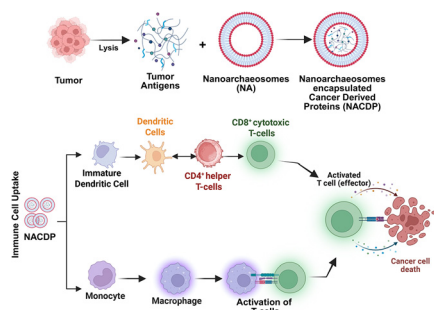
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### Metal oxide hybrid materials: on-surface modulation of aggregation-induced fluorescence

Hannah Kurz,\* Florian Daumann, Jana Timm, Tobias Seifert, Phil Köhler, Frank W. Heinemann, Gerald Hörner, Roland Marschall\* and Birgit Weber\*



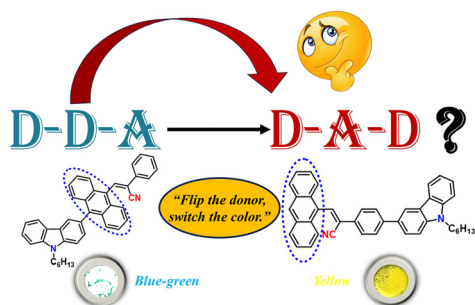
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## Nanoarchaeosomes loaded with tumor antigens elicit antigen-presenting cell activation and T cell response for cervical cancer immunotherapy

Abirami Seetharaman, Parimalanandhini Duraisamy, Subastri Ariraman, Priya Ramanathan and Swathi Sudhakar\*

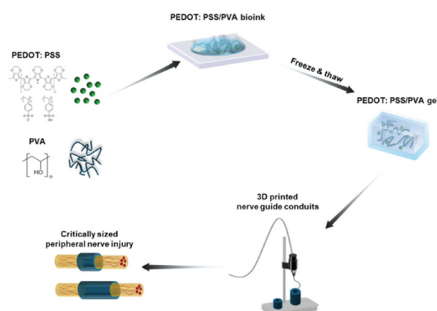
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## Donor positional inversion in carbazole–cyanostilbene conjugates: reorienting connectivity for solid-state color modulation

A. Afrin, U. Adithyamol and P. Chinna Ayya Swamy\*

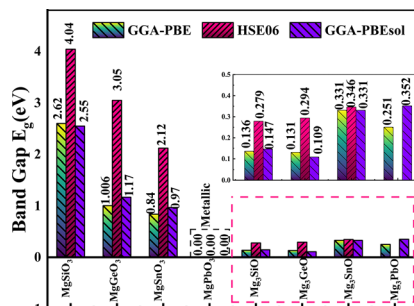
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## Engineering 3D-printed standalone conductive nerve guides using soft bioinks for peripheral nerve injuries

Lin Li, Angel Hernandez, Ryan Grevsmuehl, Yu-Ting Kou and Shang Song\*

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## Compositional tuning and property evolution in cubic Mg-based perovskite and anti-perovskite compounds (MgBO<sub>3</sub> and Mg<sub>3</sub>BO<sub>3</sub>; B = Si, Ge, Sn, Pb): a comparative first-principles study for multifunctional device applications

Md. Rony Hossain,\* Mst. Shamima Khanom, Prianka Mondal, Akash Kumer Paul and Farid Ahmed

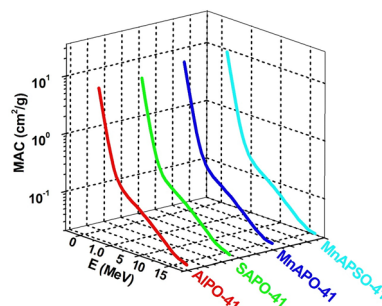


## PAPERS

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### Enhanced gamma-ray shielding performance of Mn and Si-substituted AlPO-41 zeolite frameworks: a pathway to lightweight high-density protective materials

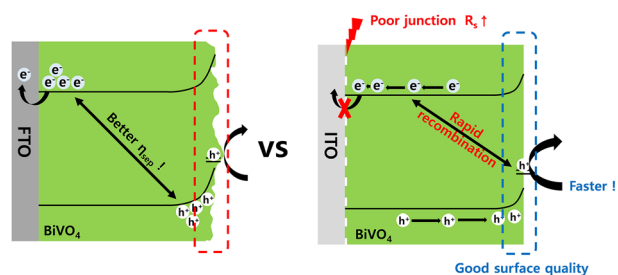
Z. Y. Khattari



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### Comparative assessment of FTO and ITO substrates for BiVO<sub>4</sub> photoanodes: superior surface quality enabling faster water oxidation in ITO

Yeon Gyo Shim, Yuki Nakatsukasa, Kana Matsumoto, Ji Eun Kim, Su Jin Kim, Seung Heon Choi, Seung Hyeon Jeong, Seong Kyu Jang, Aram Hong, Kenji Katayama and Woon Yong Sohn\*



## CORRECTIONS

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### Correction: Exploring 2D hexagonal WO<sub>3</sub>/COK-12 nanostructures for efficient humidity detection

Bhavna Rohilla, Aryan Boora, M. S. Goyat and Surender Duhan\*

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### Correction: 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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**Correction: Efficient photo-oxidation of bisphenol a and tetracycline through sulfur-doped g-C<sub>3</sub>N<sub>4</sub>/CD heterojunctions**

Ankoo Sura, Amanvir Singh, Arjun Singh, Sudha Narwal, Priya Malik, Manjeet Singh Goyat, Yogendra K. Mishra, Sonia Nain\* and Surender Duhan\*

