

Materials Advances

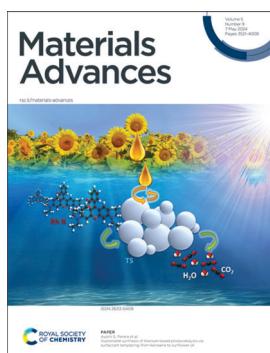
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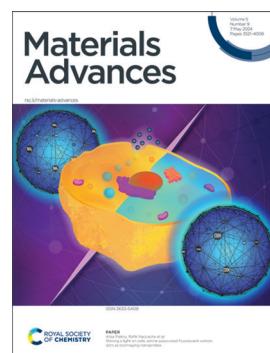
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See Ayomi S. Perera et al., pp. 3649–3661.
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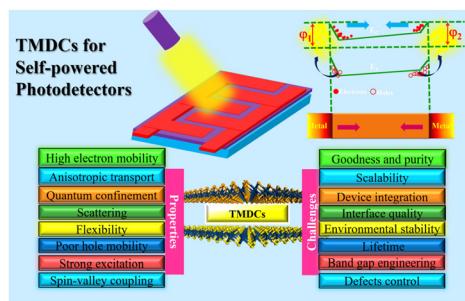
See Alisa Piekny, Rafik Naccache et al., pp. 3662–3674.
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Advancements in transition metal dichalcogenides (TMDCs) for self-powered photodetectors: challenges, properties, and functionalization strategies

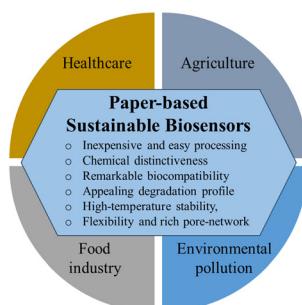
Alka Rani, Arpit Verma and Bal Chandra Yadav*



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Paper-based sustainable biosensors

Anuj Kumar* and Pralay Maiti





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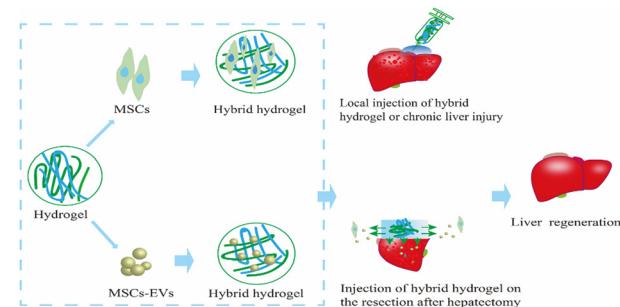
Fundamental questions
Elemental answers

REVIEWS

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Hydrogels as carriers deliver stem cells/exosomes for liver injury

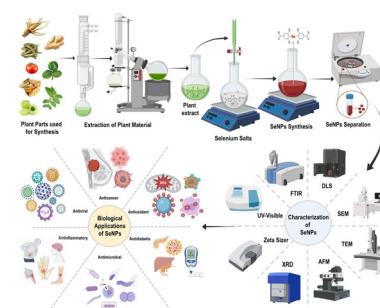
Qiuxia Zheng, Jia Yao, Zongbin Sun, Yongcui Mao, Jiayun Wei, Ye Xie, Xue Kai Hu and Xun Li*



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Plant-derived selenium nanoparticles: investigating unique morphologies, enhancing therapeutic uses, and leading the way in tailored medical treatments

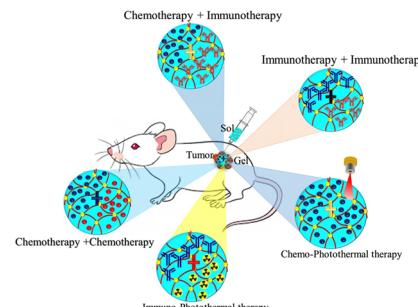
Abhijeet Puri,* Popat Mohite,* Yunus Ansari, Nobendu Mukerjee, Hanan M. Alharbi, Aman Upaganlawar and Nanaasaheb Thorat*



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Hydrogels as local depots for on-demand therapeutic delivery: potential therapeutic approaches for tumor metastasis

Abegaz Tizazu Andrgie and Hsieh-Chih Tsai*

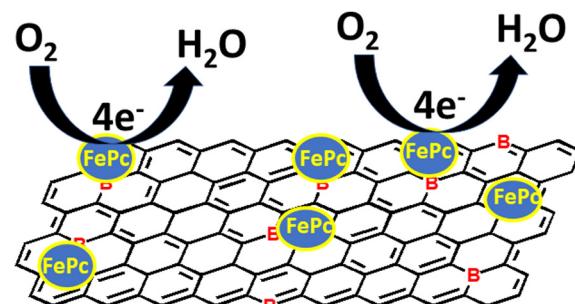


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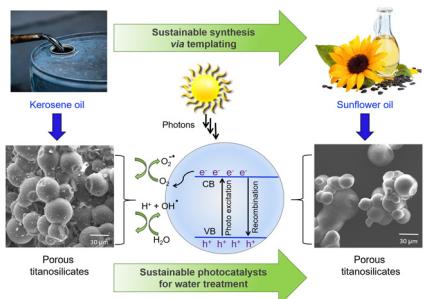
Iron phthalocyanine integrated with boron-doped reduced graphene oxide for highly selective four-electron oxygen reduction: an experimental study

Vikram Rathour, Smita Singh, Varsha Singh, Devesh Kumar Singh, Mamta Yadav, Ananya Tiwari and Vellaichamy Ganesan*



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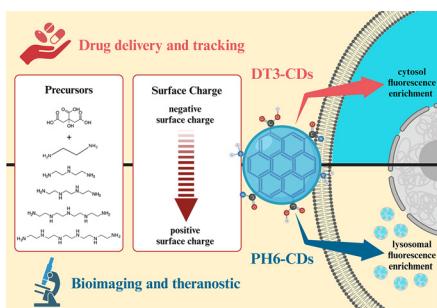
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Sustainable synthesis of titanium based photocatalysts *via* surfactant templating: from kerosene to sunflower oil

Reece M. D. Bristow, Peter J. S. Foot, James D. McGettrick, Joseph C. Bear and Ayomi S. Perera*

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Shining a light on cells: amine-passivated fluorescent carbon dots as bioimaging nanoprobes

Adryanne Clermont-Paquette, Kevin Larocque, Alisa Piekny* and Rafik Naccache*

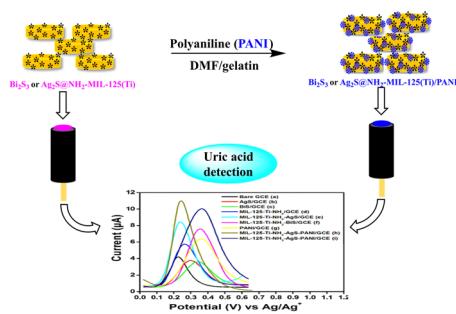
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Supramolecular biomaterials as drug nanocontainers with iron depletion properties for antimicrobial applications

Chiara Zagni, Vincenzo Patamia, Sandro Dattilo, Virginia Fuochi, Salvatore Furnari, Pio Maria Furnari, Sabrina Carola Carroccio, Giuseppe Floresta* and Antonio Rescifina

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Evaluation of two core–shell (Ag_2S @- and Bi_2S_3 @-) sensors based on a metal–organic framework ($\text{NH}_2\text{-MIL-125-Ti}$)/polyaniline for the electroanalysis of uric acid in urine samples

Gullit Deffo,* Cyrille Ghislain Fotsop,* Marcel Cédric Deussi Ngaha, Sengor Gabou Fogang, Lionel Averie Vomo, Bibiane Wandji Nkuigoua, Calmette Akenmo Shella, Alex Vincent Somba, Thierry Flavien Nde Tene, Ida Kouam Tchummegne, Evangeline Njanja, Ignas Kenfack Tonlé, Panchanan Puzari and Emmanuel Ngameni

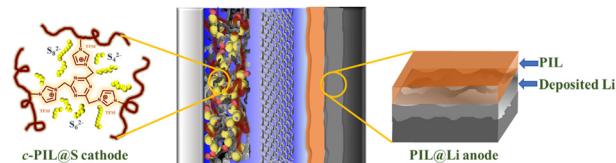


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One action, two benefits: improving the performance of lithium–sulfur batteries with a poly(ionic liquid)

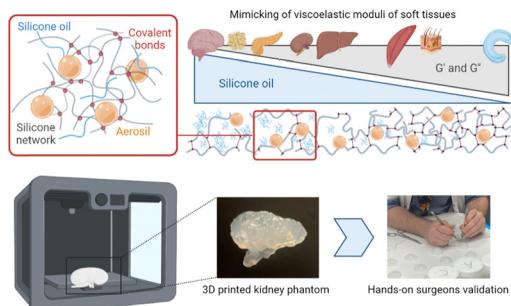
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Developing tuneable viscoelastic silicone gel-based inks for precise 3D printing of clinical phantoms

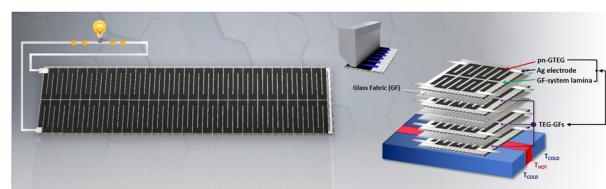
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A hierarchically modified fibre-reinforced polymer composite laminate with graphene nanotube coatings operating as an efficient thermoelectric generator

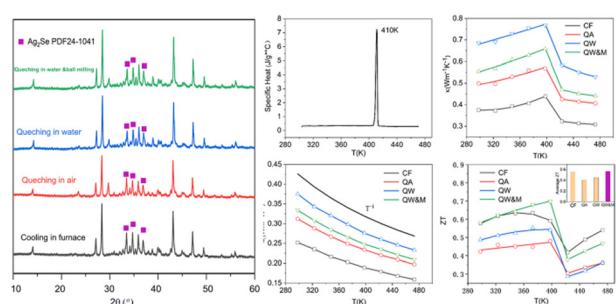
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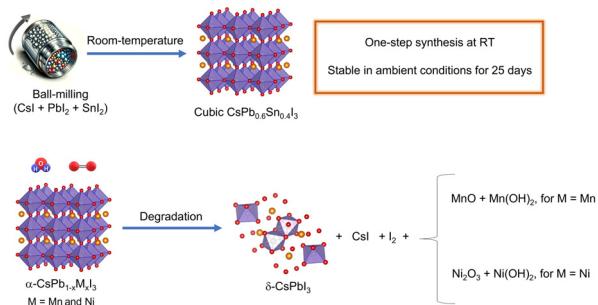
A new thermoelectric Ag_8SiSe_6 argyrodite for room temperature application: sensitivity of thermoelectric performance to cooling conditions

Bo Wang, Suwei Li, Yubo Luo, Junyou Yang, Haitao Ye,* Yong Liu* and Qinghui Jiang*



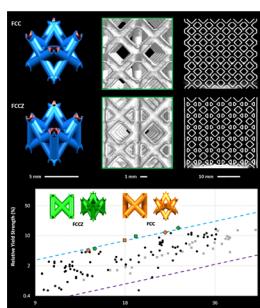
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**Stability of CsPbI_3 with divalent cations incorporated via mechanochemical alloying**

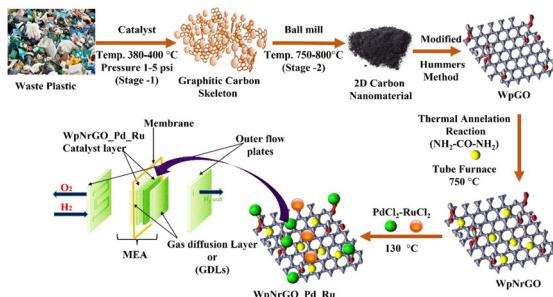
Mahsa Shekarnoush, Francisco S. Aguirre-Tostado and Manuel Quevedo López*

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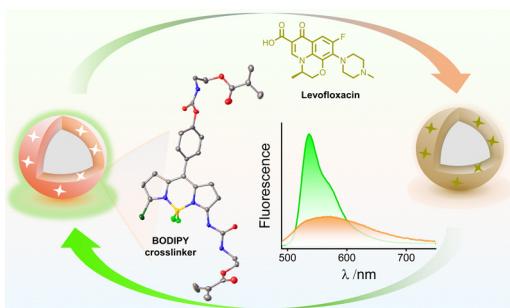
Jordan Noronha, Martin Leary, Milan Brandt and Ma Qian*

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Yijuan Sun, Kornelia Gawlitza, Virginia Valderrey, Jérémie Bell and Knut Rurack*

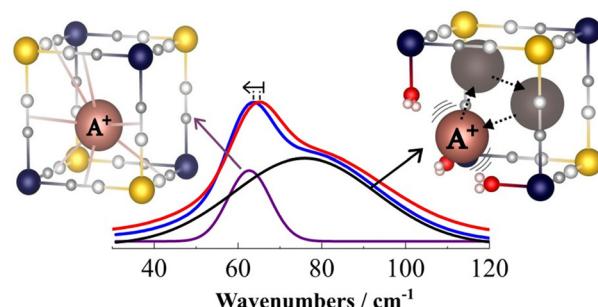


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Interactions between alkali cations and cyanide-bridged network in $A_2Co_4[Fe(CN)_6]_{3.3}$ Prussian blue analogues revealed by far-infrared spectroscopy

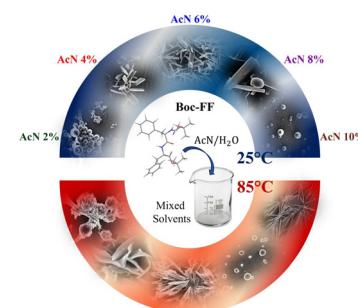
Maria Dronova, Laura Altenschmidt, Amélie Bordage, Jean-Blaise Brubach, Marine Verseils, Gregory Balthazar, Pascale Roy and Anne Bleuzen*



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Multiple length-scale control of Boc-protected diphenylalanine aggregates through solvent composition

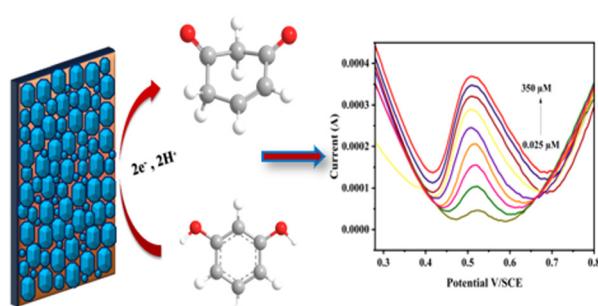
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Tweaking the electrocatalytic ability of Cu-MOF by the inclusion of PTA: a selective electrochemical sensor for resorcinol

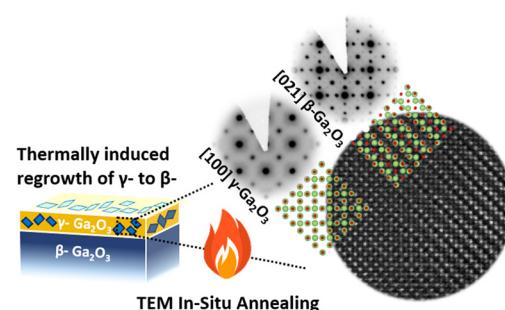
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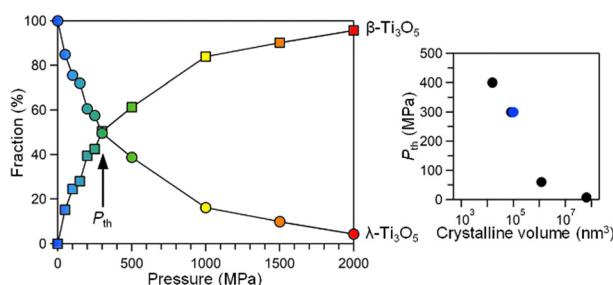
In situ atomic-resolution study of transformations in double polymorph $\gamma/\beta\text{-Ga}_2\text{O}_3$ structures

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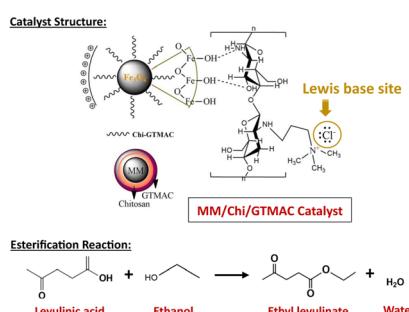
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**Synthesis of heat storage ceramic $\lambda\text{-Ti}_3\text{O}_5$ using titanium chloride as the starting material**

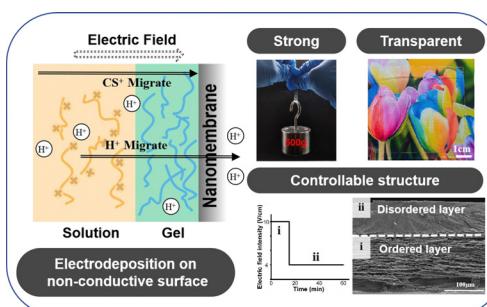
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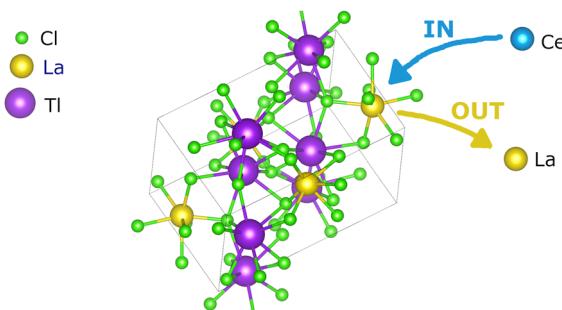
Feri Mukhayani, Yuichi Kamiya,* Ryoichi Otomo, Eko Sri Kunarti and Nuryono Nuryono*

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**Full Ce substitution on La in Tl_2LaCl_5 : impact and performance**

Federico Moretti,* Didier Perrodin, Joanna Szornel and Edith D. Bourret

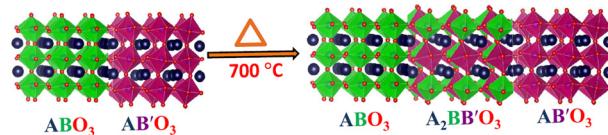


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Entanglement of cation ordering and manipulation of the magnetic properties through a temperature-controlled topotactic interface reaction in nanocomposite perovskite oxides

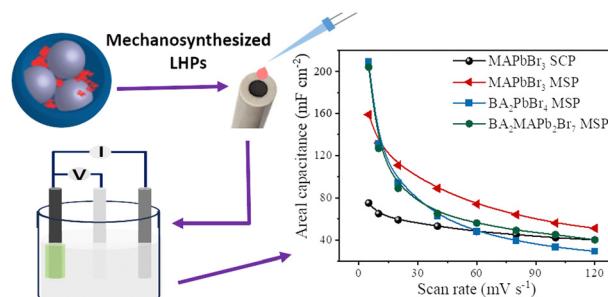
Sudipa Bhattacharya, Radhamadhab Das, Shreyashi Chowdhury, K. K. Supin, M. Vasundhara,* Jyoti Ranjan Sahu, Trilochan Bhunia, Arup Gayen, Oleg I. Lebedev and Md. Motin Seikh*



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Mechanochemically-assisted synthesis of 3D, 2D and quasi 2D lead halide perovskites for supercapacitor applications

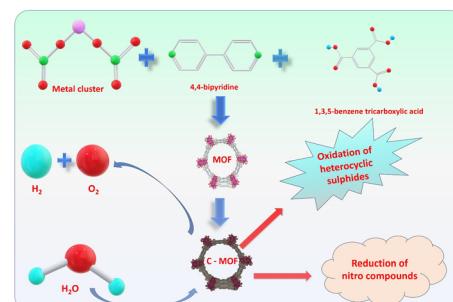
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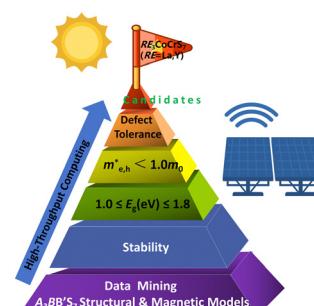
Manivannan Mahendran, Yazhmozhi Mariappan, Rahul Thamizhselvan* and Suryanarayanan Vembu*



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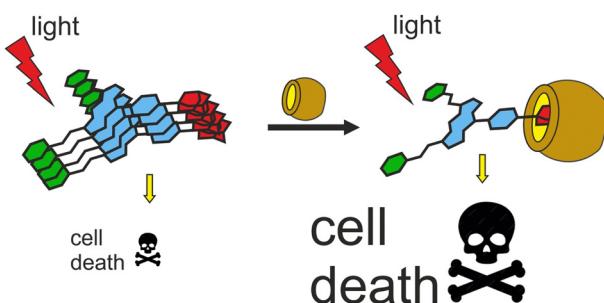
High-throughput screening of stable sulfide semiconductors for solar cell conversion

Jinjin Yang, Zhongxiong Sun, Dao-Xin Yao and Man-Rong Li*



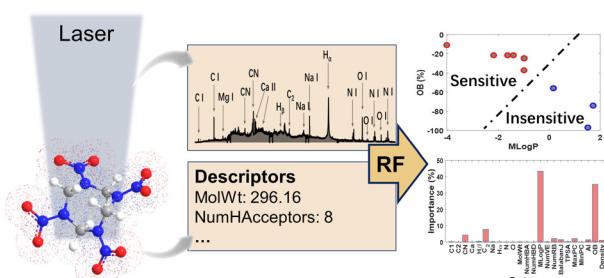
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**BODIPY-cucurbituril complexes: supramolecular approach toward improvement of photodynamic activity**

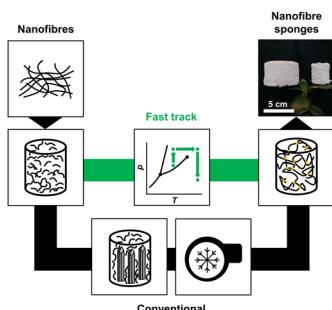
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**Interpretable-machine-learning-guided discovery of dominant intrinsic factors of sensitivity of high explosives**

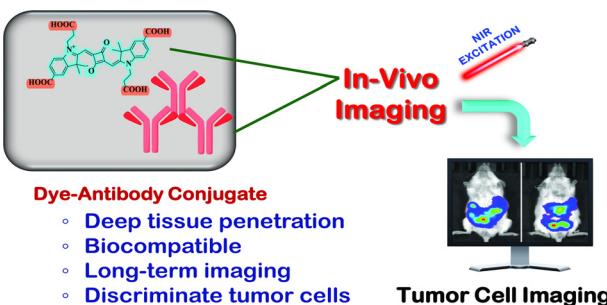
Xianshuang Wang, Yage He, Xinyu Zhang, Maoxin Hu, Wanzhu Zhao, Haohan Sun, Xiaoning Yang, Xiaodong Liu and Ruibin Liu*

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**Rapid preparation of electrospun nanofibre sponges through supercritical CO₂ drying**

Gioele Mol, Christina Fialová and Christian Adlhart*

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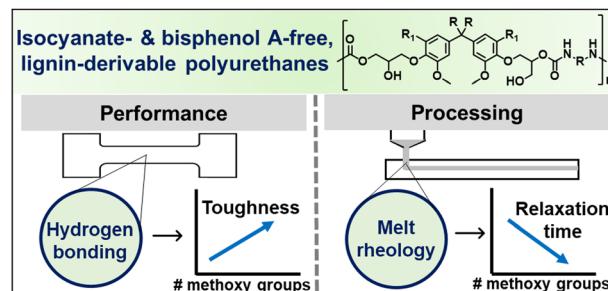


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Lignin-derivable, thermoplastic, non-isocyanate polyurethanes with increased hydrogen-bonding content and toughness vs. petroleum-derived analogues

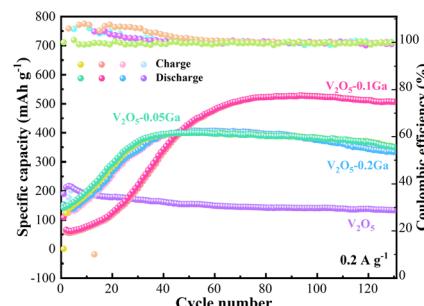
Jignesh S. Mahajan, Zachary R. Hinton, Eduardo Nombra Bueno, Thomas H. Epps, III* and LaShanda T. J. Korley*



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The introduction of gallium ions into V₂O₅ interlayers for highly reversible Zn ion batteries

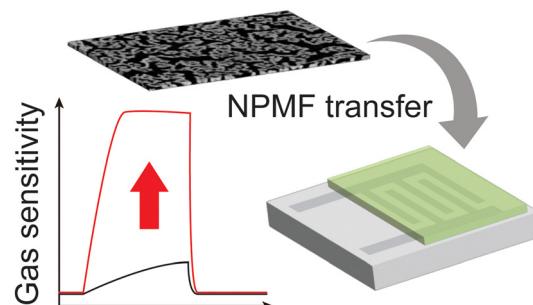
Ming Zhao, Shilong Li, Xiang Wu* and Abdulkayum Abdukader*



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Ultrathin nanoporous metallic films and their integration in sensors

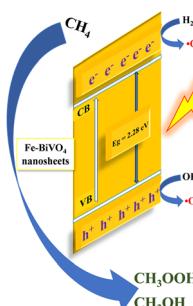
Hyunah Kwon,* Mariana Alarcón-Correa, Izar Schärf and Peer Fischer



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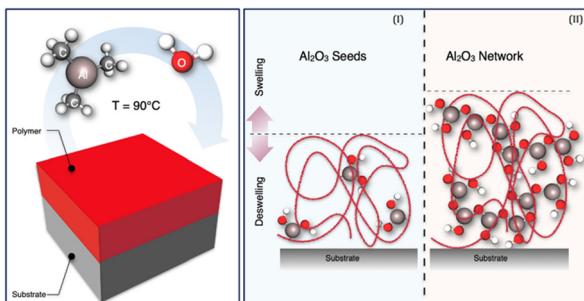
New Fe-doped two-dimensional BiVO₄ nanosheets for direct methane conversion to methyl oxygenates

Catherine Afriyie* and Xingwang Zhang



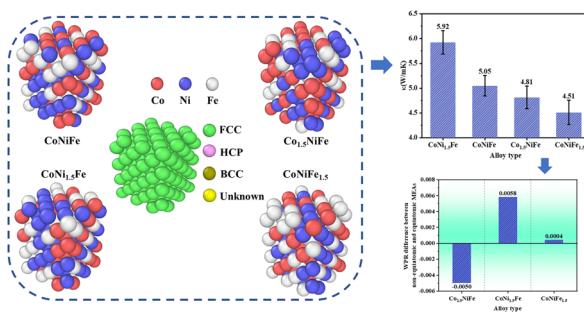
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**Al₂O₃ growth in PMMA thin films by sequential infiltration synthesis: *in situ* thickness evolution and mass uptake investigation**

Michele Perego,* Gabriele Seguini,* Claudia Wiemer, Federica E. Caligiore and Elena Cianci

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**Theoretical insights into the lattice thermal conductivity and thermal expansion of CoNiFe medium-entropy alloys**

Jian Zhang, Haochun Zhang,* Jie Xiong, Shuai Chen* and Gang Zhang*

RETRACTION

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Retraction: Recent developments in energy storage systems for marine environment

Jaya Verma* and Deepak Kumar

