

# Materials Advances

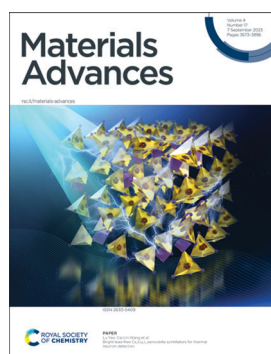
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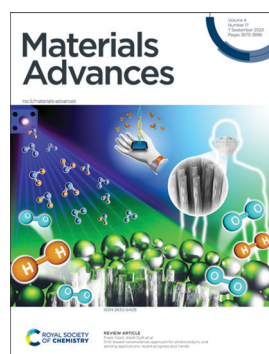
## IN THIS ISSUE

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### Cover

See Lu Yao, Cai Lin Wang *et al.*, pp. 3714–3723. Image reproduced by permission of Lu Yao from *Mater. Adv.*, 2023, 4, 3714.



### Inside cover

See Frank Güell, Ateet Dutt *et al.*, pp. 3685–3707. Image reproduced by permission of Ateet Dutt from *Mater. Adv.*, 2023, 4, 3685.

## EDITORIAL

3682

### Advanced functional materials and manufacturing processes

Jessica O. Winter,\* Jawwad A. Darr\* and John Wang\*

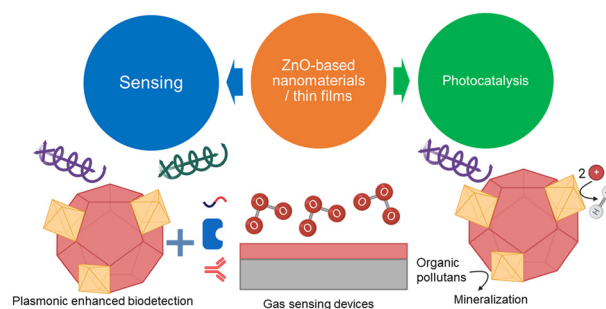


## REVIEW

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### ZnO-based nanomaterials approach for photocatalytic and sensing applications: recent progress and trends

Frank Güell,\* Andrés Galdámez-Martínez, Paulina R. Martínez-Alanis, Ariadne C. Catto, Luis F. da Silva, Valmor R. Mastelaro, Guillermo Santana and Ateet Dutt\*



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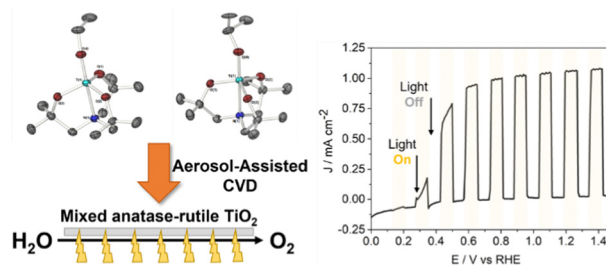


## COMMUNICATION

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### Aerosol-assisted chemical vapour deposition of highly efficient mixed anatase-rutile TiO<sub>2</sub> for photoelectrochemical water splitting

Thom R. Harris-Lee, Enrico Della Gaspera, Frank Marken, Jie Zhang, Cameron L. Bentley and Andrew L. Johnson\*

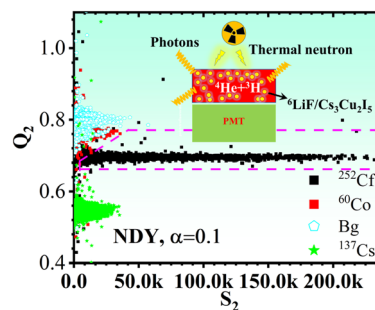


## PAPERS

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### Bright lead-free Cs<sub>3</sub>Cu<sub>2</sub>I<sub>5</sub> perovskite scintillators for thermal neutron detection

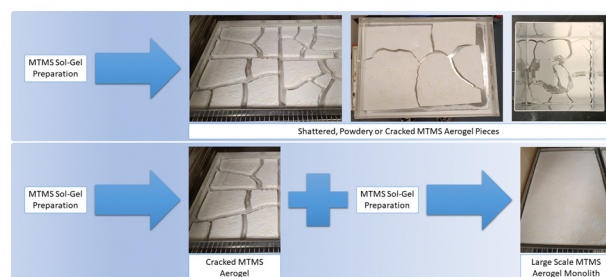
Lu Yao,\* Wanting Gui, Xunsheng Zhou, Chao Li, Shi Zhang, Jing Kui Zhao and Cai Lin Wang\*



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### Large scale recyclable monolithic methyltrimethoxysilane aerogels formed by self-reinforcement

Gylen Odling,\* Hannah Logan, Aaron Chan, Andrew J. Bissel, Colin R. Pulham and David E. Oliver



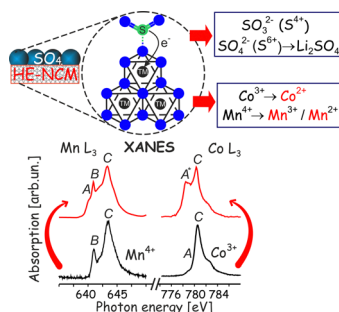
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### Hydroxide conducting BAB triblock copolymers tailored for durable high-performance anion exchange membranes

Andrit Allushi, Pegah Mansouri Bakvand, Haiyue Gong and Patric Jannasch\*



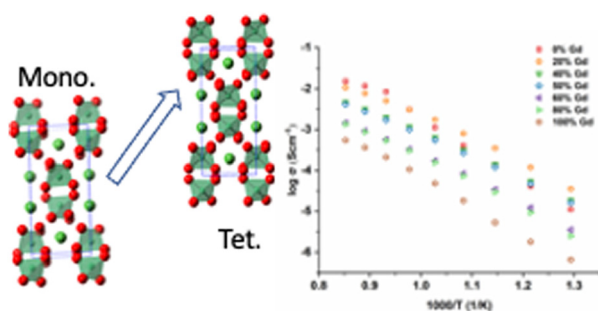
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### Impact of thermal gas treatment on the surface modification of Li-rich Mn-based cathode materials for Li-ion batteries

Maximilian Mellin, Zhili Liang, Hadar Sclar, Sandipan Maiti, Igor Piš, Silvia Nappini, Elena Magnano, Federica Bondino, Ilargi Napal, Robert Winkler, Réne Hausbrand, Jan P. Hofmann, Lambert Alff, Boris Markovsky, Doron Aurbach, Wolfram Jaegermann and Gennady Cherkashinin\*

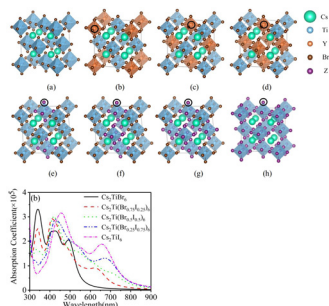
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### Investigation of the crystal structure and electrochemical performance of Gd doped LaNb<sub>0.9</sub>Mo<sub>0.1</sub>O<sub>4.05</sub>

Yidong Han and Stephen J. Skinner\*

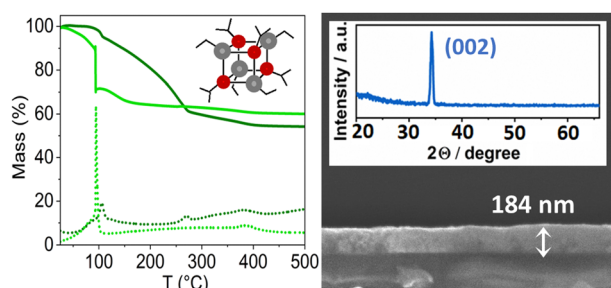
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### The modulation of the electrical and optical properties of Cs<sub>2</sub>TiBr<sub>6</sub> by doping

Jianwei Wei,\* Junhua Wu, Yunyun Wang, Yuze Zhang, Zengwei Ma, Chenkai Qiao and Hui Zeng

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### Self-textured ZnO via AACVD of alkyl alkoxides: a solution-based seed-less route towards optoelectronic-grade coatings

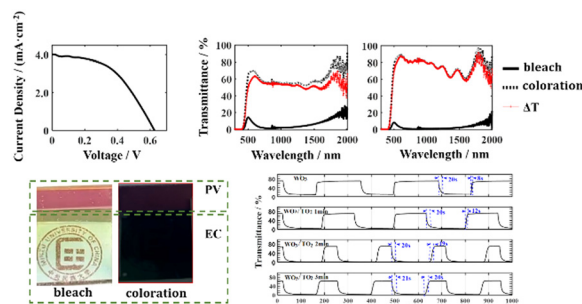
Clara Sanchez-Perez,\* Sriluxmi Srimuruganathan, Carlos Sotelo-Vazquez, Sanjayan Sathasivam, Mingyue Wang, Javier Marugán, Ivan P. Parkin and Claire J. Carmalt\*



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## The effect of the TiO<sub>2</sub> interface layer on the electrochromic properties of WO<sub>3</sub>-based devices

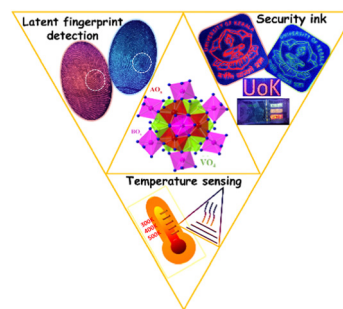
Panshu Gui, Ziyi Jin, Yufeng Bai, Zhengqiao Lv, Jianwei Mo, Shuai Chang and Di Yang\*



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## Delving into the multifunctionality of Sr<sub>2</sub>NaMg<sub>2</sub>V<sub>3</sub>O<sub>12</sub> via RE<sup>3+</sup> substitution for dual-mode temperature sensing, latent fingerprint detection and security inks

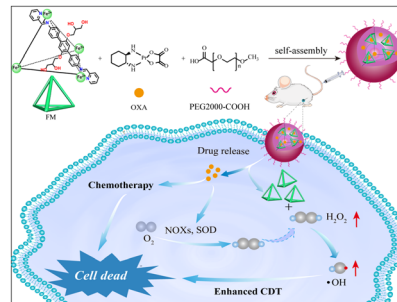
Amrithakrishnan Bindhu, Jawahar Isuhak Naseemabeevi and Subodh Ganesanpotti\*



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## Water-soluble ferrous metallacage combined with oxaliplatin for a synergistic chemo/chemodynamic therapy

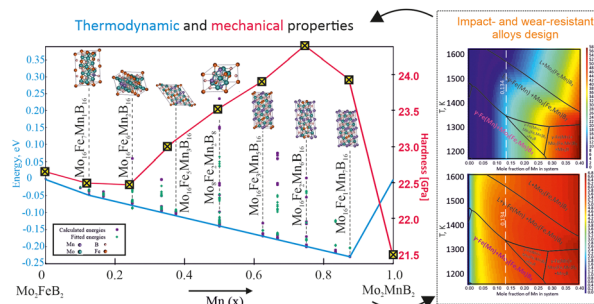
Jing He, Wei He, Run Wang, Jingjing Jiao\* and Shiping Yang\*



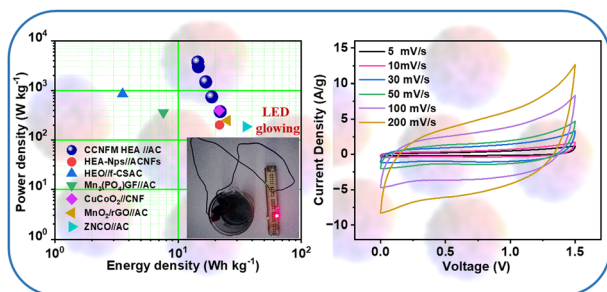
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## The thermodynamic and mechanical properties of Earth-abundant metal ternary boride Mo<sub>2</sub>(Fe,Mn)B<sub>2</sub> solid solutions for impact- and wear-resistant alloys

Pavlo Pryshazhnyuk\* and Devis Di Tommaso



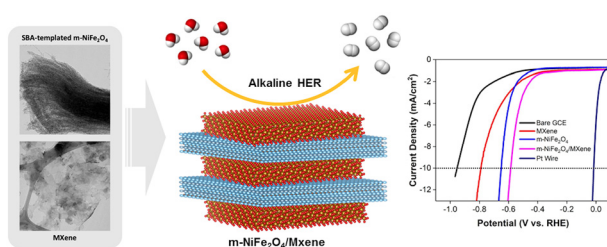
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### High energy density liquid state asymmetric supercapacitor devices using Co–Cr–Ni–Fe–Mn high entropy alloy

Gobinda C. Mohanty, Chinmayee C. Gowda, Pooja Gakhad, M. Sanjay, Suman Sarkar, Koushik Biswas,\* Abhishek Singh\* and Chandra S. Tiwary\*

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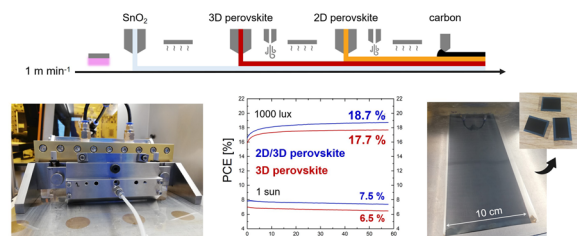
### A SBA-15-templated mesoporous NiFe<sub>2</sub>O<sub>4</sub>/MXene nanocomposite for the alkaline hydrogen evolution reaction

Munawar Khalil,\* Michael Lesa, Alexander G. Juandito, Afiten R. Sanjaya, Tribidasari A. Ivandini, Grandprix T. M. Kadja, Muhammad Haris Mahyuddin, Mehran Sookhikian and Yatimah Alias

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### MANUFACTURING PROCEDURE FOR FLEXIBLE PEROVSKITE SOLAR CELLS

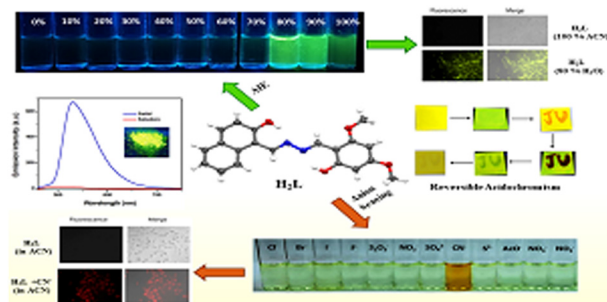
LOW-COST | LARGE SCALE DEPOSITION | AMBIENT ATMOSPHERE | LOW TEMPERATURE



### Fabrication of low-cost and flexible perovskite solar cells by slot-die coating for indoor applications

Cristina Teixeira, Rosinda Fuentes-Pineda, Luisa Andrade, Adélio Mendes and Dávid Forgács\*

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### Naphthyl-azine – aggregation induced emission, reversible acidochromism, cyanide sensing and its application in intracellular imaging

Sukanya Paul, Kingshuk Debsharma, Sunanda Dey, Satyajit Halder, Kuladip Jana and Chittaranjan Sinha\*



## CORRECTIONS

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**Correction: Solution-processed orange and white OLEDs sensitized by an electroactive pure organic room-temperature phosphorescent polymer**

Yiting Tian, Renze He, Guoyun Meng,\* Shumeng Wang,\* Lei Zhao and Junqiao Ding\*

3893

**Correction: Large scale recyclable monolithic methyltrimethoxysilane aerogels formed by self-reinforcement**

Gylen Odling,\* Hannah Logan, Aaron Chan, Andrew J. Bissell, Colin R. Pulham and David E. Oliver

