

Materials Advances

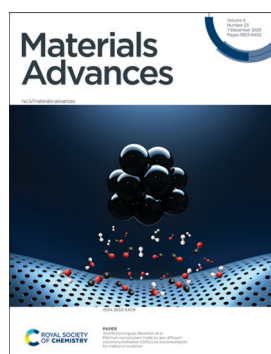
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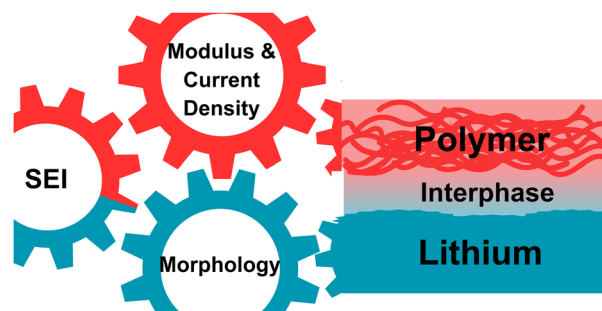
Inside cover
See Ashok M. Sajjan *et al.*, pp. 6192–6198. Image reproduced by permission of Ashok M. Sajjan from *Mater. Adv.*, 2023, 4, 6192.

PERSPECTIVE

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Understanding and controlling lithium morphology in solid polymer and gel polymer systems: mechanisms, strategies, and gaps

Kyra D. Owensby, Ritu Sahore, Wan-Yu Tsai and X. Chelsea Chen*

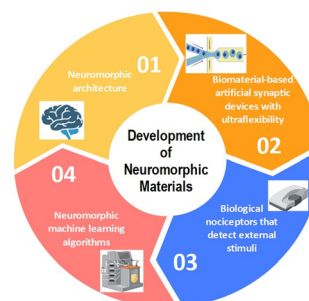


REVIEWS

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Computing of neuromorphic materials: an emerging approach for bioengineering solutions

Chander Prakash,* Lovi Raj Gupta, Amrinder Mehta, Hitesh Vasudev, Roman Tominov, Ekaterina Korman, Alexander Fedotov, Vladimir Smirnov and Kavindra Kumar Kesari*



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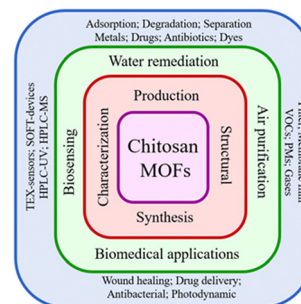


REVIEWS

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Chitosan/metal organic frameworks for environmental, energy, and bio-medical applications: a review

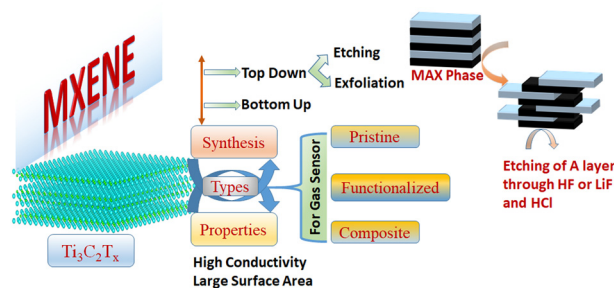
Akash Balakrishnan, Meenu Mariam Jacob, Nanditha Dayanandan, Mahendra Chinthala,* Muthamilselvi Ponnuchamy, Dai-Viet N. Vo,* Sowmya Appunni and Adaikala Selvan Gajendhran



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Unveiling the potential of $Ti_3C_2T_x$ MXene for gas sensing: recent developments and future perspectives

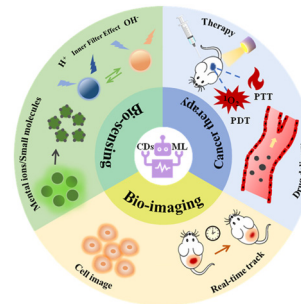
Nitesh K. Chourasia, Ankita Rawat, Ritesh Kumar Chourasia, Hemant Singh, Ramesh Kumar Kulriya, Vinod Singh and Pawan Kumar Kulriya*



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Utilizing machine learning to expedite the fabrication and biological application of carbon dots

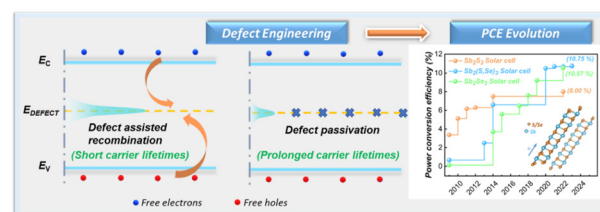
Yaoyao Tang, Quan Xu,* Peide Zhu, Rongye Zhu and Juncheng Wang*



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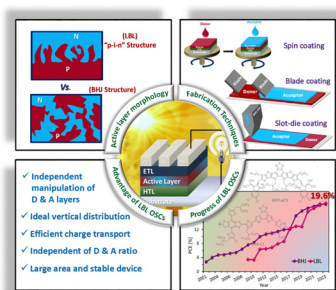
A comprehensive insight into deep-level defect engineering in antimony chalcogenide solar cells

Swapnil Barthwal, Siddhant Singh, Abhishek K. Chauhan, Nimitha S. Prabhu, Akila G. Prabhudessai and K. Ramesh*



REVIEWS

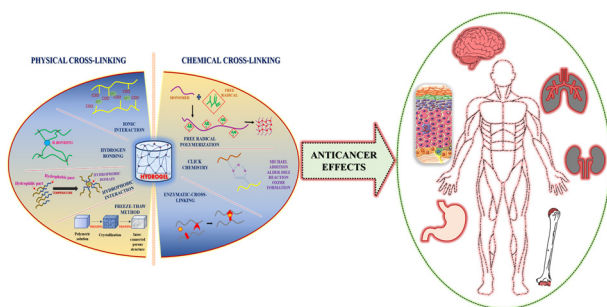
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Advances in layer-by-layer processing for efficient and reliable organic solar cells

Amaresh Mishra,* Nirmala Niharika Bhuyan,
Haijun Xu and Ganesh D. Sharma*

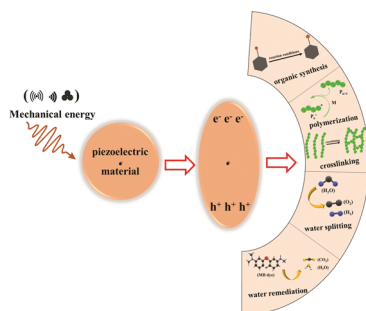
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Natural cationic polymer-derived injectable hydrogels for targeted chemotherapy

Sabya Sachi Das,* Devanshi Sharma,
Balaga Venkata Krishna Rao, Mandeep Kumar Arora,
Janne Ruokolainen, Mukesh Dhanka,
Hemant Singh and Kavindra Kumar Kesari*

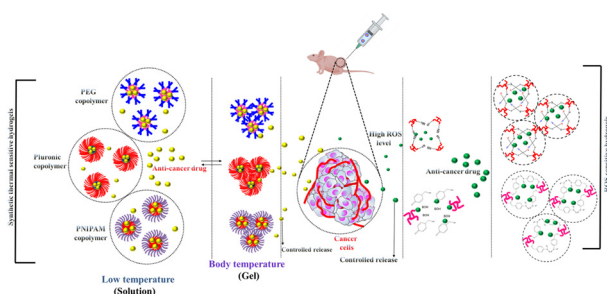
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Shadi Asgari, Ghodsi Mohammadi Ziarani,*
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Role of thermal and reactive oxygen species-responsive synthetic hydrogels in localized cancer treatment (bibliometric analysis and review)

Yohannis Wondwosen Ahmed, Hsieh-Chih Tsai,*
Tsung-Yun Wu, Haile Fentahun Darge and
Yu-Shuan Chen*

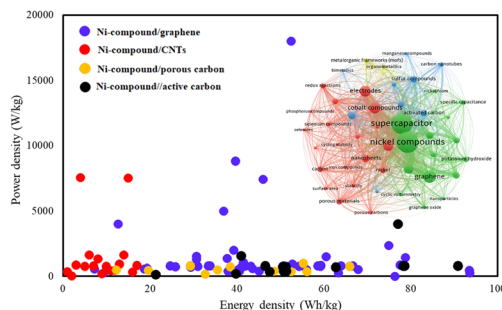


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Recent advances in Ni-materials/carbon nanocomposites for supercapacitor electrodes

Ghobad Behzadi Pour,* Hamed Nazarpour Fard, Leila Fekri Aval and Deepak Dubal

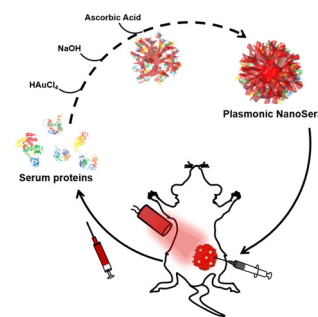


COMMUNICATION

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Plasmonic nanodendrites stabilized with autologous serum proteins for sustainable host specific photothermal tumor ablation

Mimansa, Smriti Bansal, Pranjali Yadav and Asifkhan Shanavas*

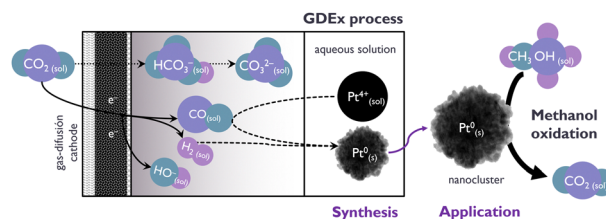


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Platinum nanoclusters made by gas-diffusion electrocrystallization (GDEx) as electrocatalysts for methanol oxidation

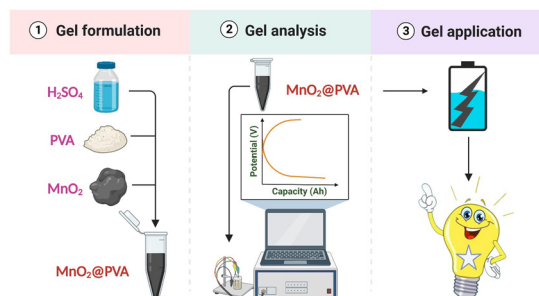
Omar Martinez-Mora, Luis F. Leon-Fernandez, Milica Velimirovic, Frank Vanhaecke, Kristof Tirez, Jan Fransaer and Xochitl Dominguez-Benetton*



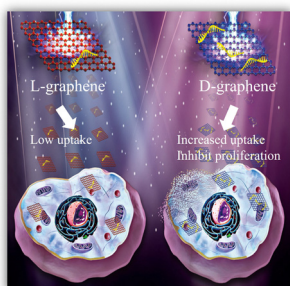
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The state of understanding of the electrochemical behaviours of a valve-regulated lead–acid battery comprising manganese dioxide-impregnated gel polymer electrolyte

Bipin S. Chikkatti, Ashok M. Sajjan* and Nagaraj R. Banapurmath



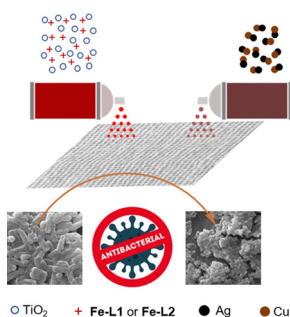
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One-step simultaneous liquid phase exfoliation-induced chirality in graphene and their chirality-mediated microRNA delivery

Pranav, Eswara N. H. K. Ghali, Neeraj Chauhan, Rahul Tiwari, Marco Cabrera, Subhash C. Chauhan and Murali M. Yallapu*

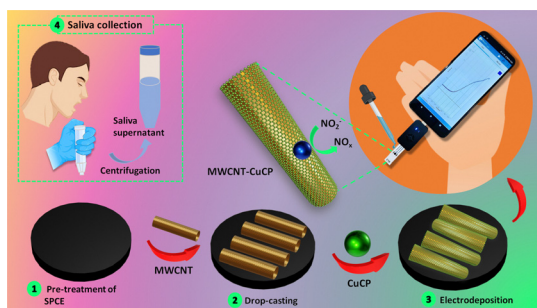
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Oxide anchored multi-charged metal complexes with binary nanoparticles for stable and efficient anti-bacterial coatings on cotton fabrics

Anjali Nirmala, Suja Pottath, Adarsh Velayudhanpillai Prasannakumari, Valan Rebinro Gnanaraj, Jubi Jacob, B. S. Dileep Kumar, Saju Pillai, Rajeev Kumar Sukumaran,* U. S. Hareesh,* Ayyappanpillai Ajayaghosh* and Sreejith Shankar*

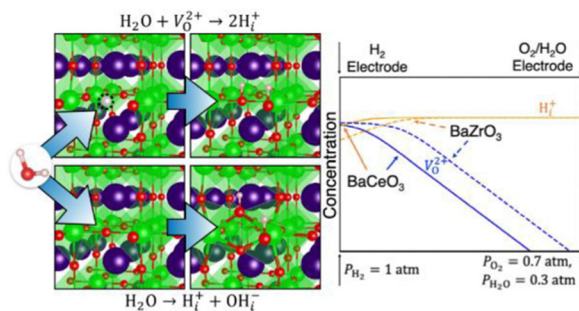
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Enzyme mimetic electrochemical sensor for salivary nitrite detection using copper chlorophyllin and carbon nanotubes-functionalized screen printed electrodes

Sriraja Subhasri Paramasivam, Siva Ananth Mariappan, Niroj Kumar Sethy and Pandiaraj Manickam*

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Incorporation of protons and hydroxide species in BaZrO₃ and BaCeO₃

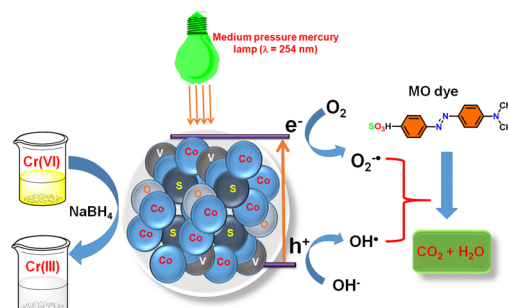
Andrew J. E. Rowberg,* Meng Li, Tadashi Ogitsu and Joel B. Varley



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Cobalt oxide decked with inorganic-sulfur containing vanadium oxide for chromium(vi) reduction and UV-light-assisted methyl orange degradation

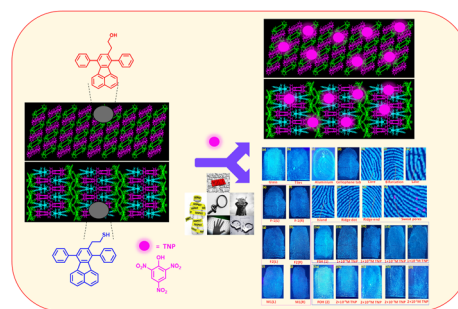
Sayanika Saikia, Manoshi Saikia, Salma A. Khanam, Seonghwan Lee, Young-Bin Park, Lakshi Saikia, Gautam Gogoi and Kusum K. Bania*



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Fluoranthene-based derivatives for multimodal anti-counterfeiting and detection of nitroaromatics

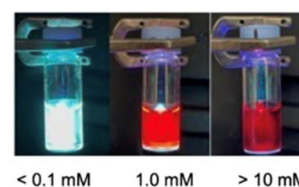
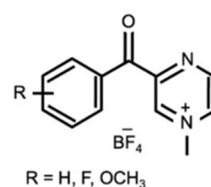
Kasthuri Selvaraj, Prasanth Palanisamy, Marimuthu Manikandan, Praveen B. Managutti, Palanivelu Sangeetha, Sharmarke Mohamed, Rajesh Pamanji, Joseph Selvin, Sohrab Nasiri, Stepan Kment and Venkatramaiah Nutalapati*



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Concentration-dependent emission from low molecular weight benzoyl pyrazinium salts

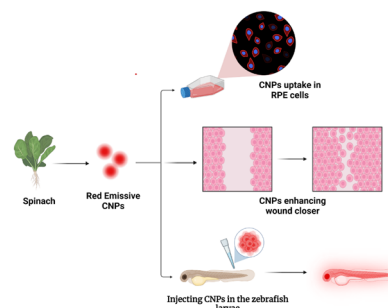
Ryan P. Brisbin, Arya Karappilly Rajan, Md. Imran Khan, Praviyen S. Rajaram, Karen M. Russell, Sayantani Ghosh* and Ryan D. Baxter*



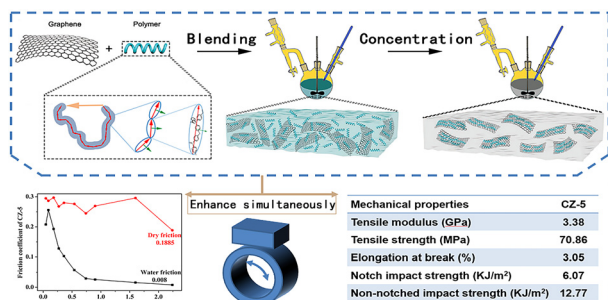
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Red fluorescent carbon nanoparticles derived from *Spinacia oleracea* L.: a versatile tool for bioimaging and biomedical applications

Ketki Barve, Udisha Singh, Pankaj Yadav, Krupa Kansara, Payal Vaswani, Ashutosh Kumar and Dhiraj Bhatia*



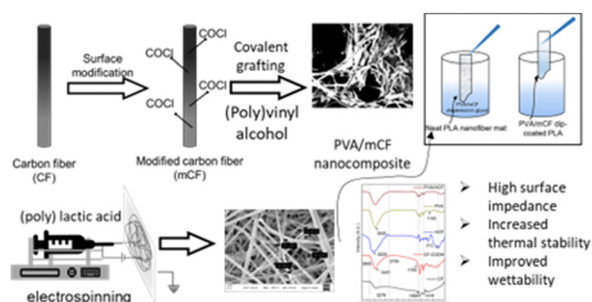
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Uniformly distributed graphite with dual attributes to achieve enhanced mechanical and tribological properties of PEK-C/graphite composites *via* a precipitation method

Zengwen Cao, Zhipeng Wang* and Guangyuan Zhou*

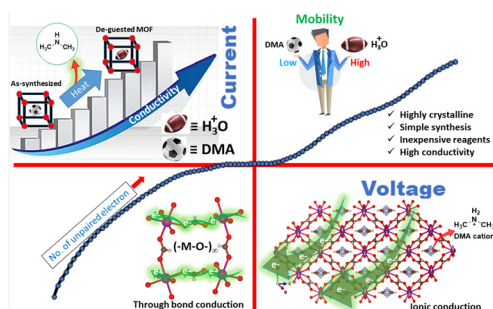
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Fabrication and characterization of conductive electrospun nanofiber mats of carbon nanofiber/poly(vinyl alcohol)/poly(lactic acid) ternary nanocomposites for flexible electronics applications

Victor K Sharma, Gourhari Chakraborty, Soundararajan Narendren and Vimal Katiyar*

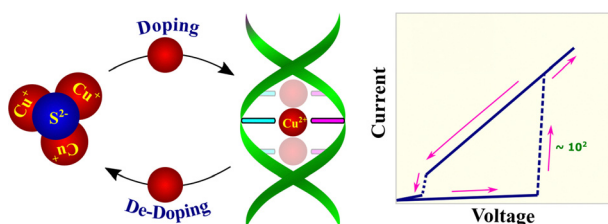
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Highly conductive three-dimensional metal organic frameworks from small *in situ* generated ligands

Uddit Narayan Hazarika, Jhorna Borah, Arobinda Kakoti, Rinki Brahma, Kangkan Sarmah, Ankur Kanti Guha and Prithviraj Khakhlary*

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Soft grafting of DNA over hexagonal copper sulfide for low-power memristor switching

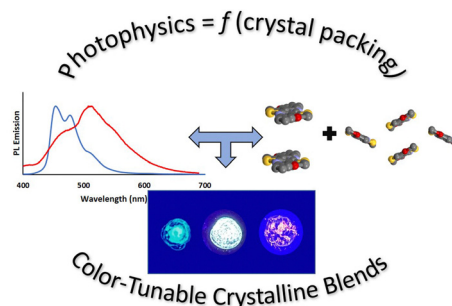
Smita Gajanan Naik, M. K. Rabinal* and Shouvik Datta



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Correlating structure and photophysical properties in thiazolo[5,4-d]thiazole crystal derivatives for use in solid-state photonic and fluorescence-based optical devices

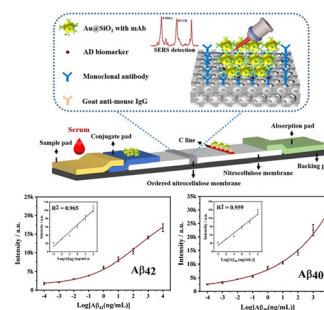
Abhishek Shibu, Sean Jones, P. Lane Tolley, David Diaz, Carly O. Kwiatkowski, Daniel S. Jones, Jessica M. Shivas, Jonathan J. Foley IV, Thomas A. Schmedake and Michael G. Walter*



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A nanostructured lateral flow immunoassay strip combined with Au@SiO₂ SERS nanotags for multiplex biomarker detection

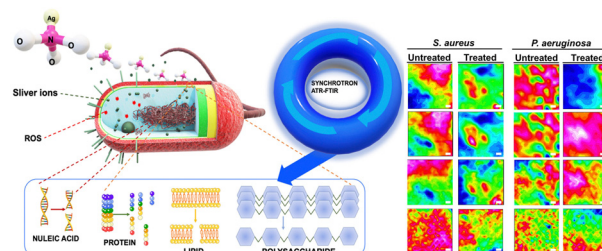
Geng Zhu, Yuanbao Zhan, Yu Lu, Fei Zheng, Yu Wan, Bing Liu, Xi Yang, Yanhui Wan, Qingjiang Sun, Jingjie Sha, Yan Huang* and Xiangwei Zhao*



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Synchrotron macro ATR-FTIR micro-spectroscopy to unlock silver ion-induced biochemical alterations in bacteria

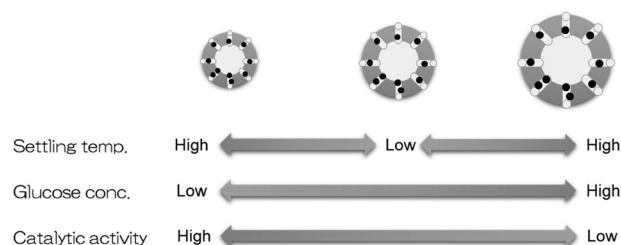
Tien Thanh Nguyen, Ngoc Huu Nguyen, Giang Tuyet Pham, Jitraporn Vongsivut, Melissa H. Brown, Vi Khanh Truong* and Krasimir Vasilev*



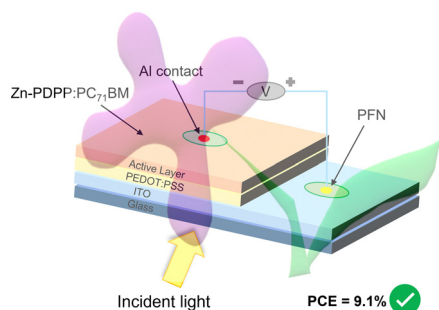
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The particle size control of ruthenium-encapsulated hollow silica sphere catalysts for the hydrogenation of carbon dioxide into formic acid

Tetsuo Umegaki,* Eiji Nagakubo, Kenjiro Saeki and Yoshiyuki Kojima



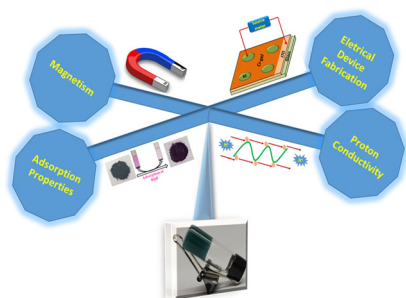
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Aza-benzannulated-perylenebisimide-porphyrin dyad as an intensely absorbing donor in bulk-heterojunction organic solar cells

Ayushi Kaushik, Subhrajyoti Bhandary, Ganesh D. Sharma* and Jeyaraman Sankar*

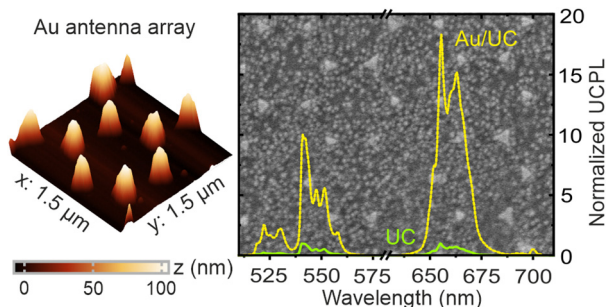
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The synthesis and combined electrical–magnetic and toxic dye sequestration properties of a Cr(III)-metallogel

Krishna Sundar Das, Mainak Das, Sayan Saha, Amit Adhikary, Sukhen Bala, Partha Pratim Ray* and Raju Mondal*

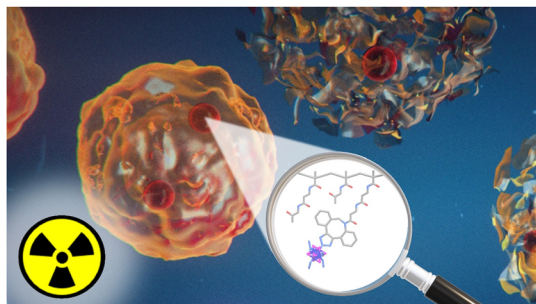
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Enhancement of upconversion photoluminescence in phosphor nanoparticle thin films using metallic nanoantennas fabricated by colloidal lithography

Thi Tuyen Ngo, Jose M. Viaña, Manuel Romero, Mauricio E. Calvo, Gabriel Lozano* and Hernán Míguez*

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Radiosensitizing molybdenum iodide nanoclusters conjugated with a biocompatible N-(2-hydroxypropyl)methacrylamide copolymer: a step towards radiodynamic therapy

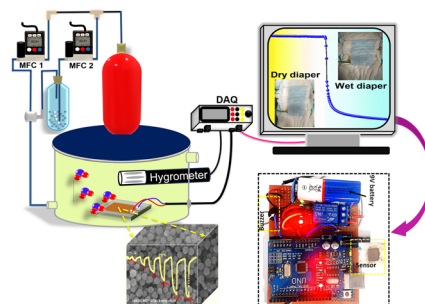
Kaplan Kirakci,* Robert Pola,* Marina Rodrigues Tavares, Michal Pechar, Tomáš Příbyl, Ivana Křížová, Jaroslav Zelenka, Tomáš Ruml, Tomáš Etrych and Kamil Lang



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The emergence of MnFe_2O_4 nanosphere-based humidity sensor: a methodical investigation by scanning Kelvin probe and its deployment in multitudinous applications

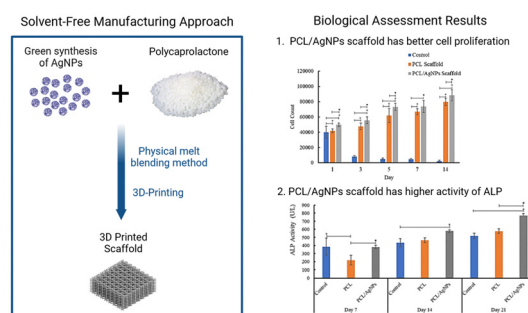
Rahul S. Ghuge, Manish D. Shinde, V. Hajeesh Kumar, Sudhir S. Arbuj, Velappa Jayaraman Surya, Sunit B. Rane,* Corrado Di Natale and Yuvaraj Sivalingam*



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Osteogenic potential of a 3D printed silver nanoparticle-based electroactive scaffold for bone tissue engineering using human Wharton's jelly mesenchymal stem cells

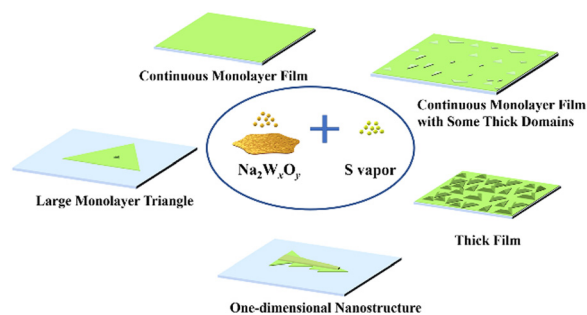
Mira Mira, Arie Wibowo,* Gusti Umindya Nur Tajalla, Glen Cooper, Paulo Jorge Da Silva Bartolo and Anggraini Barlian*



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Further insights into the Na_2WO_4 -assisted synthesis method for WS_2

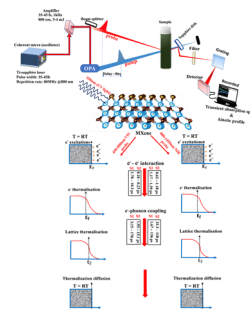
Changyong Lan,* Xinyu Jia, Yiyang Wei, Rui Zhang, Shaofeng Wen, Chun Li, Yi Yin and Johnny C. Ho



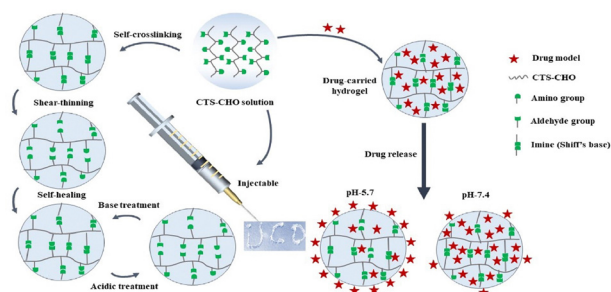
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Investigation of charge carrier dynamics in a $\text{Ti}_3\text{C}_2\text{T}_x$ MXene for ultrafast photonics applications

Ankita Rawat, Nitesh K. Chourasia, Saurabh K. Saini, Gaurav Rajput, Aditya Yadav, Ritesh Kumar Chourasia, Govind Gupta and P. K. Kulriya*



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Stimuli-responsive chitosan-based injectable hydrogel for “on-demand” drug release

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CORRECTION

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Correction: DFT investigation of the oxygen reduction reaction over nitrogen (N) doped graphdiyne as an electrocatalyst: the importance of pre-adsorbed OH* and the solvation effect

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