

# Materials Advances

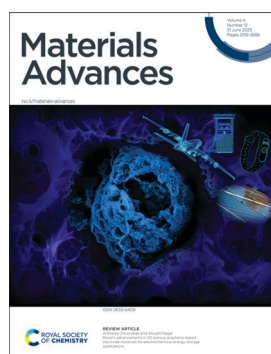
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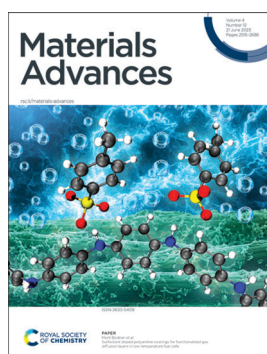
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### Cover

See Arthisree Devendran and Atsushi Nagai, pp. 2524–2543. Image reproduced by permission of Arthisree Devendran and Atsushi Nagai from ENSEMBLE3 from *Mater. Adv.*, 2023, 4, 2524.



### Inside cover

See Merit Bodner *et al.*, pp. 2573–2585. Image reproduced by permission of Mario Maglie and Florian Tritscher from *Mater. Adv.*, 2023, 4, 2573.

## EDITORIAL

2522

### Introduction to “Shaping the future using thin films and nanotechnology”

Aruna Ivaturi\* and Oomman Varghese\*

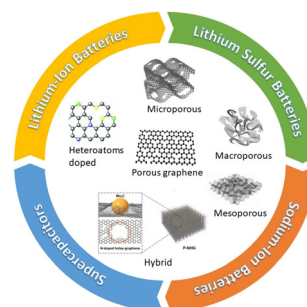


## REVIEWS

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### Recent advancements in 3D porous graphene-based electrode materials for electrochemical energy storage applications

Arthisree Devendran and Atsushi Nagai\*



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## REVIEWS

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### Nanotechnology based therapeutic approaches: an advanced strategy to target the biofilm of ESKAPE pathogens

Arpita Mukherjee, Somashree Bose, Anirban Shaoo and Sujoy K. Das\*



## PAPERS

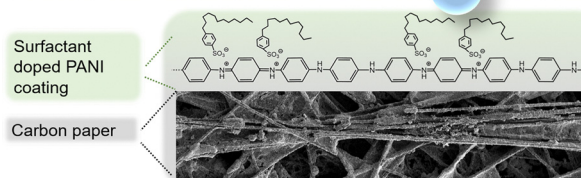
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### Surfactant doped polyaniline coatings for functionalized gas diffusion layers in low temperature fuel cells

Florian Tritscher, Adrian Mularczyk, Antoni Forner-Cuenca, Viktor Hacker and Merit Bodner\*

Functional coatings for gas diffusion layers in fuel cells:

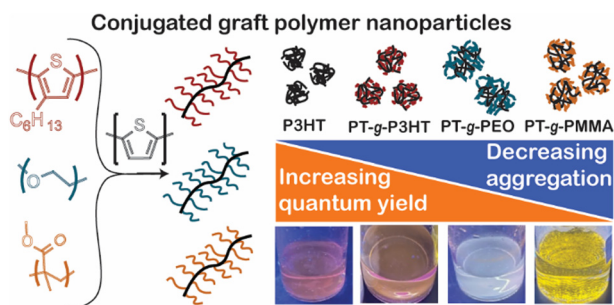
- PTFE-free
- Improved electrical conductivity
- Controllable hydrophobicity



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### Enhancing photoluminescence of conjugated nanoparticles through graft polymer architectures

Ashley E. Masucci, Masoud Ghasemi, Christian W. Pester\* and Enrique D. Gomez\*



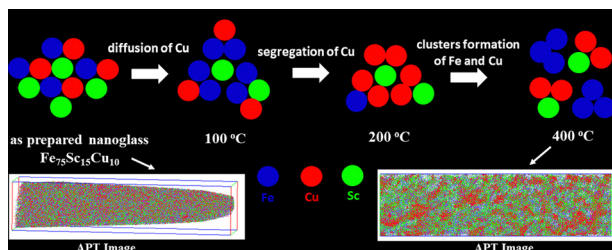
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### Ni(II) and Zn(II)-metallogel-based anti-bacterial scaffolds for fabricating light-responsive junction-type semiconducting diodes with non-ohmic conduction mechanism

Gerald Lepcha, Baishakhi Pal, Santanu Majumdar, Kazi Tawfif Ahmed, Indrajit Pal, Swadesh Ranjan Biswas, Partha Pratim Ray\* and Biswajit Dey\*



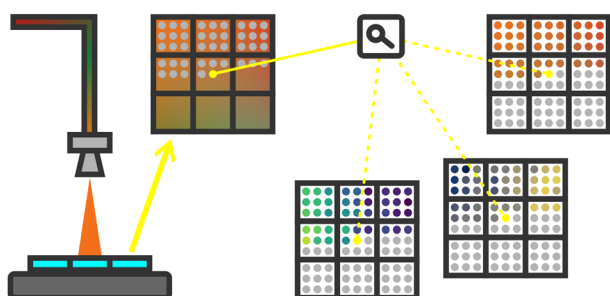
2604



### Nano-alloying and nano-chemistry of the immiscible elements Fe and Cu in a FeSc–Cu nanoglass

Shiv Prakash Singh,\* Mohammed Reda Chellali, Torben Boll, Herbert Gleiter and Horst Hahn

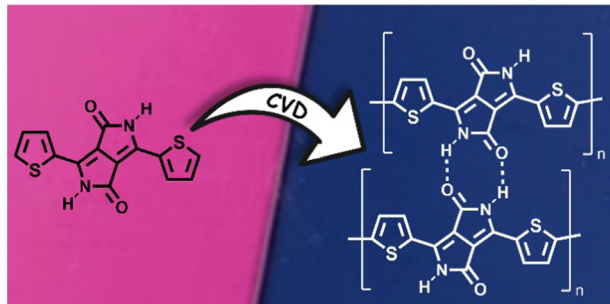
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### Accelerated screening of Cu–Ga–Fe oxide semiconductors by combinatorial spray deposition and high-throughput analysis

Maximilian Wolf,\* Georg K. H. Madsen and Theodoros Dimopoulos\*

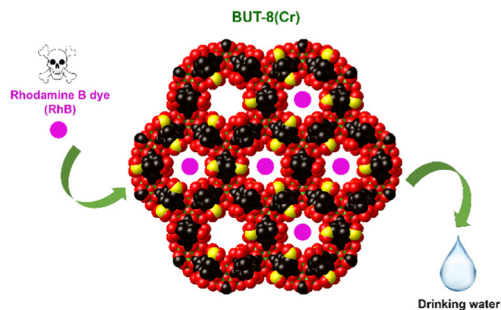
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### Unsubstituted thiophene–diketopyrrolopyrrole conjugated polymer thin films via oxidative chemical vapor deposition – electronic behavior

Marek K. Charyton, Tobias Reiker, Kamil Kotwica, Monika Góra, Helmut Zacharias and Nicolas D. Boscher\*

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### Efficiently improving the adsorption capacity of the Rhodamine B dye in a SO<sub>3</sub>H-functionalized chromium-based metal–organic framework

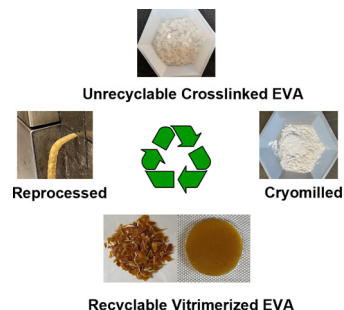
Khang M. V. Nguyen, Anh V. N. Phan, Nhung T. Dang, Truong Q. Tran, Huy K. Duong, Hung N. Nguyen and My V. Nguyen\*



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### Vitrimerization of crosslinked elastomers: a mechanochemical approach for recycling thermoset polymers

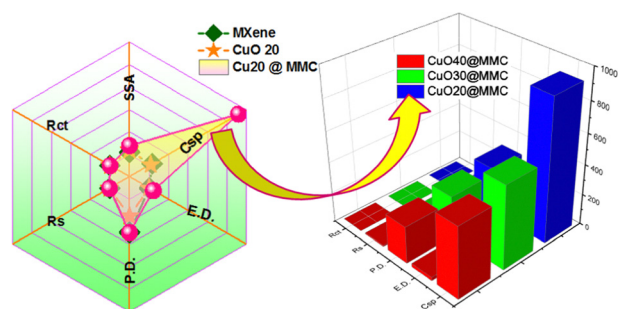
Alireza Bandegi, Thomas G. Gray,\* Sarah Mitchell, Amin Jamei Oskouei, Michelle K. Sing, Jayme Kennedy, Kimberly Miller McLoughlin and Ica Manas-Zloczower\*



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### Facile synthesis of ternary MXene nanocomposites as an electrode for supercapacitive applications

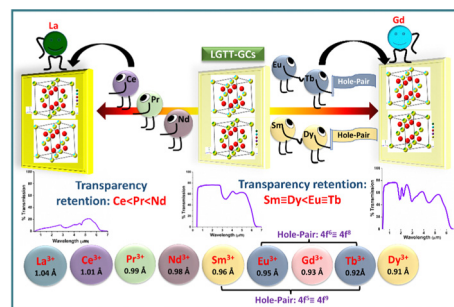
Rutuja A. Chavan, Desta M. Ulliso, Akash S. Rasal, Jia Yaw Chang and Anil Vithal Ghule\*



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### The effect of rare earth (RE<sup>3+</sup>) ionic radii on transparent lanthanide-tellurite glass-ceramics: correlation between 'hole-formalism' and crystallization

Pritha Patra, K. Jayanthi, Fabian Margit, Shweta R. Keshri, Sandip Bysakh, Kaushik Biswas, Nitya Nand Gosvami, N. M. Anoop Krishnan, Amarnath R. Allu and K. Annapurna\*



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### Correction: Cellulose-assisted electrodeposition of zinc for morphological control in battery metal recycling

B. W. Hoogendoorn, M. Parra, A. J. Capezza, Y. Li, K. Forsberg, X. Xiao\* and R. T. Olsson\*

