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Cover

See Ryota Teshima
et al., pp. 6368–6372.
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2024, 5, 6368.

EDITORIAL

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Introduction to Advanced materials for sensing and biomedical applications

Yogendra Kumar Mishra, Ajeet Kaushik and Avtar Singh

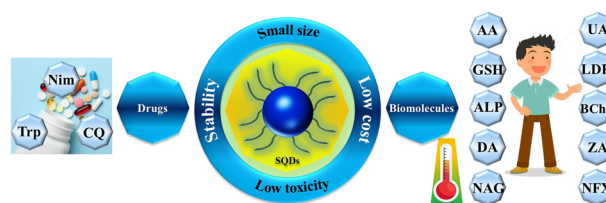


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Sulfur quantum dots for fluorescence sensing in biological and pharmaceutical samples: a review

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Nian N. Mohammad, Ahmed M. Abdullah,
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Dler M. S. Shwan and Shujahadeen B. Aziz



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Fundamental questions
Elemental answers

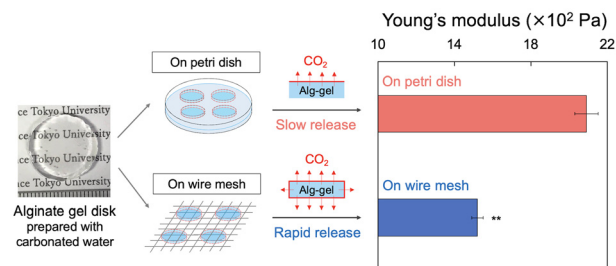


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Effect of CO₂ release behavior on the crosslinking degree of alginate hydrogels prepared with CaCO₃ and carbonated water

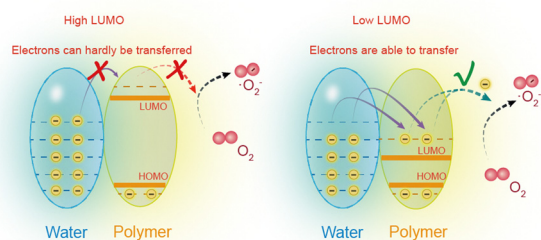
Ryota Teshima,* Shigehito Osawa, Kaoru Hirose, Yayoi Kawano, Akihiko Kikuchi, Takehisa Hanawa and Hidenori Otsuka



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A perspective on contact-electro-catalysis based on frontier molecular orbitals

Ziming Wang, Xuanli Dong, Fu-Jie Lv and Wei Tang*

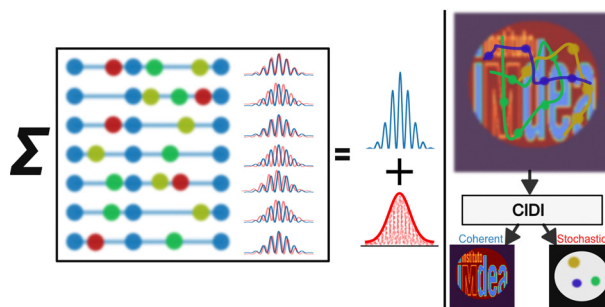


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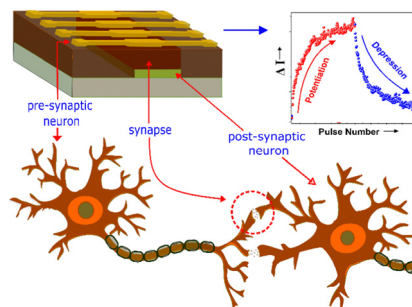
Arnab Sarkar and Allan S. Johnson*



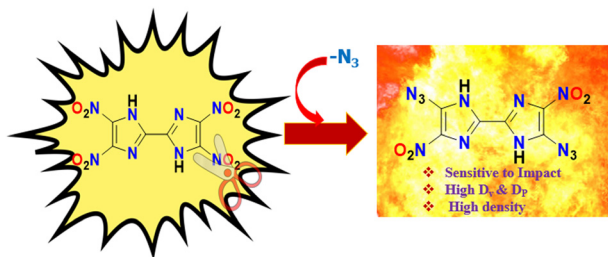
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Emulating synaptic plasticity with a poly[N-(3-(9H-carbazol-9-yl)propyl)methacrylamide] memristor

Yadu Ram Panthi, Ambika Pandey, Adriana Šturcová, Drahomír Výprachtický, Stephen H. Foulger and Jiří Pflieger*



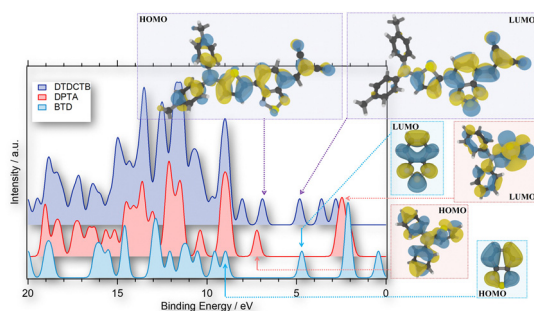
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One step synthesis of nitrogen-rich green primary explosives from secondary explosives: synthesis, characterization, and performance study

Parasar Kumar, Vikas D. Ghule and Srinivas Dharavath*

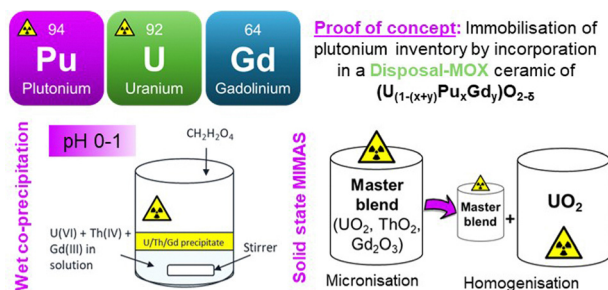
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Gas phase electronic structure of the DTDCTB small-molecule donor for vacuum-processed organic photovoltaics compared to its constituent building blocks

Ambra Guarnaccio,* Iulia Emilia Brumboiu,* Cesare Grazioli, Teng Zhang, Fredrik O. L. Johansson, Marcello Coreno, Monica de Simone and Carla Puglia

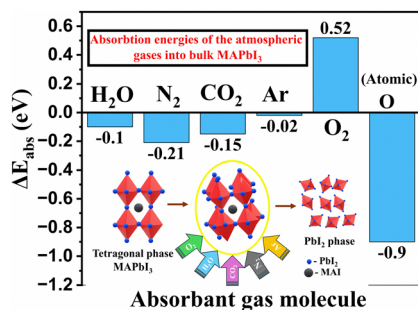
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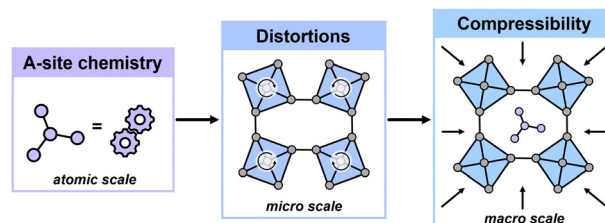


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Tuning the mechanical properties of molecular perovskites by controlling framework distortions via A-site substitution

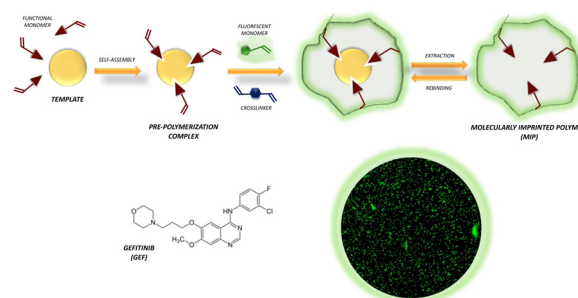
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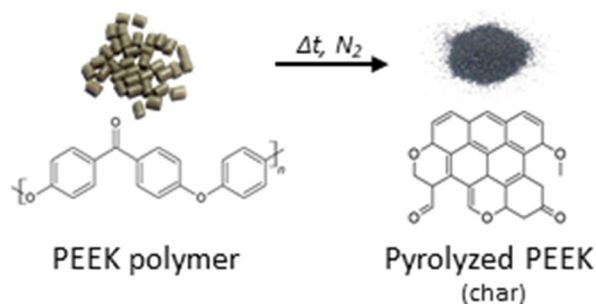
Marco Dattilo, Marisa Francesca Motta, Francesco Patitucci, Claudia Ferraro, Ortensia Ilaria Parisi* and Francesco Puoci



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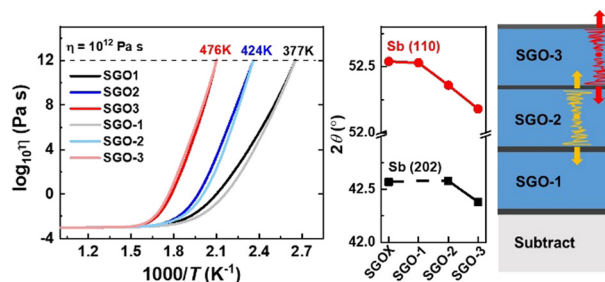
Jaroslav Lang,* Jan Bednárek, Michal Ritz, Martin Kormunda, Tomáš Zelenka, Michal Vaštl, Anna Gavlová, Zdeňka Kolská and Marta Férová



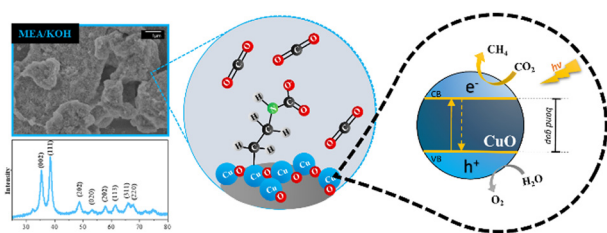
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Crystallization kinetics of stacked phase-change films for multi-level storage

Yimin Chen,* Ce Fan, Nan Han, Kexing Peng, Chenjie Gu, Zijun Liu, Guoxiang Wang, Tiefeng Xu, Junqiang Wang and Xiang Shen*



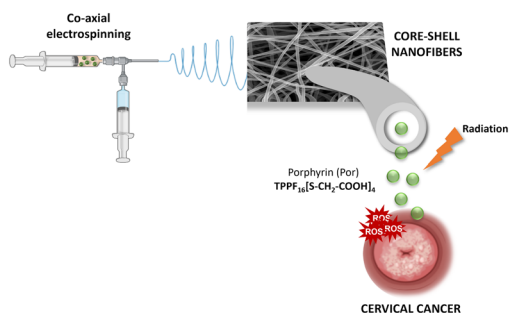
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Unveiling the influence of alkaline modifiers in CuO synthesis on its photocatalytic activity for CO₂ reduction

Jéssica C. de Almeida, Thais Aparecida Rodrigues, Gelson T. S. T. da Silva, Caue Ribeiro* and Vagner R. de Mendonça*

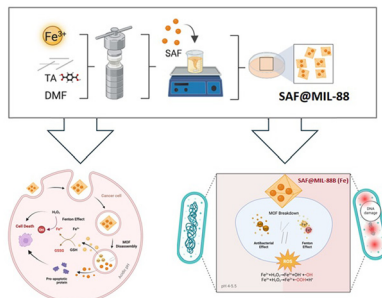
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Localized cancer photodynamic therapy approach based on core-shell electrospun nanofibers

Sofia M. Costa,* Leandro M. O. Lourenço, Ricardo C. Calhelha, Isabel Calejo, Cristina C. Barrias, Raul Figueiro and Diana P. Ferreira*

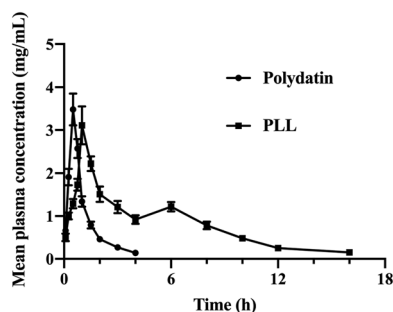
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Synthesis and characterization of safranal@MIL-88B(Fe) nanostructures and their preliminary anticancer and antibacterial characteristics

Alia Alkaabi, Khansa Ahsan, Nayla Munawar, Abdelouahid Samadi, Hesham El-Maghraby, Amr Amin and Yaser Greish*

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Advancing diabetes treatment: novel formulation of polydatin long-circulating liposomes and their glucose-regulating impact on hyperlipidemia-induced type 2 diabetic mice

Kepei Zhang, Junlan Chen, Faisal Raza, Hajra Zafar, Ye Xu, Ran Li, Kamran Hidayat Ullah and Shigao Zhou*

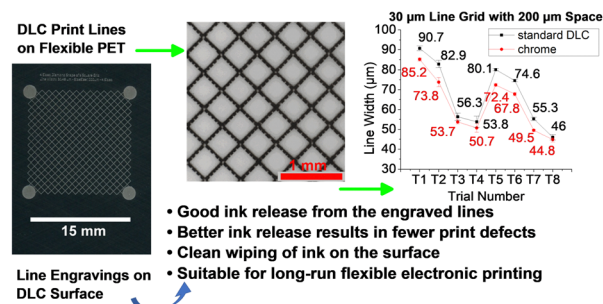


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DLC-engineered flat gravure surface: enabling sustainable fabrication to replace chrome for printing conductive line electrodes in flexible electronics

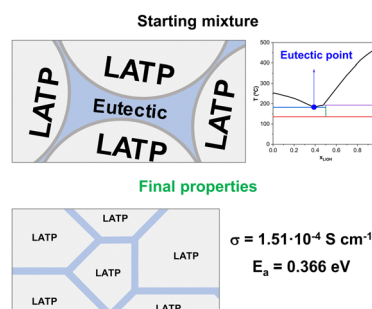
Chandramohan Seetharamiahsrinivasaraju,* Ronit Shetty, Donald K. Cohen, Priyanka Sharma* and James R. Springstead



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Hydroflux-assisted cold sintering: eutectic mixtures for boosting ionic conductivity in LATP solid-state electrolytes

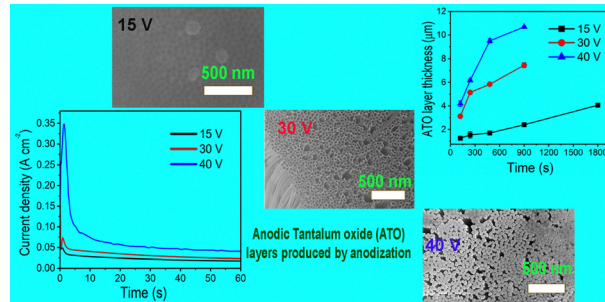
Andrés Mormeneo-Segarra, Sergio Ferrer-Nicomedes, Nuria Vicente-Agut* and Antonio Barba-Juan



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Understanding the morphological evolution of anodic tantalum oxide nanostructures in acidic medium

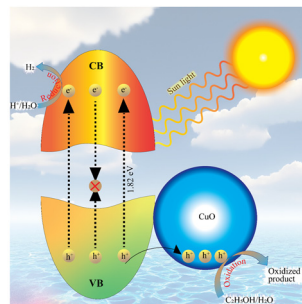
Biswaranjan D. Mohapatra,* Kinga Pawlik, Izabela Darowska, Łukasz Gondek, Marcin Pisarek and Grzegorz D. Sulka*



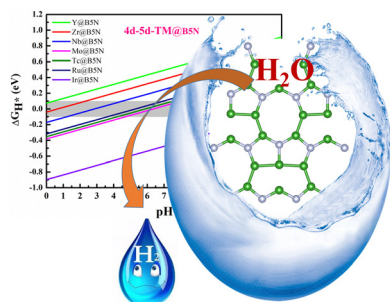
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Insights into the development and performance of CuO/CuFe₂S_xO_{4-x} catalysts: an effective approach for renewable hydrogen generation

Ejaz Hussain,* Muhammad Jalil, Muhammad Zeeshan Abid, Javeria Mansab, Raed H. Althomali, Shuxin Wang, Abdul Rauf and Khezina Rafiq*



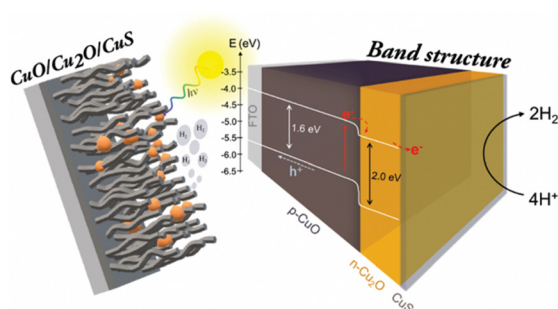
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Single-atom transition metals doping two-dimensional B_xN materials ($X = 2, 3, 5$) with promising electrocatalytic activity for efficient hydrogen production in the entire pH range

Yuhua Wei, Feng Gao,* Hong Liu, Wei Qi, Sichao Du, Hao Xie and Duo Xiao

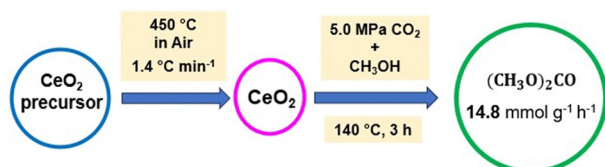
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Enhanced photoelectrochemical water splitting using nanostructured films: p-CuO sensitized with polyhedral n-Cu₂O particles and CuS as photocathode

Hugo Leandro Sousa Santos and Lucia Helena Mascaro*

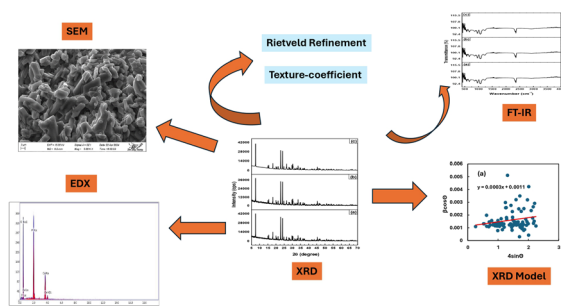
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Porous ceria materials for efficient direct conversion of carbon dioxide and methanol to dimethyl carbonate

Zhuxian Yang, Justin Tay Zheng, Xinhuan Lu, Monica Mengdie Lin, Dongming Cai, Yankun Wang, Wen-Yueh Yu,* Yanqiu Zhu and Yongde Xia*

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Sustainable synthesis and characterization of nano-triple superphosphate from solid marine wastes

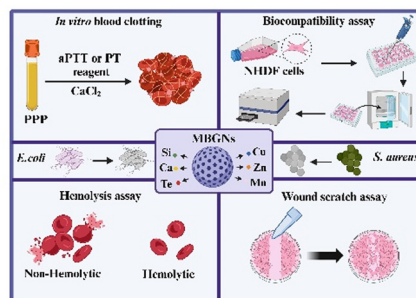
Md. Kawcher Alam, Md. Sahadat Hossain, Mohammad Saimon Islam, Newaz Mohammed Bahadur and Samina Ahmed*



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The effect of mesoporous bioactive glass nanoparticles incorporating various metallic ions (Cu, Zn, Mn, Te) on wound healing

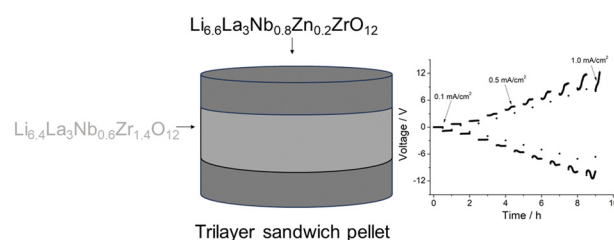
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Experimental and computational study of Zn doping in $\text{Li}_{5+x}\text{La}_3\text{Nb}_{2-x}\text{Zr}_x\text{O}_{12}$ garnet solid state electrolytes

Bo Dong,* Bassey Oboho, Linhao Li, Xiao Tao, Pengcheng Zhu, Mark P. Stockham, Chuan Li, Roger Smith, Yongliang Li, Yulong Ding, Pooja Goddard* and Peter R. Slater*



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Fabrication of composite scaffolds using hydroxyapatite, epoxy resin and silica for load-bearing applications

Md. Kawcher Alam, Md. Sahadat Hossain, Newaz Mohammed Bahadur and Samina Ahmed*

