

Materials Advances

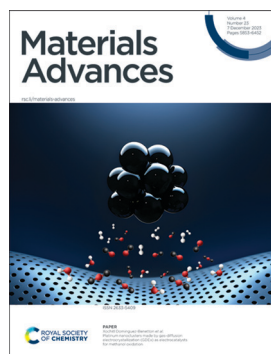
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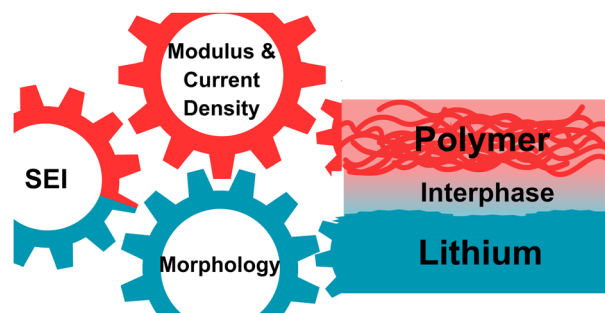
See Ashok M. Sajjan *et al.*, pp. 6192–6198. Image reproduced by permission of Ashok M. Sajjan from *Mater. Adv.*, 2023, 4, 6192.

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*

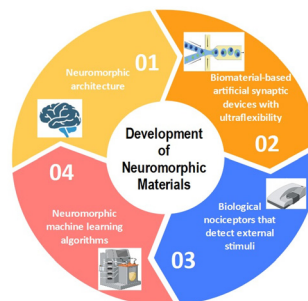


REVIEWS

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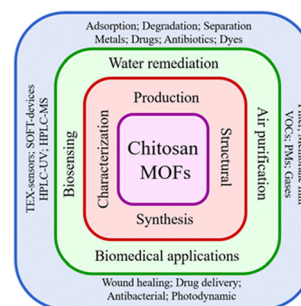
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Chitosan/metal organic frameworks for environmental, energy, and bio-medical applications: a review

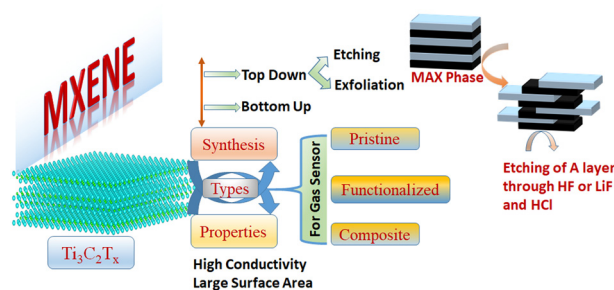
Akash Balakrishnan, Meenu Mariam Jacob, Nanditha Dayanandan, Mahendra Chinthala,* Muthamilselvi Ponnuchamy, Dai-Viet N. Vo,* Sowmya Appunni and Adaikala Selvan Gajendhran



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

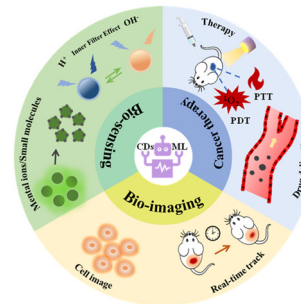
Nitesh K. Chourasia, Ankita Rawat, Ritesh Kumar Chourasia, Hemant Singh, Ramesh Kumar Kulriya, Vinod Singh and Pawan Kumar Kulriya*



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

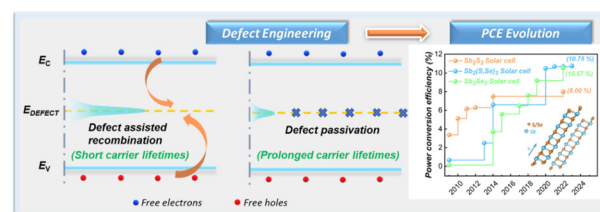
Yaoyao Tang, Quan Xu,* Peide Zhu, Rongye Zhu and Juncheng Wang*



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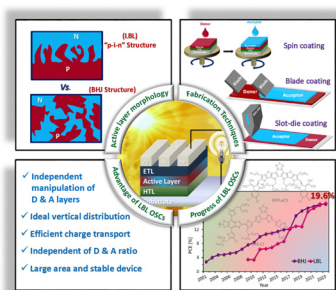
A comprehensive insight into deep-level defect engineering in antimony chalcogenide solar cells

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



REVIEWS

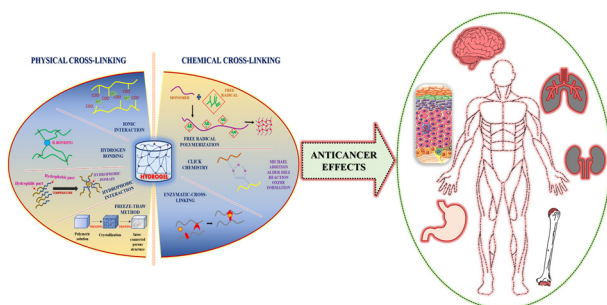
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Advances in layer-by-layer processing for efficient and reliable organic solar cells

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

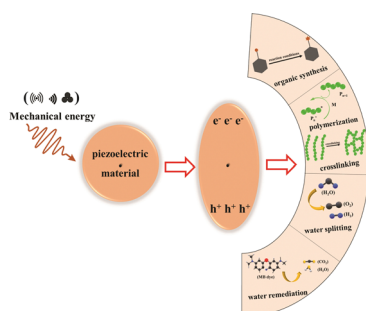
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Natural cationic polymer-derived injectable hydrogels for targeted chemotherapy

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

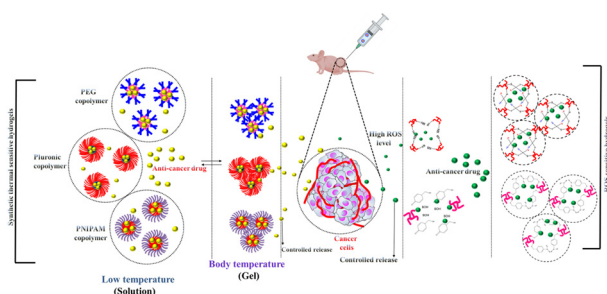
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Electron/hole piezocatalysis in chemical reactions

Shadi Asgari, Ghodsi Mohammadi Ziarani,* Alireza Badiei* and Siavash Iravani*

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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*

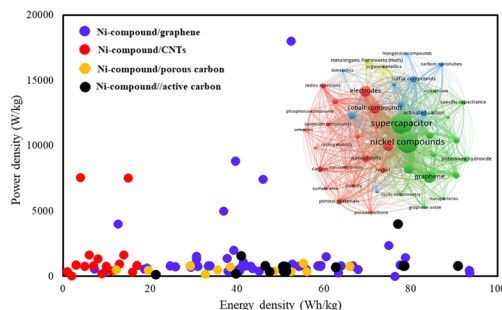


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Recent advances in Ni-materials/carbon nanocomposites for supercapacitor electrodes

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

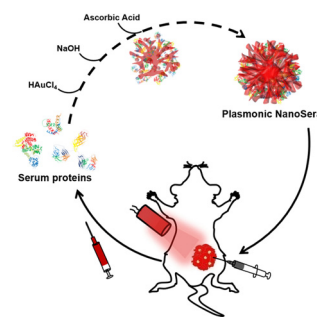


COMMUNICATION

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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*

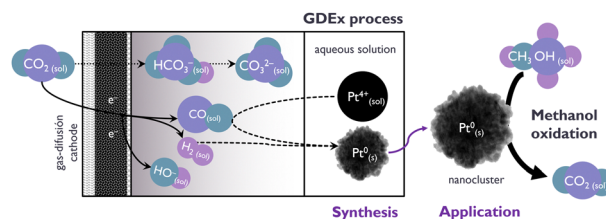


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Platinum nanoclusters made by gas-diffusion electrocrystallization (GDEx) as electrocatalysts for methanol oxidation

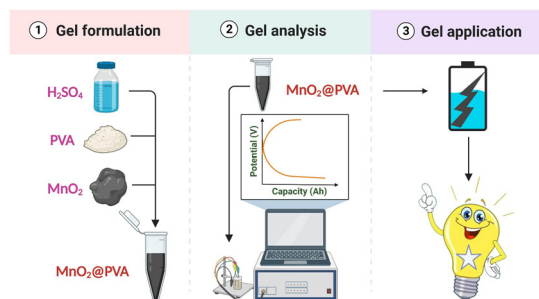
Omar Martinez-Mora, Luis F. Leon-Fernandez, Milica Velimirovic, Frank Vanhaecke, Kristof Tirez, Jan Fransaer and Xochitl Dominguez-Benetton*



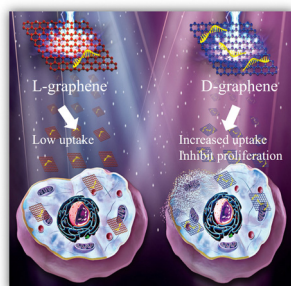
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The state of understanding of the electrochemical behaviours of a valve-regulated lead–acid battery comprising manganese dioxide-impregnated gel polymer electrolyte

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



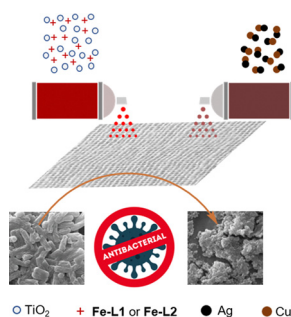
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One-step simultaneous liquid phase exfoliation-induced chirality in graphene and their chirality-mediated microRNA delivery

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

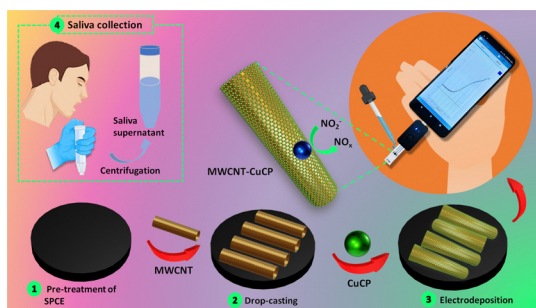
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Oxide anchored multi-charged metal complexes with binary nanoparticles for stable and efficient anti-bacterial coatings on cotton fabrics

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*

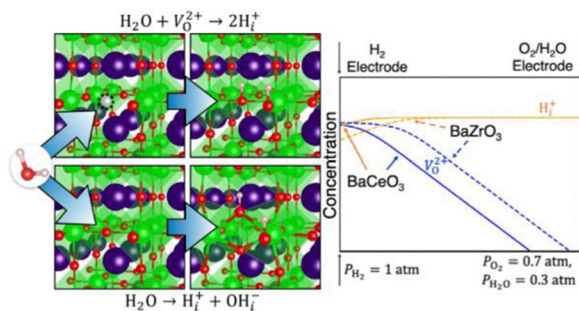
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Enzyme mimetic electrochemical sensor for salivary nitrite detection using copper chlorophyllin and carbon nanotubes-functionalized screen printed electrodes

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

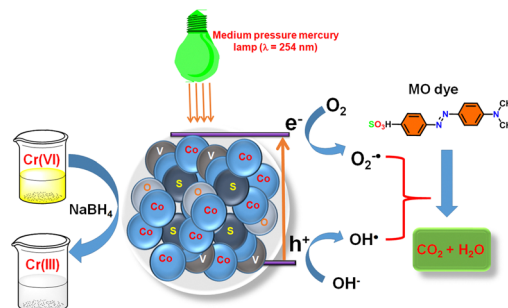
Andrew J. E. Rowberg,* Meng Li, Tadashi Ogitsu and Joel B. Varley



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

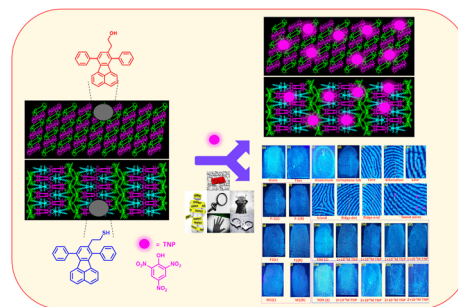
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Fluoranthene-based derivatives for multimodal anti-counterfeiting and detection of nitroaromatics

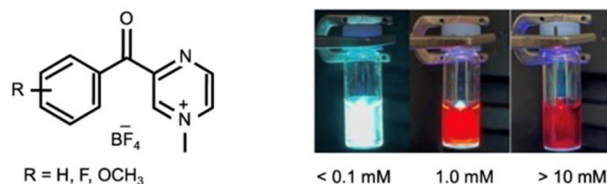
Kasthuri Selvaraj, Prasanth Palanisamy, Marimuthu Manikandan, Praveen B. Managutti, Palanivelu Sangeetha, Sharmarke Mohamed, Rajesh Pamanji, Joseph Selvin, Sohrab Nasiri, Stepan Kment and Venkatramaiah Nutalapati*



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Concentration-dependent emission from low molecular weight benzoyl pyrazinium salts

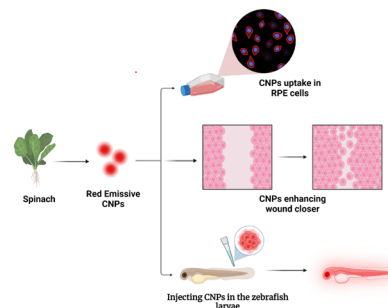
Ryan P. Brisbin, Arya Karappilly Rajan, Md. Imran Khan, Praviyen S. Rajaram, Karen M. Russell, Sayantani Ghosh* and Ryan D. Baxter*



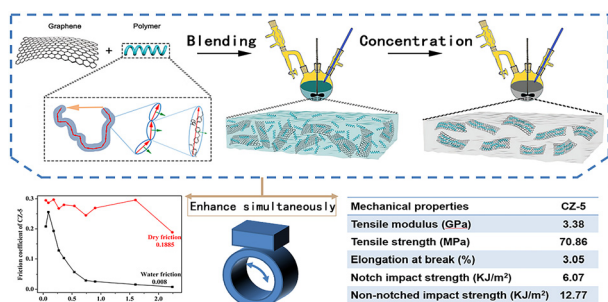
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Red fluorescent carbon nanoparticles derived from *Spinacia oleracea* L.: a versatile tool for bioimaging and biomedical applications

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



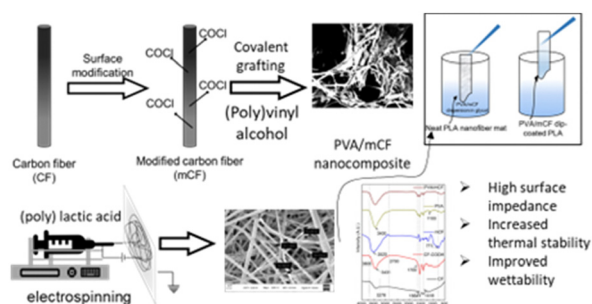
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Uniformly distributed graphite with dual attributes to achieve enhanced mechanical and tribological properties of PEK-C/graphite composites *via* a precipitation method

Zengwen Cao, Zhipeng Wang* and Guangyuan Zhou*

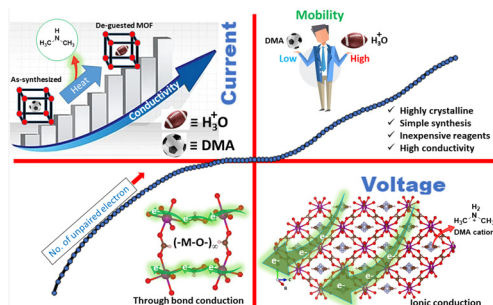
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Fabrication and characterization of conductive electrospun nanofiber mats of carbon nanofiber/poly(vinyl alcohol)/poly(lactic acid) ternary nanocomposites for flexible electronics applications

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

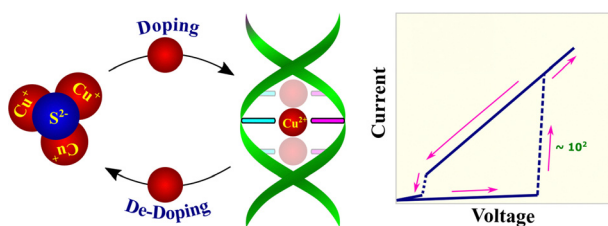
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Highly conductive three-dimensional metal organic frameworks from small *in situ* generated ligands

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

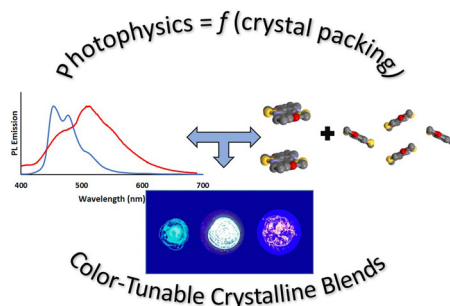
Smita Gajanan Naik, M. K. Rabinal* and Shouvik Datta



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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

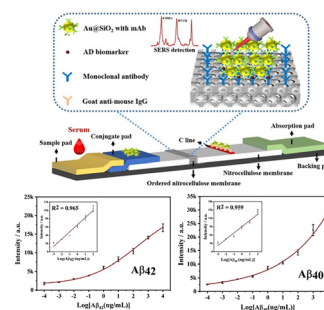
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A nanostructured lateral flow immunoassay strip combined with Au@SiO₂ SERS nanotags for multiplex biomarker detection

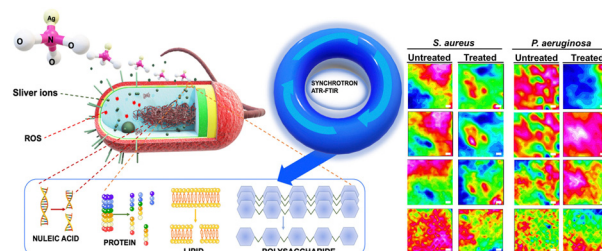
Geng Zhu, Yuanbao Zhan, Yu Lu, Fei Zheng, Yu Wan, Bing Liu, Xi Yang, Yanhui Wan, Qingjiang Sun, Jingjie Sha, Yan Huang* and Xiangwei Zhao*



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

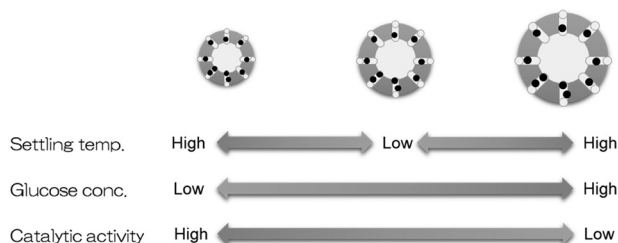
Tien Thanh Nguyen, Ngoc Huu Nguyen, Giang Tuyet Pham, Jitraporn Vongsivut, Melissa H. Brown, Vi Khanh Truong* and Krasimir Vasilev*



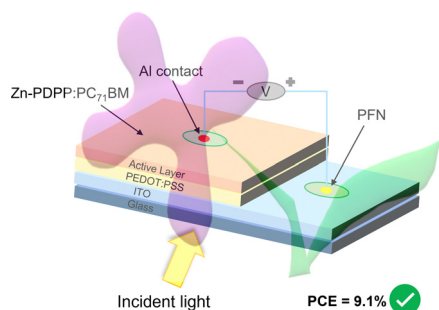
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The particle size control of ruthenium-encapsulated hollow silica sphere catalysts for the hydrogenation of carbon dioxide into formic acid

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



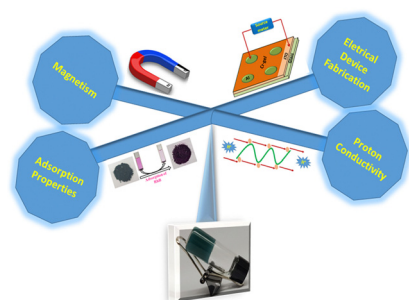
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Aza-benzannulated-perylenebisimide-porphyrin dyad as an intensely absorbing donor in bulk-heterojunction organic solar cells

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

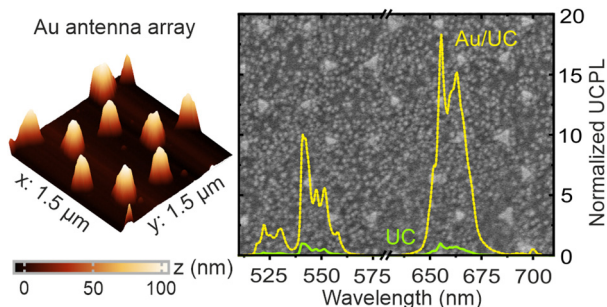
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The synthesis and combined electrical–magnetic and toxic dye sequestration properties of a Cr(III)-metallogel

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

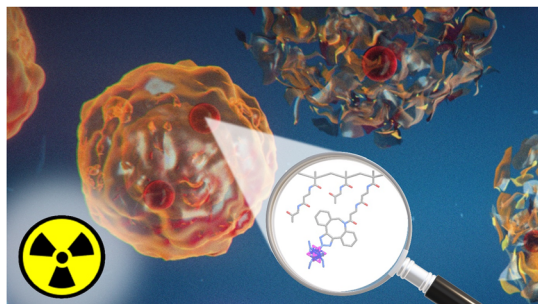
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Enhancement of upconversion photoluminescence in phosphor nanoparticle thin films using metallic nanoantennas fabricated by colloidal lithography

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

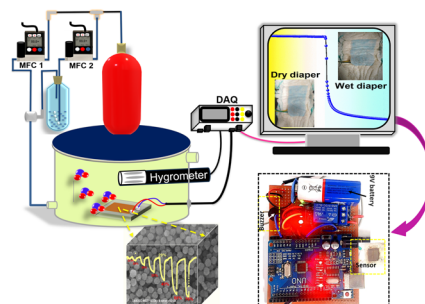
Kaplan Kirakci,* Robert Pola,* Marina Rodrigues Tavares, Michal Pechar, Tomáš Příbyl, Ivana Křížová, Jaroslav Zelenka, Tomáš Ruml, Tomáš Etrych and Kamil Lang



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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

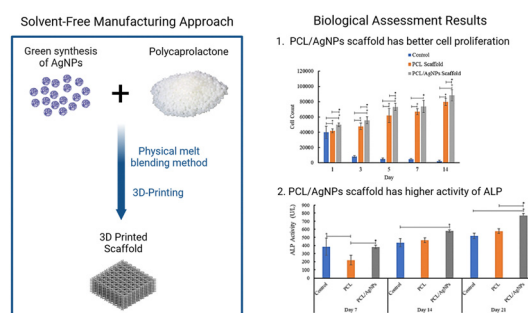
Rahul S. Ghuge, Manish D. Shinde, V. Hajeesh Kumar, Sudhir S. Arbuj, Velappa Jayaraman Surya, Sunit B. Rane,* Corrado Di Natale and Yuvaraj Sivalingam*



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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

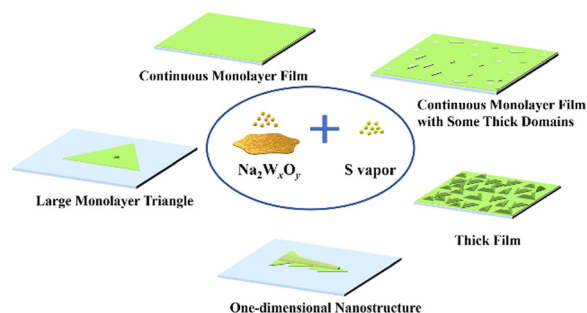
Mira Mira, Arie Wibowo,* Gusti Umindya Nur Tajalla, Glen Cooper, Paulo Jorge Da Silva Bartolo and Anggraini Barlian*



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Further insights into the Na_2WO_4 -assisted synthesis method for WS_2

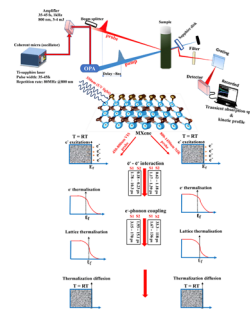
Changyong Lan,* Xinyu Jia, Yiyang Wei, Rui Zhang, Shaofeng Wen, Chun Li, Yi Yin and Johnny C. Ho



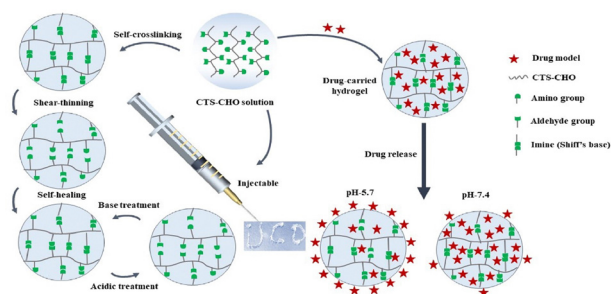
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Investigation of charge carrier dynamics in a $\text{Ti}_3\text{C}_2\text{T}_x$ MXene for ultrafast photonics applications

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

Xiaoyu Wang, Melissa Johnson, Nan Zhang, Pingping Shen, Lizhu Yang, Cameron Milne, Irene Lara-Sáez, Rijian Song,* Sigren A* and Wenxin Wang

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

Yuelin Wang, Thanh Ngoc Pham, Harry H. Halim, Likai Yan and Yoshitada Morikawa*

