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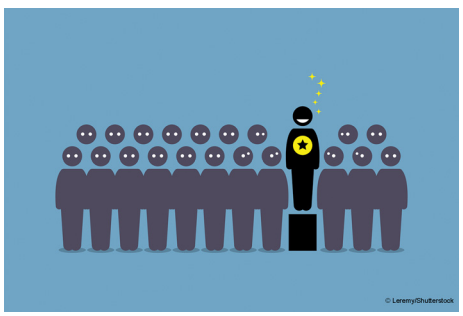
Cover
See Taichi Ito *et al.*, pp. 5687–5697. Image reproduced by permission of Taichi Ito from *Mater. Adv.*, 2024, **5**, 5687. Image credit: Natsuko F. Inagaki.

Inside cover
See Nikhil Tiwale, Chang-Yong Nam *et al.*, pp. 5698–5708. Image reproduced by permission of Chang-Yong Nam and Won-Il Lee from *Mater. Adv.*, 2024, **5**, 5698.

EDITORIAL

5686

Outstanding Reviewers for *Materials Advances* in 2023

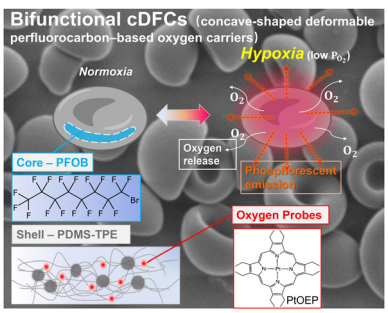


PAPERS

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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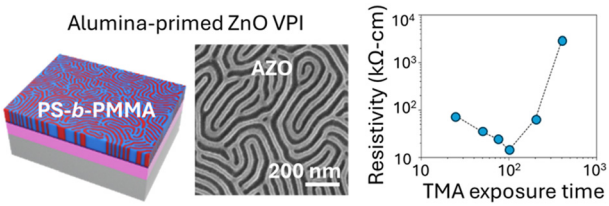
PAPERS

5698

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

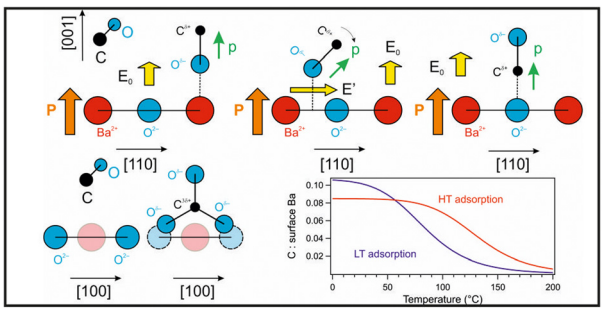
Won-Il Lee, Ashwanth Subramanian, Kim Kisslinger, Nikhil Tiwale* and Chang-Yong Nam*



5709

Molecular adsorption–desorption of carbon monoxide on ferroelectric $BaTiO_3$(001)

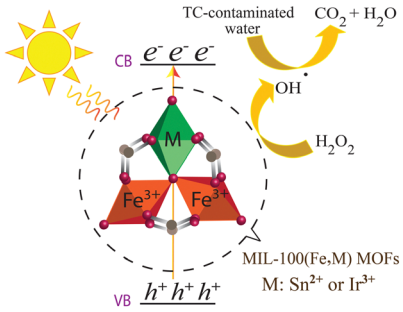
Alexandru-Cristi Iancu, Nicoleta G. Apostol, Adela Nicolaev, Laura E. Abramiuc, Cristina F. Chirilă, Dana G. Popescu and Cristian M. Teodorescu*



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

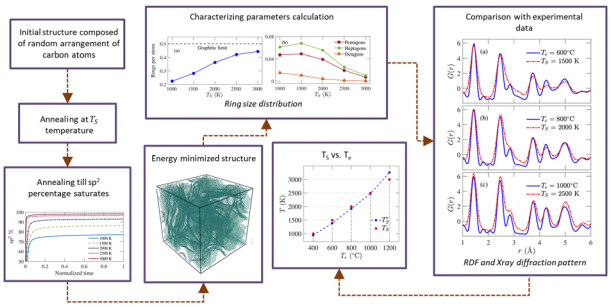
Naghmeh Sadat Mirbagheri, Philipp A. Heizmann, Vanessa Trouillet, Jan Büttner, Anna Fischer and Severin Vierrath*



5738

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

Koushik Sarkar and Muhammad Anisuzzaman Talukder*



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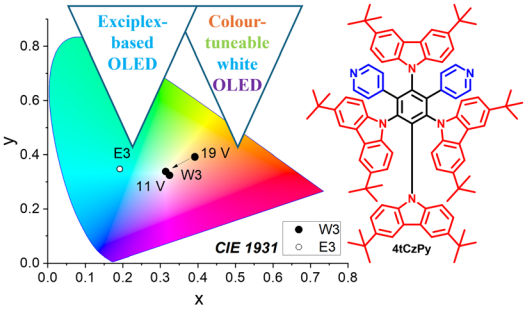
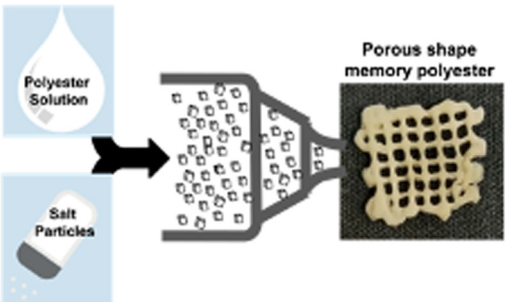
5749



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

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

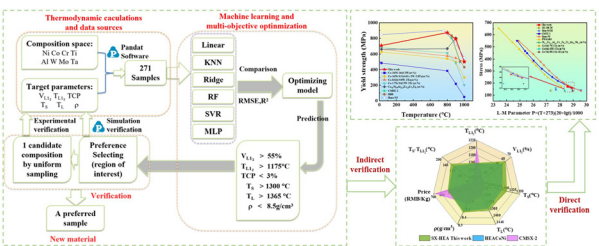
5763



Direct ink writing of porous shape memory polyesters

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

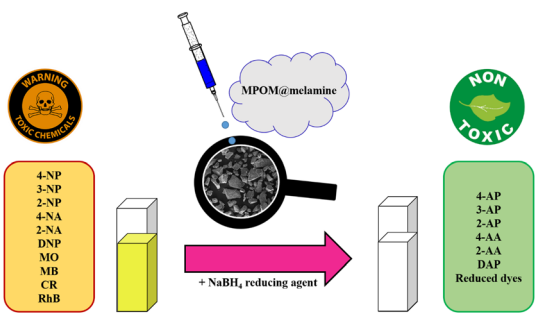
5772



Accelerated design of $L1_2$-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*

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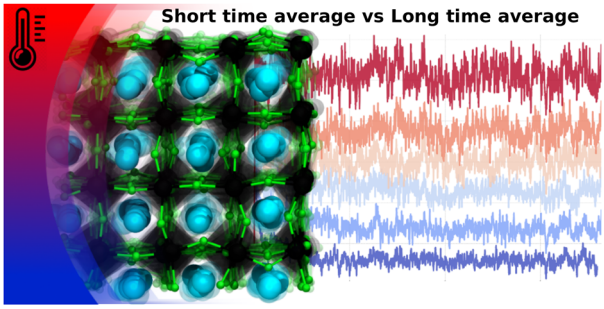
5794

Phase transitions in $CsPbBr_3$: evaluating perovskite behavior over different time scales

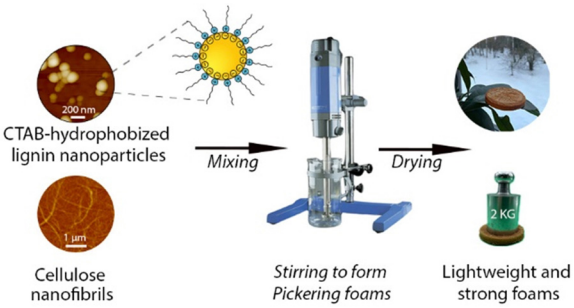
Lucas Martin Farigliano,* Fabio Negreiros Ribeiro and Gustavo Martini Dalpian*



5802

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

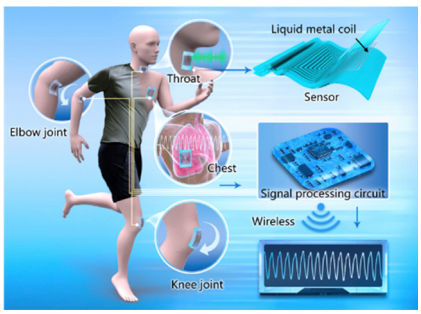
Tao Zou, Erfan Kimiaei, Zahra Madani, Muzaffer A. Karaaslan, Jaana Vapaavuori, Johan Foster, Scott Renneckar and Monika Österberg*



5813

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

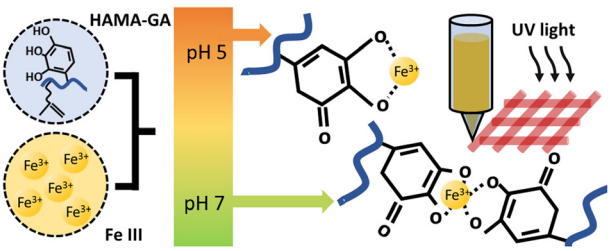
Jian Mao, Zidong He,* Yuanzhao Wu, Jinwei Cao, Shijing Zhao, Bin Chen, Jie Shang, Yiwei Liu* and Run-Wei Li*



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*



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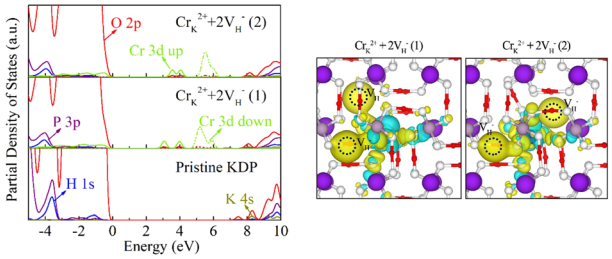
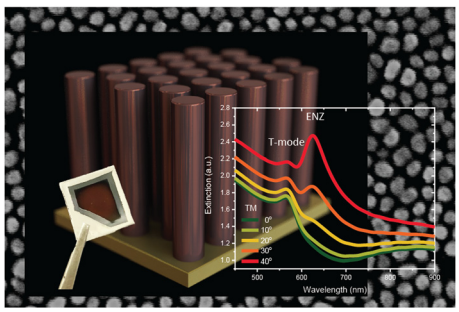


Influence of Cr^{3+} cluster defects on crystal structure and optical properties of KDP crystals studied by DFT and UV-Vis

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

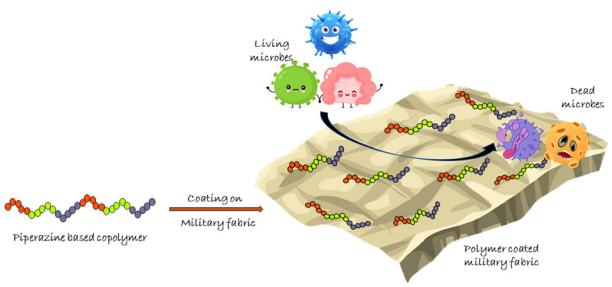
5845



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

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

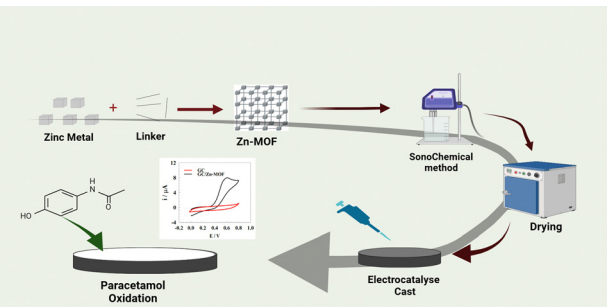
5855



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*

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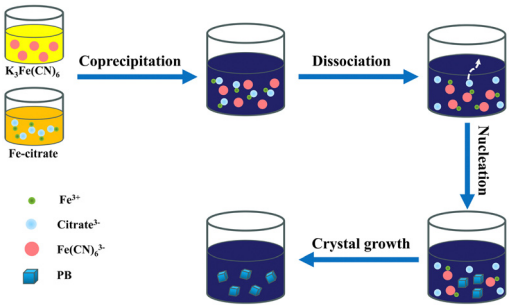
5885

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

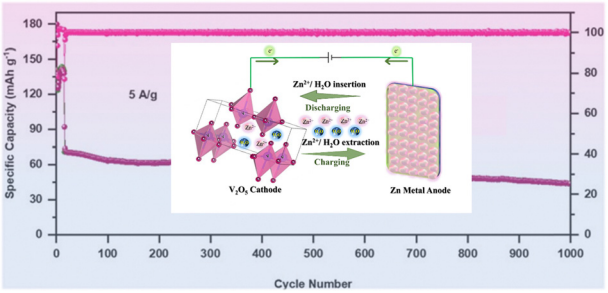
Chaoqiao Yang, Ya Zhao, Jiaxin Fan,* Lin Li, Jinxia Zhou, Keliang Wang, Fenglian Lu and Hongmei Sun



5896

Highly-robust nanoplate-shaped V_2O_5 as an efficient cathode material for aqueous zinc ion batteries

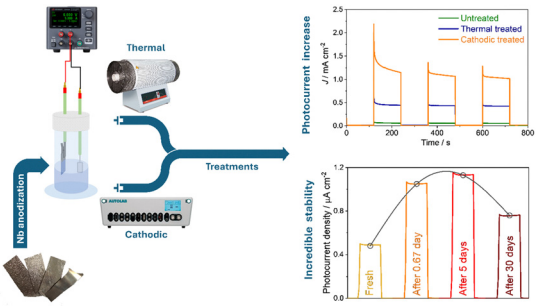
Priya Yadav, Ahmad Nurul Fahri, Jay Singh, Ravinder Singh, Jaekook Kim* and Alok Kumar Rai*



5903

Boosting photocurrent of anodized Nb_2O_5 by synergetic post-synthesis electrochemical treatment

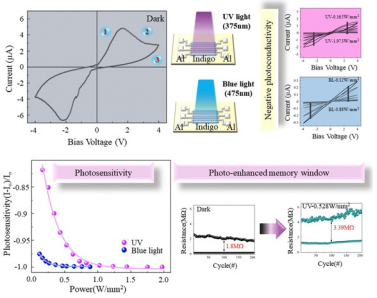
Wallas T. Menezes, Roger Gonçalves and Ernesto C. Pereira*



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*



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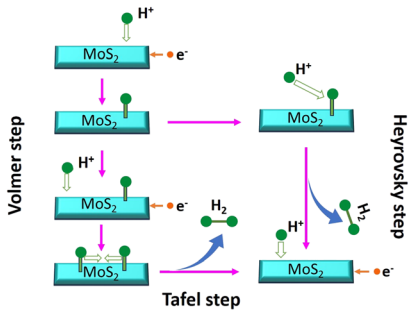
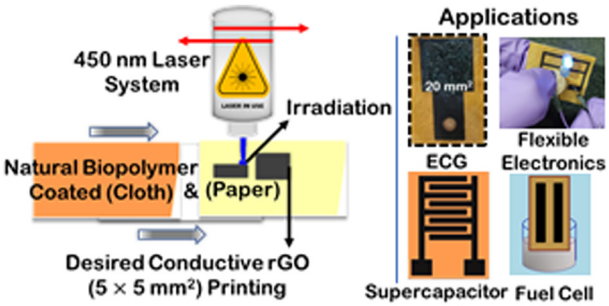


Alkali metal-assisted nucleation and growth of stable 1T/2H MoS_2 for the hydrogen evolution reaction

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

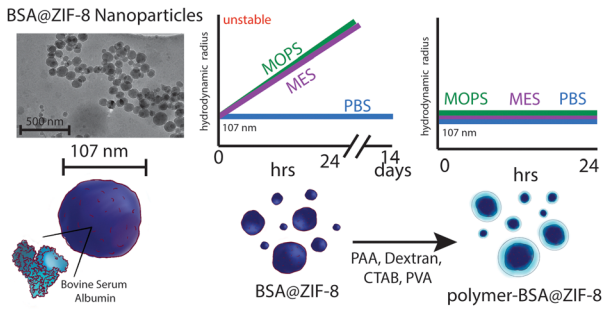
5932



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*

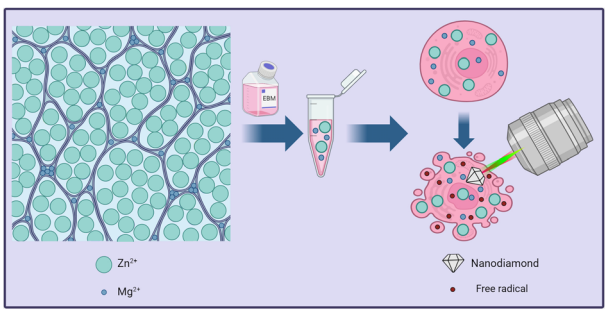
5945



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*

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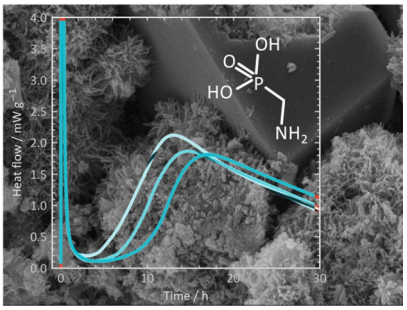
PAPERS

5974

Cement retarding mechanism of phosphonates and their interaction with aluminium

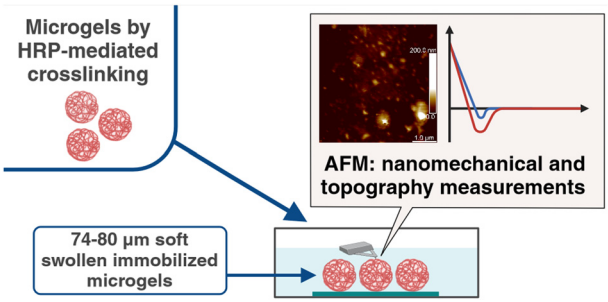
Daniel Axthammer and Joachim Dengler*



5984

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

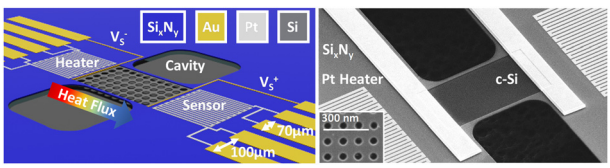
Oleksii Kotko, Petr Šálek,* Jana Dvořáková, Miroslava Dušková Smrčková, Ján Šomvársky, Jean Jacques Bonvent, Sérgio Brochsztain, Miroslav Šlouf and Vladimír Proks



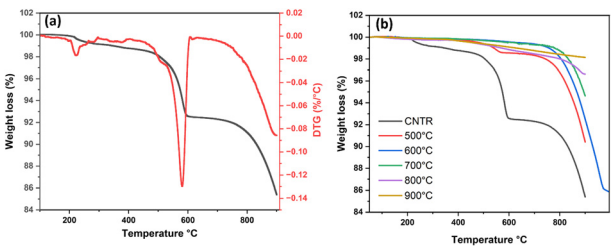
5998

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 $AgSrFeO_3$ 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