

# Materials Advances

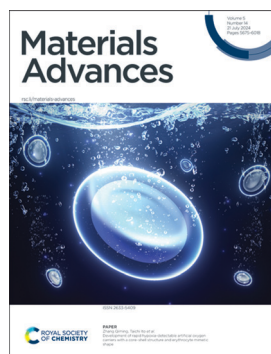
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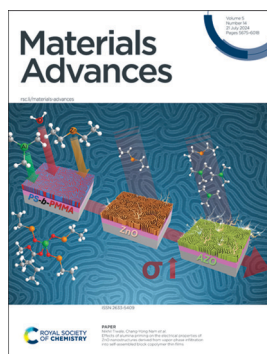
## IN THIS ISSUE

ISSN 2633-5409 CODEN MAADC9 5(14) 5675-6018 (2024)



### Cover

See Taichi Ito *et al.*, pp. 5687–5697.  
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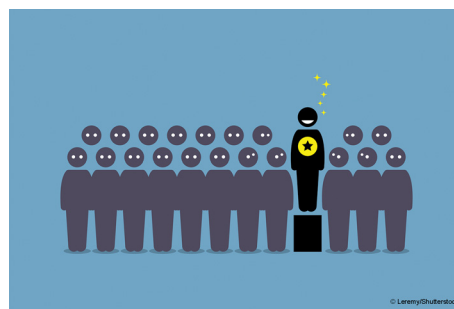
### Inside cover

See Nikhil Tiwale, Chang-Yong Nam *et al.*, pp. 5698–5708.  
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## EDITORIAL

5686

### Outstanding Reviewers for *Materials Advances* in 2023

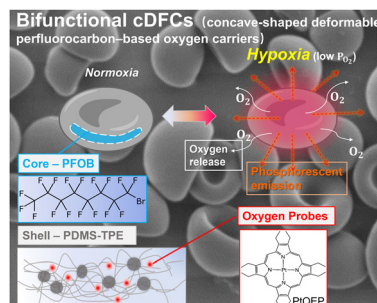


## PAPERS

5687

### Development of rapid hypoxia-detectable artificial oxygen carriers with a core–shell structure and erythrocyte mimetic shape

Zhang Qiming,\* Natsuko F. Inagaki, Yusuke Hirabayashi, Masamichi Kamihira and Taichi Ito\*



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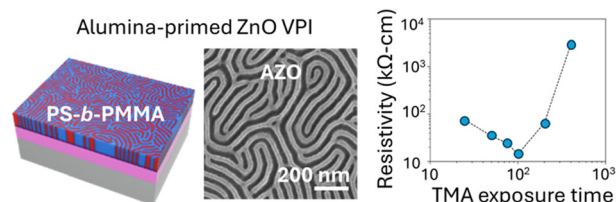
[rsc.li/chemcomm](http://rsc.li/chemcomm)

Fundamental questions  
Elemental answers

5698

## Effects of alumina priming on the electrical properties of ZnO nanostructures derived from vapor-phase infiltration into self-assembled block copolymer thin films

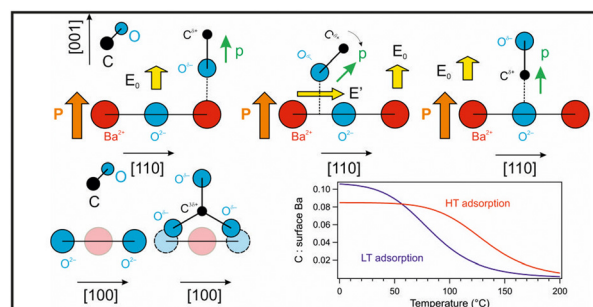
Won-Il Lee, Ashwanth Subramanian, Kim Kisslinger, Nikhil Tiwale\* and Chang-Yong Nam\*



5709

## Molecular adsorption–desorption of carbon monoxide on ferroelectric BaTiO<sub>3</sub>(001)

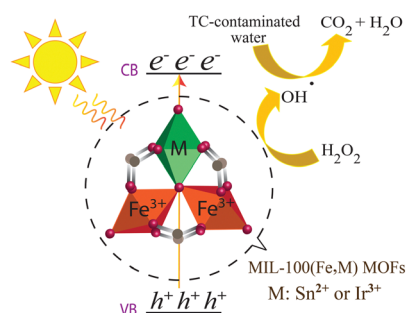
Alexandru-Cristi Iancu, Nicoleta G. Apostol, Adela Nicolaev, Laura E. Abramiuc, Cristina F. Chirilă, Dana G. Popescu and Cristian M. Teodorescu\*



5724

## Adsorptive and photo-Fenton properties of bimetallic MIL-100(Fe,Sn) and MIL-100(Fe,Ir) MOFs toward removal of tetracycline from aqueous solutions

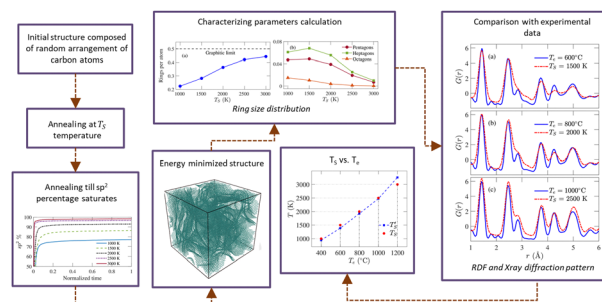
Naghme Sadat Mirbagheri, Philipp A. Heizmann, Vanessa Trouillet, Jan Büttner, Anna Fischer and Severin Vierrath\*



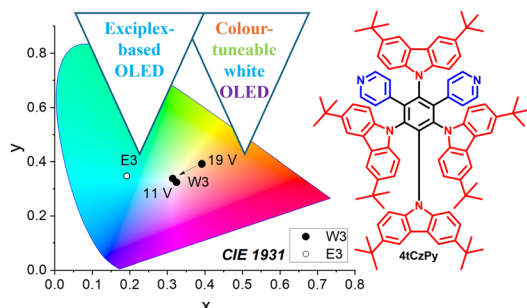
5738

## Structurally realistic carbide-derived carbon model in annealing molecular dynamics methodology with analytic bond-order potential

Koushik Sarkar and Muhammad Anisuzzaman Talukder\*



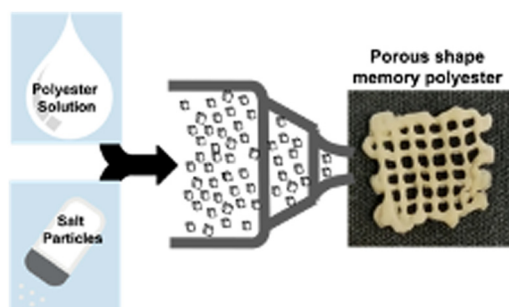
5749



### Effects of variation in phenylpyridinyl and di-tert-butyl-carbazoyl substituents of benzene on the performance of the derivatives in colour-tunable white and exciplex-based sky-blue light-emitting diodes

Simas Macionis, Dalius Gudeika, Oleksandr Bezvikonnyi, Serhii Melnykov, Liliya Gumnilovych, Jurate Simokaitiene, Svetlana Sargsyan, Rasa Keruckiene, Dmytro Volyniuk, Pavlo Stakhira and Juozas V. Grazulevicius\*

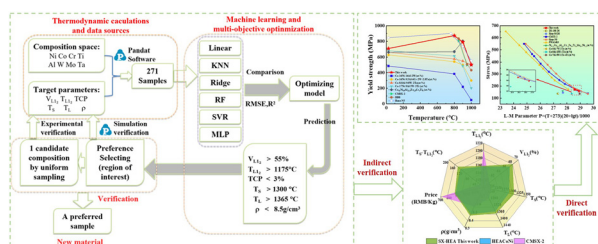
5763



### Direct ink writing of porous shape memory polyesters

Greeshma Raghuvaran, Brandon M. Nitschke, Courtney T. Roberts, Melissa A. Grunlan and Emily Pentzer\*

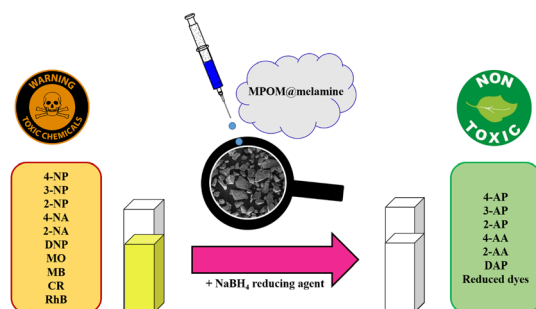
5772



### Accelerated design of L<sub>12</sub>-strengthened single crystal high entropy alloys based on machine learning and multi-objective optimization

Wenchao Yang,\* Shunsheng Lin, Qiang Wang, Chen Liu, Jiarun Qin and Jun Zhang\*

5781



### Cu-containing polyoxometalate-based melamine in the environmental remediation of toxic organic pollutants

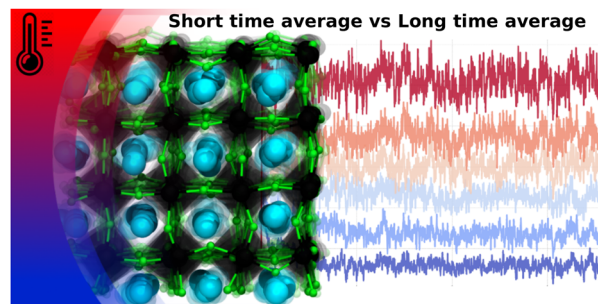
Nahal Aramesh and Bahram Yadollahi\*



5794

### Phase transitions in CsPbBr<sub>3</sub>: evaluating perovskite behavior over different time scales

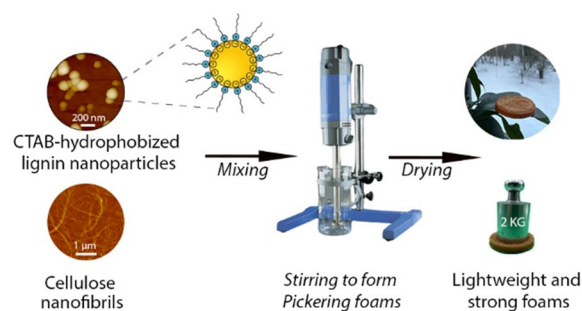
Lucas Martin Farigliano,\* Fabio Negreiros Ribeiro and Gustavo Martini Dalpian\*



5802

### Hydrophobized lignin nanoparticle-stabilized Pickering foams: building blocks for sustainable lightweight porous materials

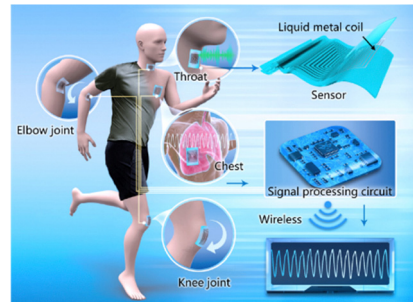
Tao Zou, Erfan Kimiaei, Zahra Madani, Muzaffer A. Karaaslan, Jaana Vapaavuori, Johan Foster, Scott Rennecker and Monika Österberg\*



5813

### Ultra-high resolution, multi-scenario, super-elastic inductive strain sensors based on liquid metal for the wireless monitoring of human movement

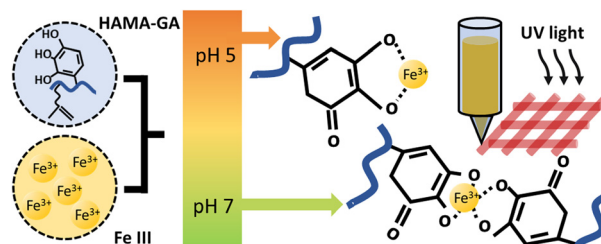
Jian Mao, Zidong He,\* Yuanzhao Wu, Jinwei Cao, Shijing Zhao, Bin Chen, Jie Shang, Yiwei Liu\* and Run-Wei Li\*



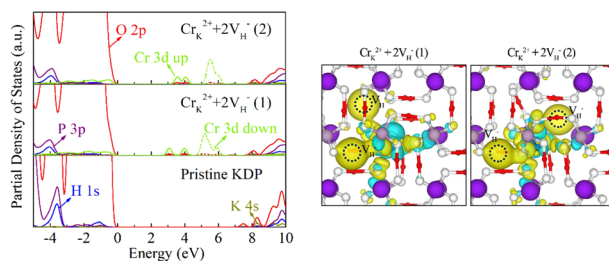
5823

### A comprehensive study on rheological properties of photocrosslinkable gallol-metal complexed hyaluronic acid-based biomaterial inks

Hatai Jongprasitkul, Sanna Turunen, Minna Kellomäki and Vijay Singh Parihar\*



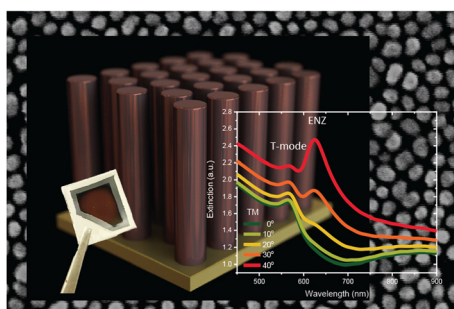
5838



### Influence of Cr<sup>3+</sup> cluster defects on crystal structure and optical properties of KDP crystals studied by DFT and UV-Vis

Yang Li, Lisong Zhang,\* Xun Sun,\* Mingxia Xu, Baoan Liu, Xian Zhao, Guokai Hao, Jianyu Bai and Xiaojing Lin

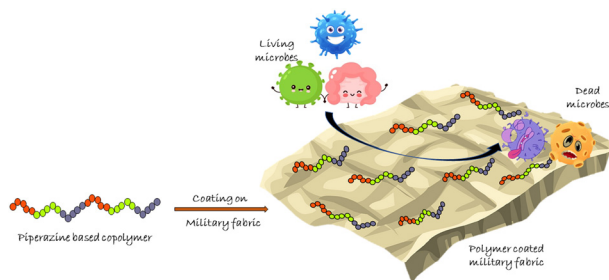
5845



### Copper-based core-shell metamaterials with ultra-broadband and reversible ENZ tunability

Anastasiia Zaleska,\* Alexey V. Krasavin, Anatoly V. Zayats and Wayne Dickson

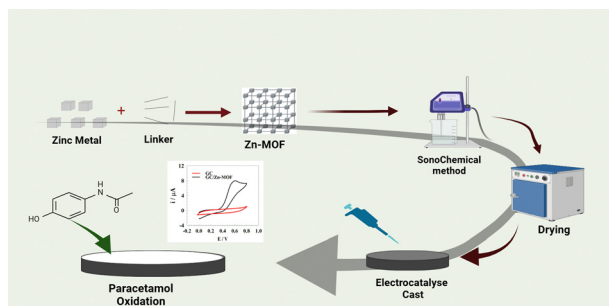
5855



### Unveiling the effectiveness of antimicrobial BPJ polymer coatings in enhancing microbial resistance

Sonali Gupta, Yashoda Malgar Puttaiahgowda\* and Ananda Kulal

5870



### A facile sonochemical synthesis of the Zn-based metal-organic framework for electrochemical sensing of paracetamol

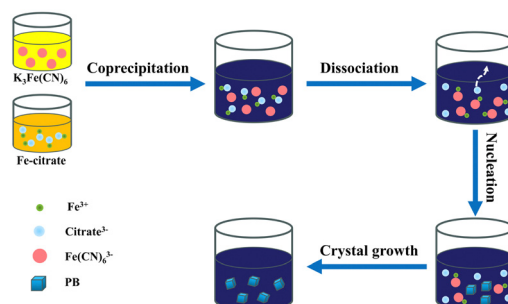
Khaled M. Ismail,\* Safaa S. Hassan, Shymaa S. Medany and Mahmoud A. Hefnawy\*



5885

### Citric acid-assisted synthesis of $\text{FeFe}(\text{CN})_6$ with reduced defects and high specific surface area for aqueous zinc–sodium hybrid batteries

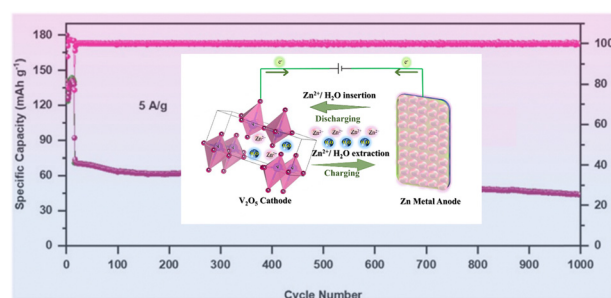
Chaoqiao Yang, Ya Zhao, Jiaxin Fan,\* Lin Li, Jinxia Zhou, Keliang Wang, Fenglian Lu and Hongmei Sun



5896

### Highly-robust nanoplate-shaped $\text{V}_2\text{O}_5$ as an efficient cathode material for aqueous zinc ion batteries

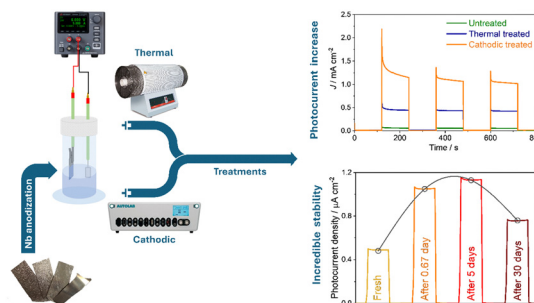
Priya Yadav, Ahmad Nurul Fahri, Jay Singh, Ravinder Singh, Jaekook Kim\* and Alok Kumar Rai\*



5903

### Boosting photocurrent of anodized $\text{Nb}_2\text{O}_5$ by synergetic post-synthesis electrochemical treatment

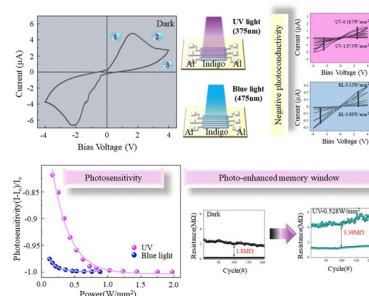
Wallas T. Menezes, Roger Gonçalves and Ernesto C. Pereira\*



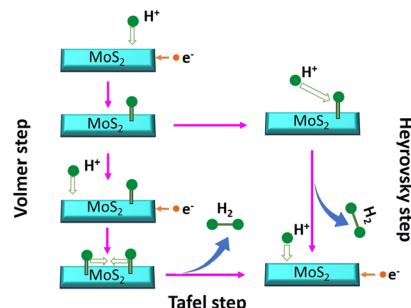
5912

### Investigation of the transient photo-response and switching window of an Al/indigo/Al device: unveiling negative photoconductivity and the photo-enhanced memory window

Sreelakshmi B. and R. Thamankar\*



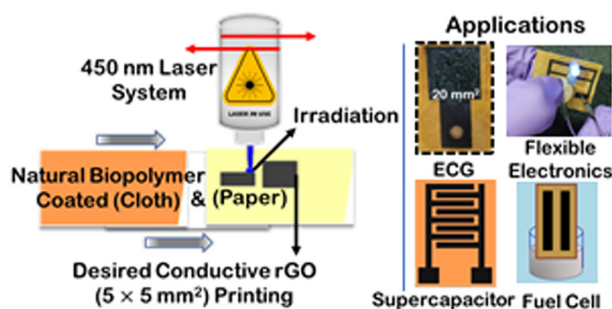
5922



### Alkali metal-assisted nucleation and growth of stable 1T/2H MoS<sub>2</sub> for the hydrogen evolution reaction

Avala Ramesh, Manoj Goswami, Surender Kumar and Sukanti Behera\*

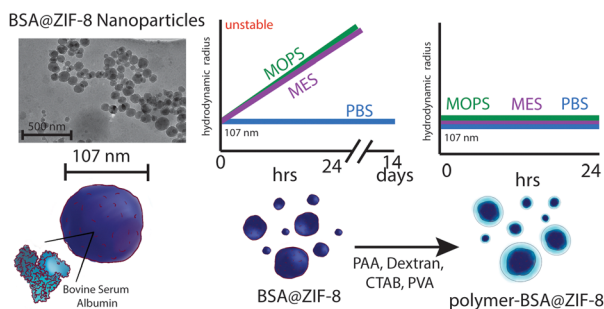
5932



### Shellac-mediated laser-induced reduced graphene oxide film on paper and fabric: exceptional performance in flexible fuel cell, supercapacitor and electrocardiography applications

Pavar Sai Kumar, Vanmathi S., Himanshi Awasthi, Imran Khan, Ritesh Kumar Singh, Vimal Kumar Sharma, Chandrani Pramanik\* and Sanket Goel\*

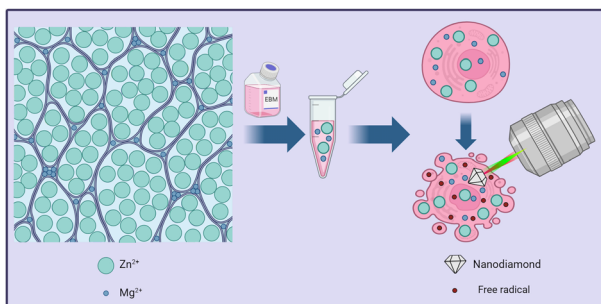
5945



### Improving the colloidal stability of protein@ZIF-8 nanoparticles in biologically relevant buffers

Justin Van Houten, Ruben Castillo Barberi, Jared King and Alana F. Ogata\*

5958



### What is the impact of plastic deformation on cytocompatibility of biodegradable Zn-Mg alloys?

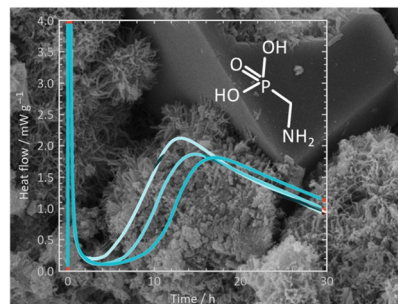
Daniel Wojtas, Klaudia Trembecka-Wójciga, Magdalena Gieleciak, Agnieszka Bigos, Kamil Brudecki, Sylwia Przybysz-Gloc, Romana Schirhagl, Aldona Mzyk\* and Anna Jarzębska\*



5974

### Cement retarding mechanism of phosphonates and their interaction with aluminium

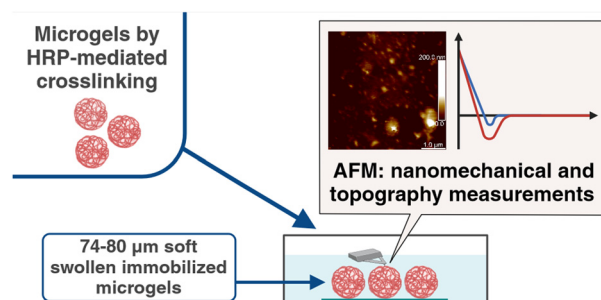
Daniel Axthammer and Joachim Dengler\*



5984

### Soft micron-sized polypeptide microgels: preparation, crosslink density, topography and nanomechanics in swollen state

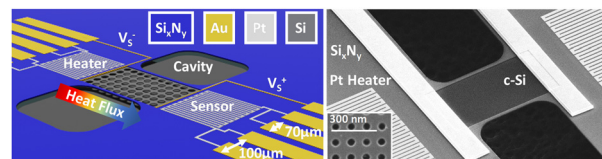
Oleksii Kotko, Petr Šálek,\* Jana Dvořáková, Miroslava Dušková Smrčková, Ján Šomvársky, Jean Jacques Bonvent, Sérgio Brochsztain, Miroslav Slouf and Vladimír Proks



5998

### Thermoelectric characterization of crystalline nano-patterned silicon membranes

Hafsa Ikzibane, Akash Patil, Jon Canosa, Etienne Okada, Etienne Blandre, Emmanuel Dubois and Jean-François Robillard\*



6007

### Mechano-synthesis of a AgSrFeO₃ catalyst for epoxidation of ethylene in a chemical looping set-up

Chawangwa Damba, Isaac N. Beas,\* Mmilili M. Mapolelo, James Darkwa and E. J. Marek

