

# Journal of Materials Chemistry A

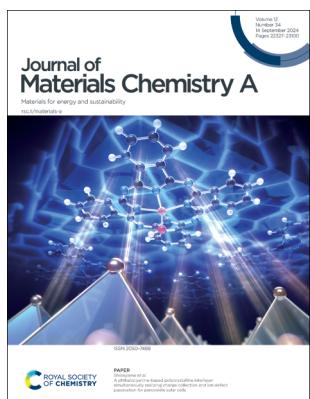
Materials for energy and sustainability

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## IN THIS ISSUE

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### Cover

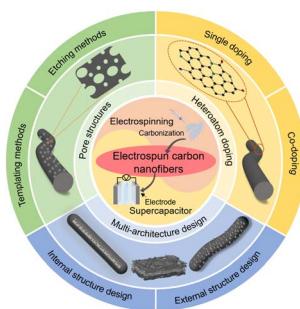
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Chem. A*, 2024, **12**, 22510.

## REVIEWS

22346

### Improving supercapacitor electrode performance with electrospun carbon nanofibers: unlocking versatility and innovation

Hailang Xu, Bin Li, Zeyu Wang, Qian Liao, Lingcong Zeng, Heng Zhang, Xiaoliang Liu, Deng-Guang Yu and Wenliang Song\*



22372

### Polymer-based films for all-in-one piezo-driven self-charging power systems

Kewei Shu,\* Wenjuan Li, Qijie Wu,\* Yan Zong, Chen Zhao, Yi Zhang and Caiyun Wang\*



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## REVIEWS

22396

**Wearable electrochemical bioelectronics for agriculture**

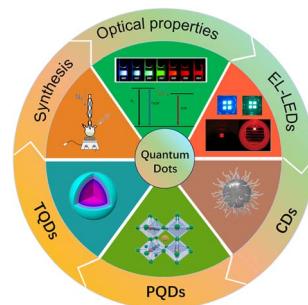
Bing Xue, Xiaoqian Su, Le Li, Tedrick Thomas Salim Lew and Changsheng Wu\*



22417

**Shiny quantum dots: synthesis, properties, and electroluminescent light-emitting diodes**

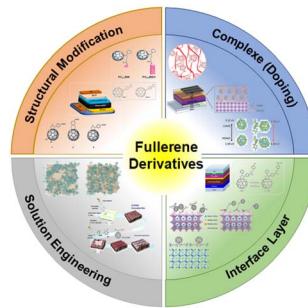
Hongwei Wang, Boyang Wang, Jiaxin Bai and Siyu Lu\*



22442

**Structural modification of fullerene derivatives for high-performance inverted perovskite solar cells**

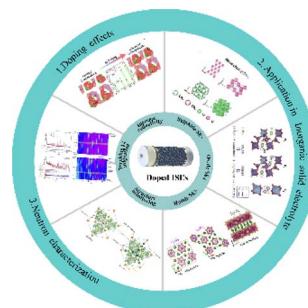
Han Wang, Zhiyuan Zhang, Chenyang Zhang, Yiguo Yao and Kai Wang\*



22458

**Heteroatom-based doping and neutron diffraction: doping strategies and mechanisms for ionic conductivity enhancement in inorganic solid-state electrolytes**

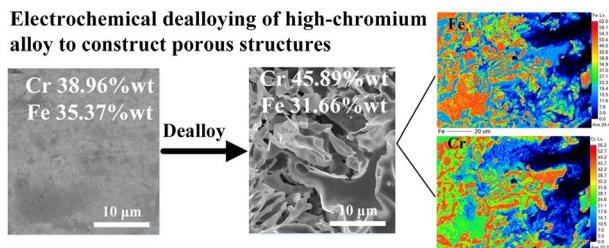
Yingjie Dong, Haiting Shi,\* Hao Li, Xianyan Wu,\* Wanwei Jiang, Wenhui Cui, Jiarong Niu and Zhiwei Xu\*



## COMMUNICATIONS

22487

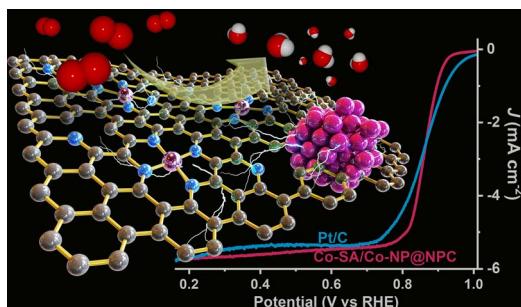
## Electrochemical dealloying of high-chromium alloy to construct porous structures



## Electrochemical dealloying of a high-chromium alloy at oxygen evolution potential

Lijia Ning, Chunmei Yang,\* Guannan Jiang, Chenglin Wang, Shuaishuai Wang, Yang Chen, Huanxi Zheng,\* Xin Liu and Jiyu Liu\*

22494

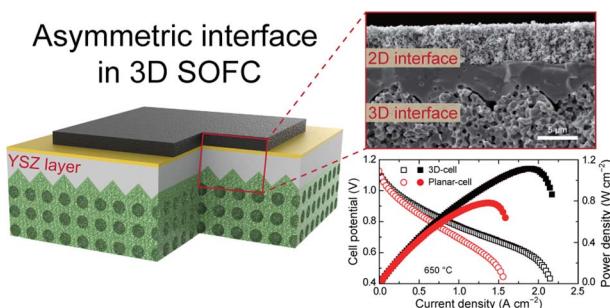


## Scalable nanoarchitectonics with microporous polymer composite for methanol-tolerant ORR electrocatalysts

Abin Sebastian, Atanu Panda, Ravi Nandan, Joel Henzie, Ovidiu Cretu, Jian Xu, Nadiia Velychkivska, Renzhi Ma, Pooja Gakhad, Abhishek Kumar Singh, Gary J. Richards, Koji Kimoto, Lok Kumar Shrestha, Katsuhiko Ariga, Yusuke Yamauchi and Jonathan P. Hill\*

22504

## Asymmetric interface in 3D SOFC

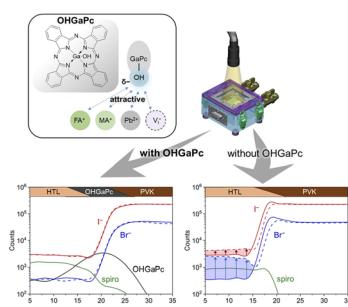


## Unraveling the effects of asymmetric interfaces in three-dimensional solid oxide fuel cells

Young Gyun Goh, Jeong Hun Kim,\* Hyoungchul Kim\* and Sung Soo Shin\*

## PAPERS

22510



## A phthalocyanine-based polycrystalline interlayer simultaneously realizing charge collection and ion defect passivation for perovskite solar cells

Tatsuya Ohsawa,\* Naoyuki Shibayama,\* Nobuhiro Nakamura, Shigeto Tamura, Ai Hayakawa, Yohei Murayama, Kohei Makisumi, Michitaka Kitahara, Mizuki Takayama, Takashi Matsui, Atsushi Okuda, Yuiga Nakamura, Masashi Ikegami and Tsutomu Miyasaka

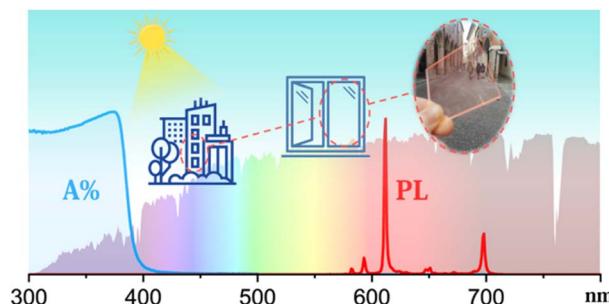


## PAPERS

22516

**Transparent and colour-neutral luminescent solar concentrators using bright Eu<sup>3+</sup> supramolecular cages towards photovoltaic windows**

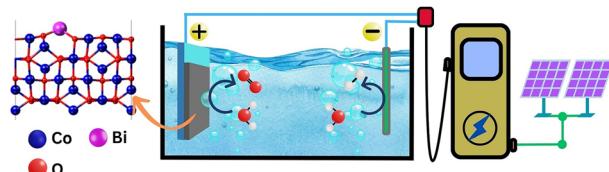
Irene Motta, Gregorio Bottaro,\* Maria Rando, Marzio Rancan,\* Roberta Seraglia and Lidia Armelao



22528

**Improving the electrocatalytic activity of cobalt oxide with bismuth for acidic oxygen evolution reaction**

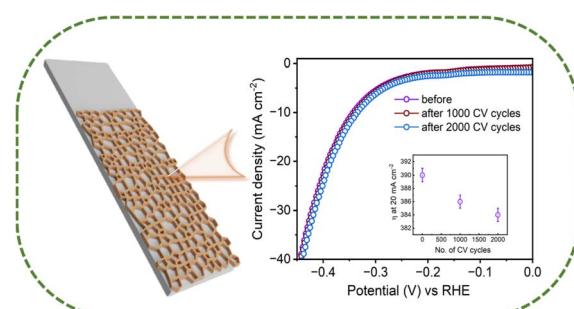
Belvin Thomas, Bowen Peng, Xiaoxi Huang\* and Tewodros Asefa\*



22539

**Stainless steel-derived nano-porous oxide: a cost-efficient, stable, and corrosion-resistant hydrogen evolution catalyst**

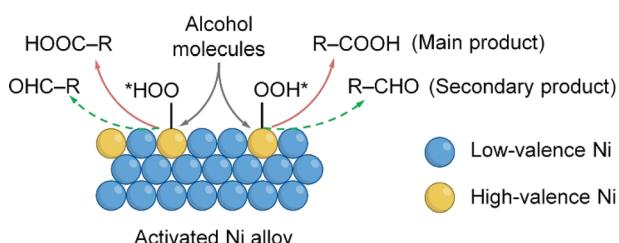
Ranjith Bose,\* Surya Prakash Gajagouni, Imad Barsoum, Sung Oh Cho and Akram Alfantazi\*



22550

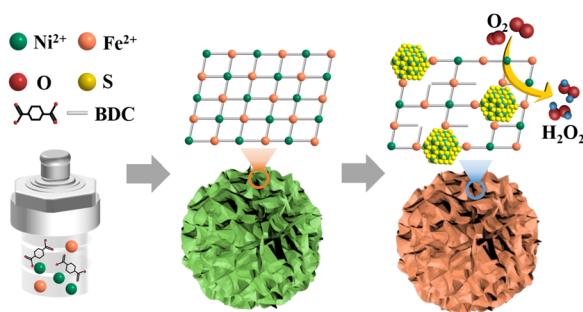
**Electro-oxidation of alcohols over electrochemically activated nickel alloys for energy-saving hydrogen production**

Ming Ni, Minyuan Tan, Kang Luo, Daochuan Jiang, Yupeng Yuan, Chuhong Zhu,\* Haiwei Du\* and Hangjuan Ren\*



## PAPERS

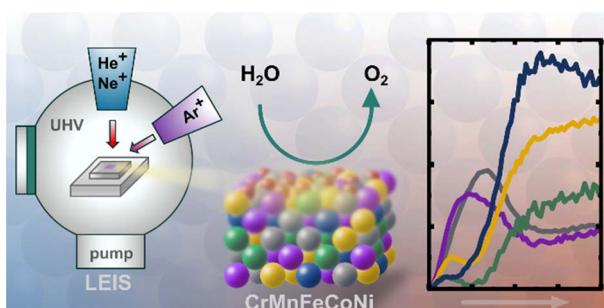
22557



### Transition metal chalcogenide nanoparticle embedded metal–organic framework nanosheets for high-performance $\text{H}_2\text{O}_2$ electrosynthesis

Xinchan Zhang, Chaoqi Zhang,\* Yingying Zou, Tong Bao, Jing Wang,\* Siham Yousuf Al-Qaradawi, Nageh K. Allam, Chengzhong Yu\* and Chao Liu\*

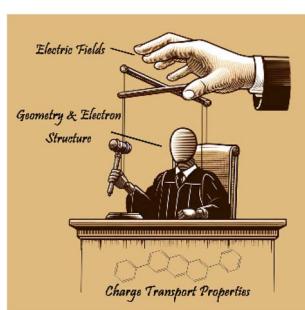
22565



### Bulk-independent surface oxide composition controls the electrochemical performance of high-entropy alloys

Matthias Kogler, Matteo Olgiati, Markus Ostermann, Philipp Rachle, Soniya Gahlawat, Markus Valtiner\* and Christian M. Pichler\*

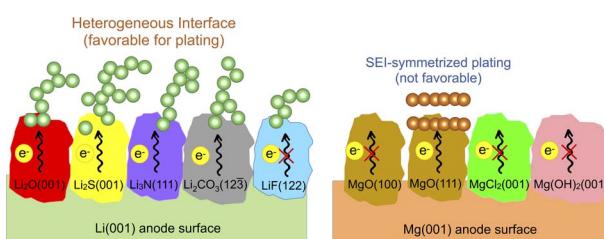
22566



### The response of charge transfer properties to electric fields in organic semiconductors: a comprehensive theoretical investigation

Hengyue Zhang, Jie Zhu, Xinxin Niu, Qian Zhang, Yajing Sun\* and Weigang Zhu\*

22584



### Interfacial insights for divergent dendrite formation mechanisms in lithium and magnesium anodes

Hong-Kai Chen and Hong-Kang Tian\*

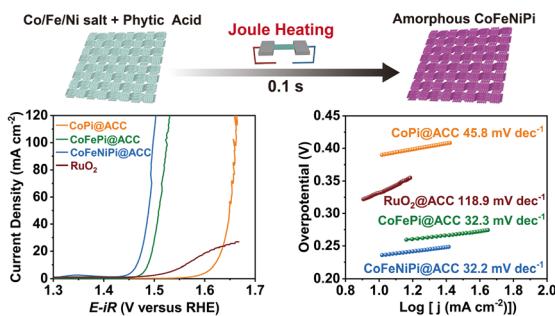


## PAPERS

22597

**Ultrafast Joule heating-induced formation of amorphous CoFeNi phosphate for efficient and stable oxygen evolution reaction**

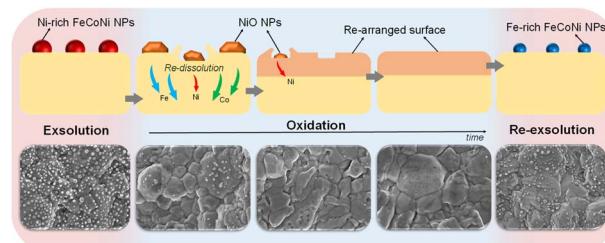
Junhao Ma, Chonghan Xia, Teddy Salim, Yee Yan Tay, Lydia H. Wong and Kwan W. Tan\*



22609

**Understanding the evolution of ternary alloyed nanoparticles during reversible exsolution from double perovskite oxides**

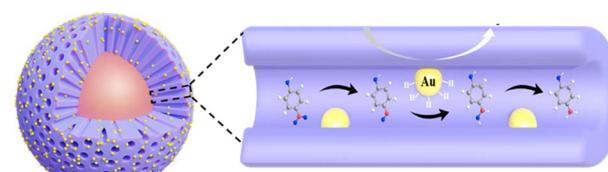
Andrés López-García, Alfonso J. Carrillo,\* Catalina Elena Jiménez, Rosario Suárez Anzorena, Raúl García-Díez, Virginia Pérez-Dieste, Ignacio J. Villar-García, Ana B. Hungría, Marcus Bär and José M. Serra\*



22627

**Core–shell magnetic mesoporous 3-aminophenol–formaldehyde resin microspheres with rich functional groups via interface co-assembly and polymerization**

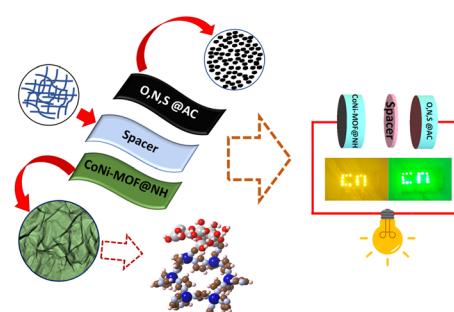
Jiarong Li, Shude Liu, Yuanzhao Xie, Fengluan Jiang, Xinyu Huang, Jianfeng Xia,\* Limin Wu\* and Yonghui Deng\*



22637

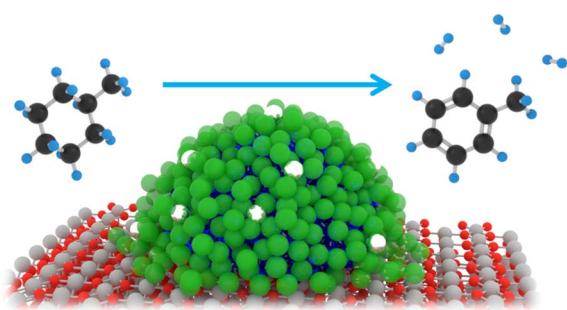
**Template-directed *in situ* grown bimetallic nanoarchitectures with hydroxide active site enriched multi-charge transfer routes for energy storage**

Antony Samy Dennyson Savariraj, Pugalethiyar Thondaiman, Periyasamy Sivakumar, Ramu Manikandan, John D. Rodney, Byung Chul Kim and Hyun Jung\*



## PAPERS

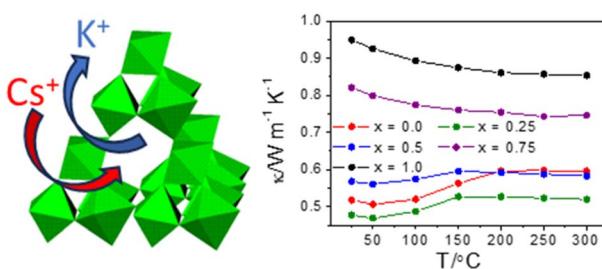
22655



**Pt single atom alloyed sub-1 nm thick Fe overlayer on supported Cu nanoparticles for methylcyclohexane dehydrogenation**

Akira Oda,\* Kosei Ichihashi, Yuta Yamamoto, Takeshi Ohtsu, Wei Shi, Kyoichi Sawabe and Atsushi Satsuma

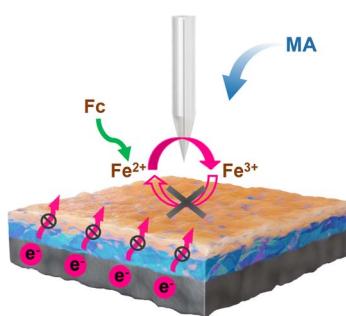
22668



**Ultralow thermal conductivity in defect pyrochlores: balancing mass fluctuation scattering and rattling modes**

Natasha Ormerod, Anthony V. Powell,\* Ricardo Grau-Crespo, Richard K. B. Gover and Christina J. Cox

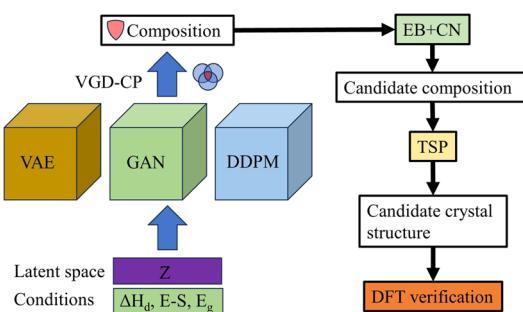
22679



**Unraveling the mechanism of methyl acetate additive for reinforcing the solid electrolyte interface on graphite anodes**

Jing Hao, Wen Liu, Yao Tian, Junru Wu, Hexin Guo, Guobin Zhang,\* Yong Yi, Cuiping Han,\* Feiyu Kang and Baohua Li\*

22689



**Inverse design of semiconductor materials with deep generative models**

Chenglong Qin, Jinde Liu, Shiyin Ma, Jiguang Du, Gang Jiang and Liang Zhao\*

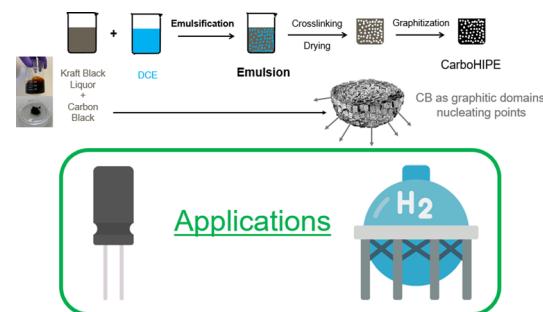


## PAPERS

22703

**Carbon black structural effect within kraft black liquor-based poly(HIPE): enhanced hydrogen storage and electro-capacitive properties**

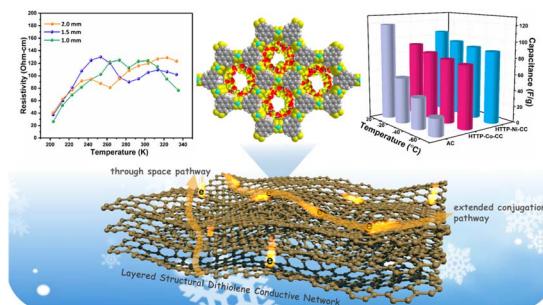
Romain Poupart, Ronan Invernizzi, Hervé Deleuze,\* Liliane Guerlou-Demourgues, Jacob Olchowka,\* David Talaga, Laurent Servant, Nicolas Penin, Jean-Louis Bobet and Rénal Backov



22715

**Conductive 2D dithiolene MOF-based electrodes for low-temperature high-performance energy storage**

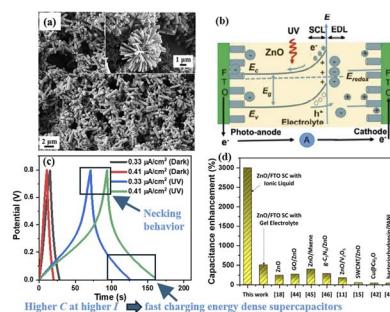
Bing Wang, Wen-Wei Song, Lin Liu, Xue-Jun Gu, Zheng-Bo Han,\* Fu-Shun Liang\* and Shi-Ming Wang\*



22725

**Influence of electrolyte on the photo-charging capability of a ZnO–FTO supercapacitor**

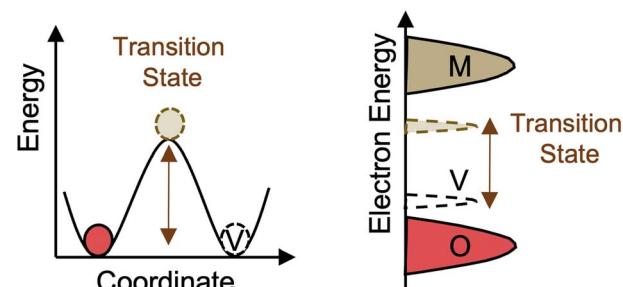
Pankaj Singh Chauhan, Mihir Parekh, Santilata Sahoo, Sumana Kumar, Ayon Das Mahapatra, Pragya Sharma, Vinod Panwar, Apparao M. Rao\* and Abha Misra\*



22737

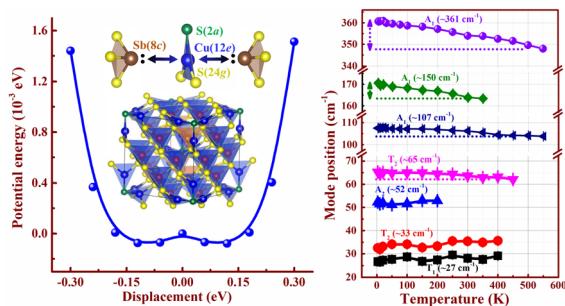
**Mechanistic insights into the origin of the oxygen migration barrier**

Daniele Vivona, Kiarash Gordiz, Randall Meyer, Sumathy Raman and Yang Shao-Horn\*



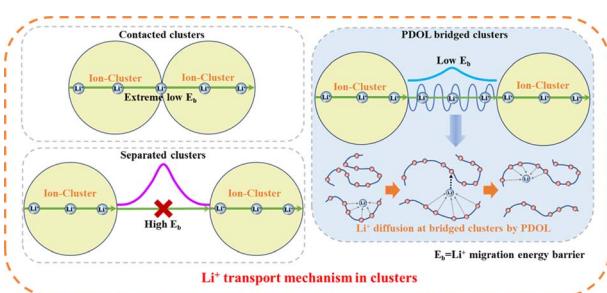
## PAPERS

22756

**Anharmonic rattling leading to ultra-low lattice thermal conductivity in  $\text{Cu}_{12}\text{Sb}_4\text{S}_{13}$  tetrahedrites**

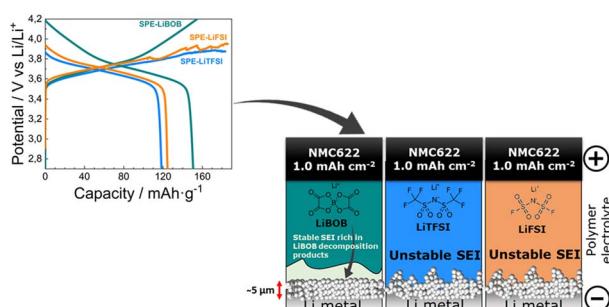
Kewal Singh Rana, Nidhi, Chandan Bera, Kanishka Biswas and Ajay Soni\*

2275

**Fast ion-conduction in solid-state Li-S batteries realized by an interfacial-bridge strategy**

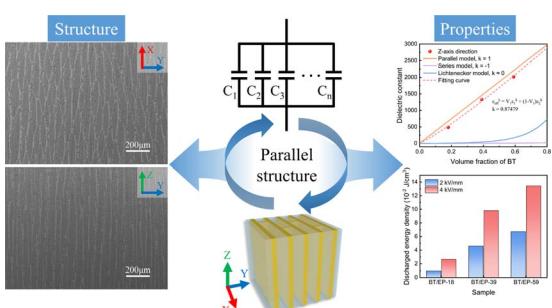
Jing Yang, Yuxuan Li, Kangshuai Zhu and Qinmin Pan\*

22775

**Enhancing high-voltage solid-state lithium-metal battery performance through a stable solid-electrolyte interphase**

Ander Orue,\* Mikel Arrese-Igor, Uxue Gonzalez, Nuria Gómez, Rosalía Cid and Pedro López-Aranguren

22785

**Construction of parallel-structured composites based on a theoretical model to achieve an ultra-high dielectric constant**

Ruolin Han, Jiafei Ren, Hui Quan, Xuehe Wang, Wenning Qi, Dali Gao,\* Zheng Zhou, Qifang Li and Guang-Xin Chen\*

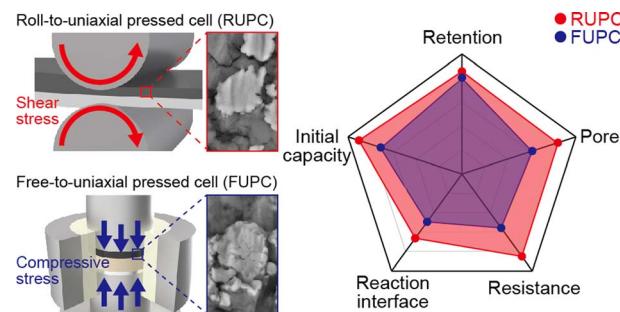


## PAPERS

22797

**Shear-controlled composite cathodes for all-solid-state batteries combined synergistically with stereology-driven image analysis**

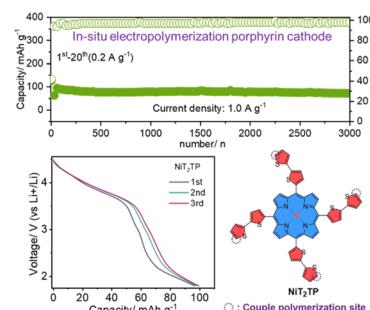
Hyeseong Jeong, Heesu Hwang, Jeong-Won Cho, Dongwook Shin, Jong-Ho Lee, Sung Soo Shin,\* Jin-Ha Hwang\* and Hyoungchul Kim\*



22809

**An extended thiophene chain for Ni-based porphyrin derivatives enabling a high potential and long cycle life for electrochemical charge storage**

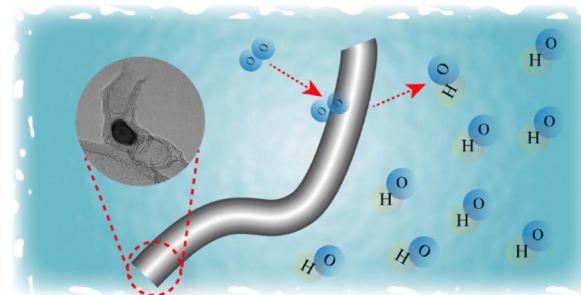
Jiahao Zhang, Chao Ye, Yangmei Zhou, Caihong Sun, Tianfu Li, Xi Peng, Xiujuan Sun, Binhu Chen, Zhi Chen\* and Ping Gao\*



22820

**Substrate-free growth of N-doped bamboo tube morphology on CoNi alloy nanoparticles as an electrocatalyst for anion exchange membrane fuel cells**

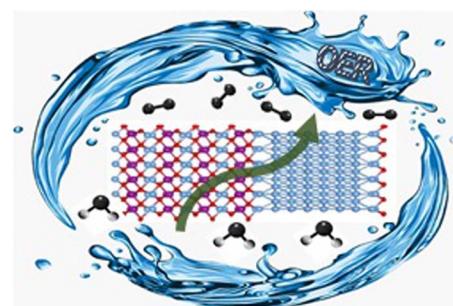
Anil Kumar U. and Vishal M. Dhavale\*



22832

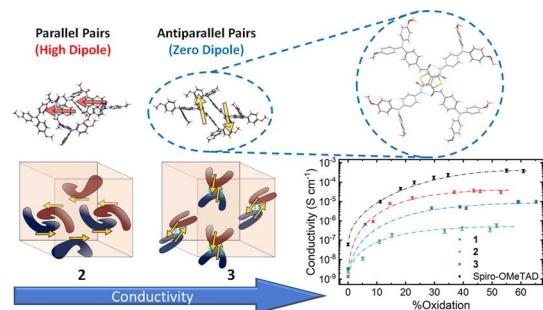
**Robust nanoporous NiMn oxide electrocatalysts for the oxygen evolution reaction through defect engineering**

Arpit Thomas, Ambrish Kumar, Ram K. Sharma, Edgar C. Buck, Bharat Gwalani, Meha Bhogra\* and Harpreet Singh Arora\*



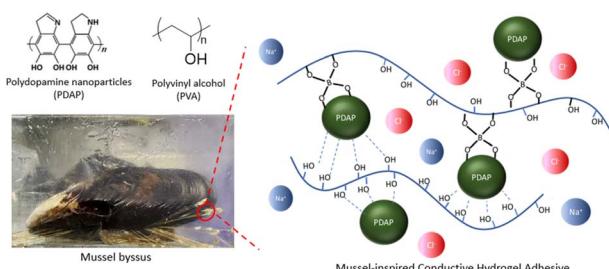
## PAPERS

22844

**Overcoming the mobility penalty introduced by dipole disorder in small-molecule HTM films**

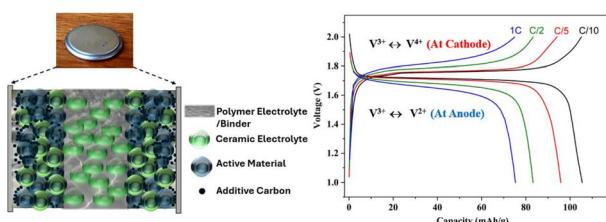
Benjamin Vella, Miriam H. Fsadni, Thomas Pope, Marcin Giza, Fraser J. Angus, Ivan Shmarov, Paula L. Lalaguna, Michele Cariello, Claire Wilson, Malcolm Kadodwala, Thomas J. Penfold,\* Pablo Docampo\* and Graeme Cooke\*

22859

**Mussel-inspired sticky self-healing conductive hydrogels composites for physiological electrical sensing**

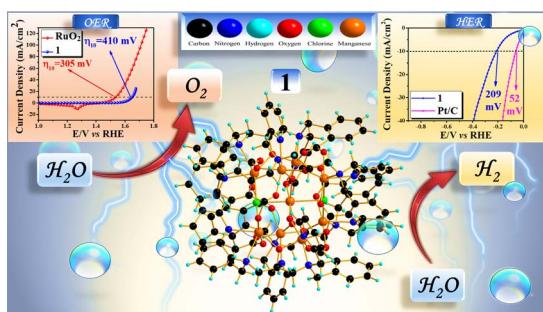
Ming-Lin He, Nai-Feng Chen, Pei Xiang Wang, Hsin-Ya Chen, Wan-Yi Lai, Pei-Tun Liao, Jiasheng Yu, Yang Wei, Ren-Jei Chung, Chun-Hsien Hsu, Shiu-Jau Chen,\* Ting-Ting Chang\* and Wen-Ya Lee\*

22867

**A dual aliovalent ion doped NASICON ceramic filler embedded in the PEO–NaTFSI polymer matrix for high-performance solid-state sodium-ion batteries**

Sushmita Dwivedi, Sudharshan Vasudevan and Palani Balaya\*

22883

**A mixed-valent nonanuclear  $[Mn_5^{II}Mn_4^{III}]$  molecular cluster with cubic topology of highest symmetry as a bifunctional electrocatalyst for efficient water splitting**

Chandan Sarkar, Tapan Sarkar, Aditi De, Nityananda Dutta, Julia Kłak, Allen G. Oliver, Ranjay K. Tiwari, J. N. Behera, Subrata Kundu\* and Manindranath Bera\*

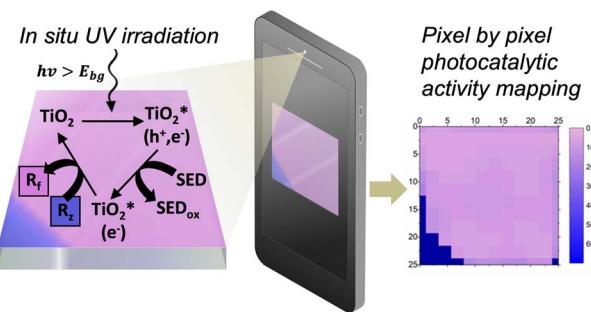


## PAPERS

22905

**Surface mapping of photocatalytic activity in heterogeneous  $\text{TiO}_2$  films**

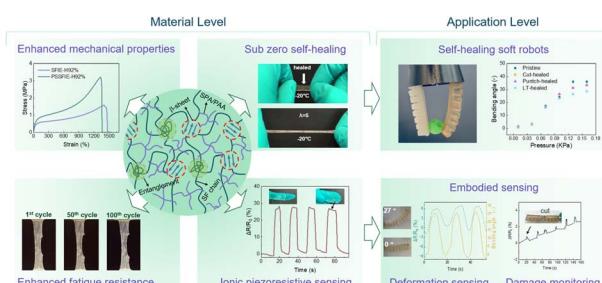
Roxy Lee, Seonghyeok Park, Sanjayan Sathasivam, Andrew Mills, Ivan P. Parkin, Robert G. Palgrave\* and Raul Quesada-Cabrera\*



22914

**Sub-zero self-healable and fatigue-resistant conductive ionoelastomers for sensorized soft pneumatic robots**

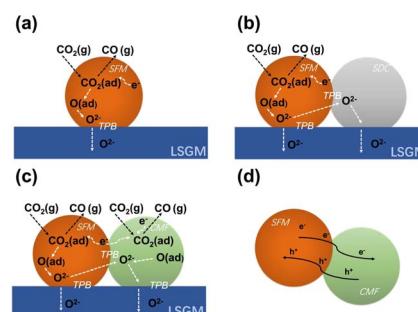
Yang Wang,\* Zhanwei Wang, Fatma Demir, Yinxin Cai, Zijin Liu, Jing Ren, Guy Van Assche, Shengjie Ling,\* Bram Vanderborght\* and Seppe Terryn



22924

**Composite of perovskite and fluorite fuel electrodes for efficient carbon dioxide electrolysis in solid oxide electrolyzer cells**

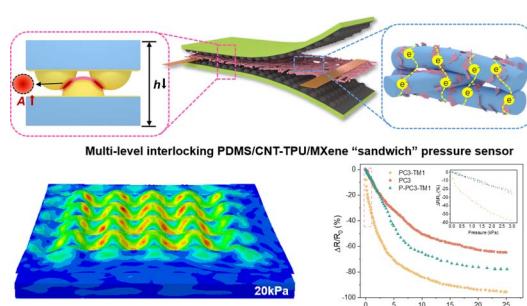
Hao-Yang Li and Pei-Chen Su\*



22931

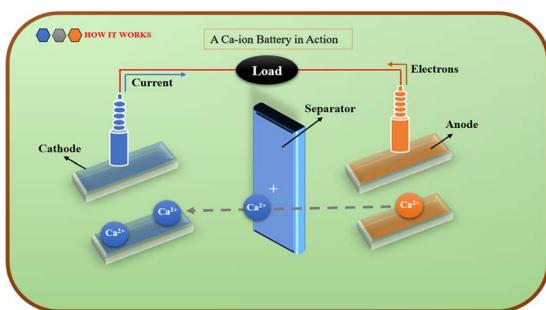
**High-performance flexible piezoresistive pressure sensor based on multi-layer interlocking microstructures**

Meng Wang,\* Gongdong Wang,\* Mingyang Zheng, Lei Liu, Chengyang Xu, Zhendong Liu and Long He



## PAPERS

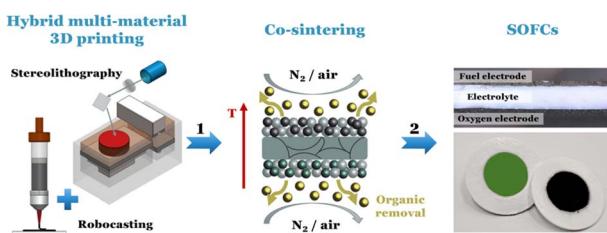
22945



**Exploring the potential of  $\text{MB}_4$  ( $\text{M} = \text{Cr, Mo, and W}$ ) MBenes as high-capacity anode materials for Ca-ion batteries: a DFT approach**

M. Kashif Masood, Jing Wang,\* Juntao Song and Ying Liu

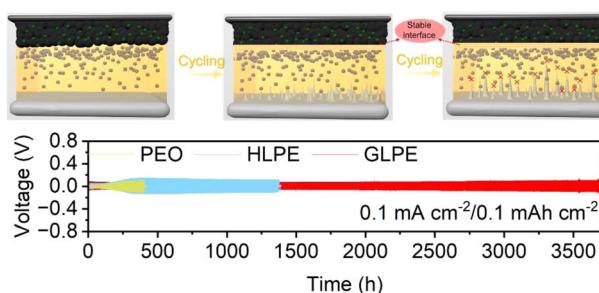
22960



**Single-step fully 3D printed and co-sintered solid oxide fuel cells**

Natalia Kostretsova, Arianna Pesce, Simone Anelli, Marc Nuñez, Alex Morata, Federico Smeacetto, Marc Torrell and Albert Tarancón\*

22971



**Enabling interfacially compatible and high-voltage-tolerant lithium metal batteries with gradient composited solid-state electrolytes**

Honggang He, Jing Shang, Shanshan Li, Chunyan Cao, Haifeng Zhang, Wei Zhang,\* Hui Liu, Yu Feng, Ruiqing Li, Shi Chen, Bin Fei\* and Mingzheng Ge\*

22981



**Promoting effects of potassium on ammonia production from electrochemical nitrate reduction over nano-crystal nickel**

Chunxia Zhang, Zhengying Xue, Yong Jiang, Yunpu Zhai, Changsen Zhang, Juexiu Li and Panpan Liu\*

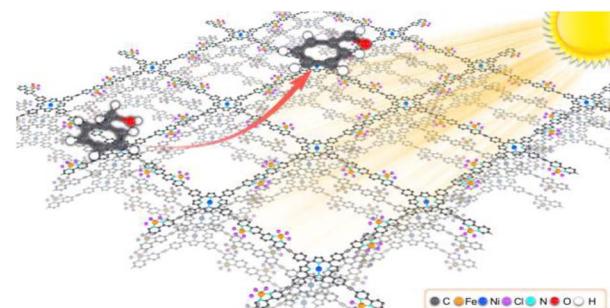


## PAPERS

22990

**Integrating NiFe bimetal sites into a conjugated microporous polymer for boosting photocatalytic selective aromatic alcohol oxidation**

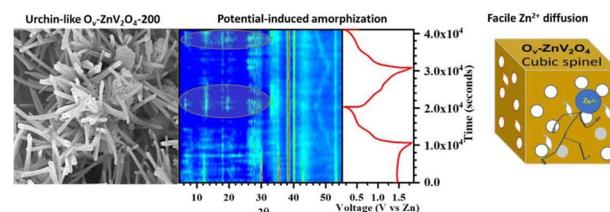
Shien Guo,\* Zhen Yu, Chao Xu, Zhipeng Wang, Wei Tao, Qiaoya Tang, Zhenghui Liu and Yuting Xiao\*



22998

**Carbothermal reduction-induced oxygen vacancies in spinel cathodes for high-performance aqueous zinc-ion batteries**

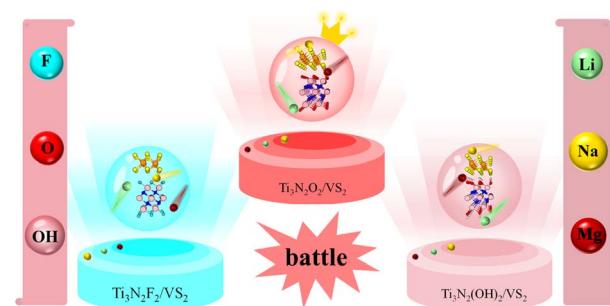
Saheb Bag, Venkata Surya Kumar Choutipalli, Abhirup Bhadra, Kevin L. Shuford, Dipan Kundu and C. Retna Raj\*



23008

**Insights into  $Ti_3N_2T_2/VS_2$  ( $T = F, O, OH$ ) heterostructures as innovative anode materials for lithium/sodium/magnesium-ion batteries**

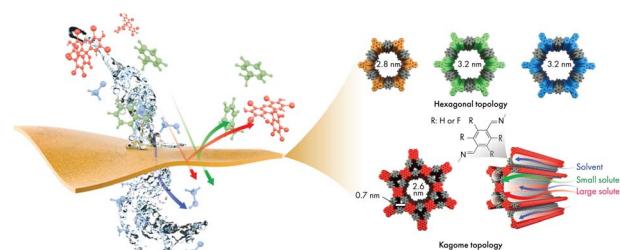
Feng-Ming Ma, Xiao-Meng Zhao, Han-Bai Luo, Chun-Liang Shang, Hui-Min Gao and Xiao-Lin Wang\*



23023

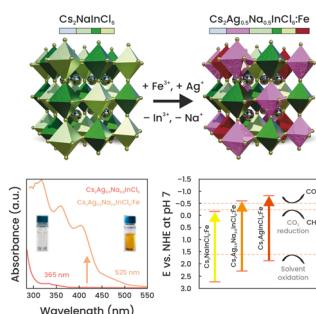
**Fluorinated 2D conjugated porous organic polymer films with modular structural topology for controlled molecular sieving**

Jessica Gayle, Rifaan Hardian, Galio Guo, Xu Wang, Muhammad M. Rahman, Rafael Verduzco, Robert Vajtai, Pulickel Ajayan,\* Soumyabrata Roy\* and Gyorgy Szekely\*



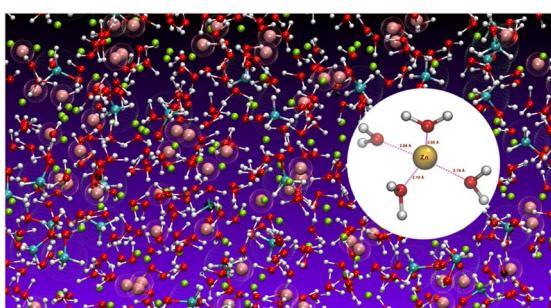
## PAPERS

23035

**Band engineering in iron and silver co-doped double perovskite nanocrystals for selective photocatalytic CO<sub>2</sub> reduction**

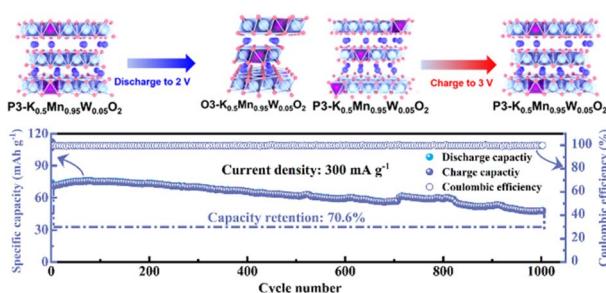
Razi Ahmad,\* Yu Zhang, Jan Navrátil, Piotr Błoński, Lukáš Zdražil, Sergii Kalytchuk, Alberto Naldoni,\* Andrey L. Rogach, Michal Otyepka, Radek Zboril\* and Štěpán Kment\*

23049

**Assessing the impact of an antisolvent-regulated ZnCl<sub>2</sub> water-in-salt electrolyte on solvation structure: a multiscale computational validation for aqueous Zn-ion battery application**

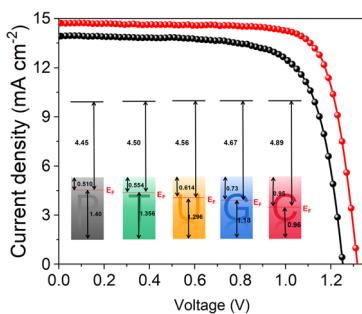
Asis Sethi, Chaithra Rajeev, Anil Kumar U., Parul Sharma, Anurag Prakash Sunda\* and Vishal M. Dhavale\*

23059

**Layer-structured P3-K<sub>0.5</sub>Mn<sub>0.95</sub>W<sub>0.05</sub>O<sub>2</sub> for enhanced potassium-ion batteries by mitigating phase transformation**

Xuan-Wen Gao, Lu-Kang Zhao, Qi Li, Rui Yang, Zhao-meng Liu and Wen-Bin Luo\*

23067

**Effective n-type de-doping of perovskite surface via defect passivation and improved film crystallization for high-efficiency inorganic solar cells**

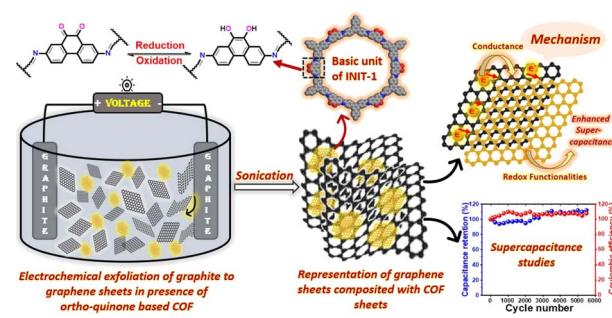
Hui Li, Jialong Duan,\* Naimin Liu, Linzheng Ma,\* Jie Dou, Xinyu Zhang, Qiyao Guo, Yuanyuan Zhao, Benlin He and Qunwei Tang\*

## PAPERS

23076

**Unveiling the charge storage mechanism of a supercapacitor constructed from an *ortho*-quinone-derived covalent organic framework on electrophoretically exfoliated graphene**

Ritika Jaryal, Bharat Bhushan Upreti, Parteek Kumar, Sanjeeb Sutradhar,\* Sadhika Khullar,\* Ramendra Sundar Dey\* and Rakesh Kumar\*



23087

**Electrochemical performance of permanganate as an active material for catholyte in aqueous alkaline flow batteries**

Mingyu Shin, Yejin Lim and Yongchai Kwon\*

