

Journal of Materials Chemistry A

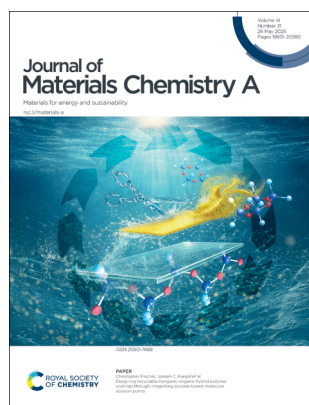
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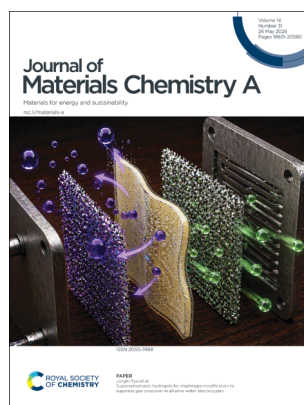
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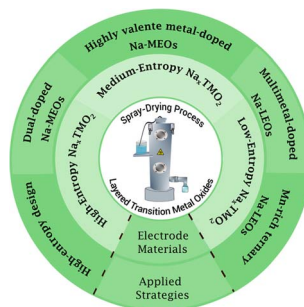
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See Jungki Ryu *et al.*, pp. 20077–20087. Image reproduced by permission of Jungki Ryu from *J. Mater. Chem. A*, 2026, 14, 20077. AI used in image generation.

REVIEWS

19848

From low- to high-entropy layered transition metal oxide cathodes: recent progress on spray-drying technologies in materials design for sodium-ion batteries

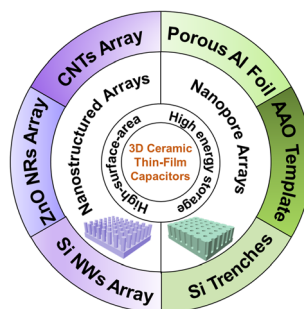
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19893

Advanced 3D ceramic thin-film capacitors: research progress and dielectric energy storage potential

Zhongshuai Liang,* Jiawei Wang, Zhuo Li, Chao Li, Weihua Wang and Xianfeng Du*



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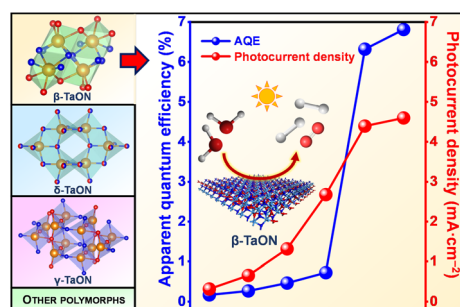
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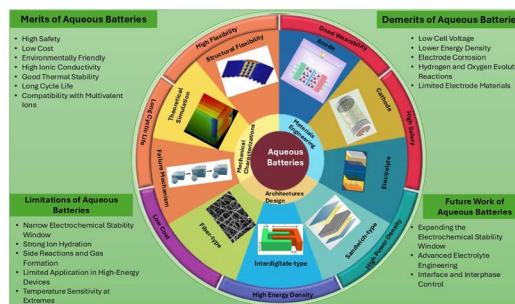
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REVIEWS

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Tantalum oxynitride (TaON): synthesis routes, structural diversity, and solar water splitting activityMirabbos Hojamberdiev,^{*} Kostadin Loskoski and Horst-Günter Rubahn

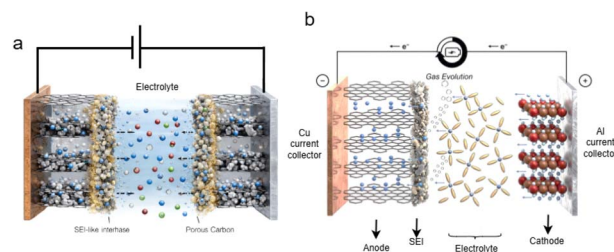
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Interfacial chemistry in aqueous rechargeable batteries: critical insights into solvation control, stability limits, and design challengesGowtham Murugesan, Elango Muniappan, Sujith Kalluri, Ranjith Krishna Pai, Pardha Saradhi Maram and Sambasivam Sangaraju^{*}

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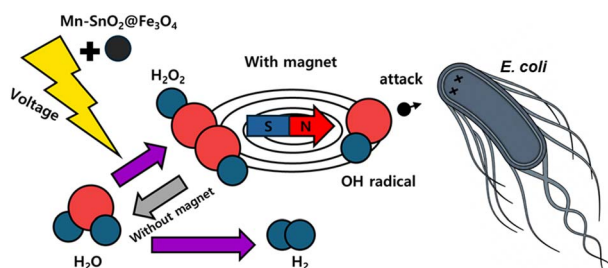
Multi-scale regulation of MnO₂ dissolution/deposition chemistry in rechargeable aqueous zinc ion batteriesXiaohui Pan and Xiaoqing Liu^{*}

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Toward unified interphase engineering: the solid-electrolyte interphase in batteries and supercapacitorsMehedi Hasan,^{*} Ishtiaq Murshed, Khayrul Islam^{*} and A. K. M. Masud

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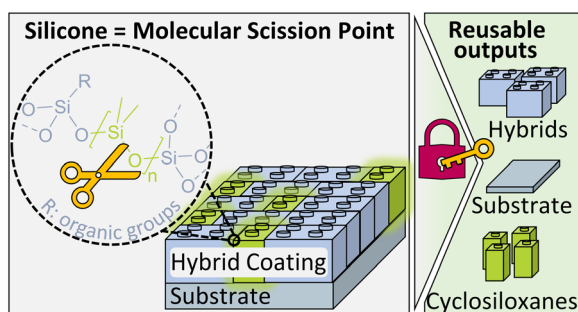


Magnetic-field-assisted cascade electrocatalysis: simultaneous H₂O₂ generation and ·OH radical production for coupled hydrogen evolution and water disinfection

Yeonsu Han, Jungsue Choi, Soyun Oh, Hyun Ko and Hyoyoung Lee*

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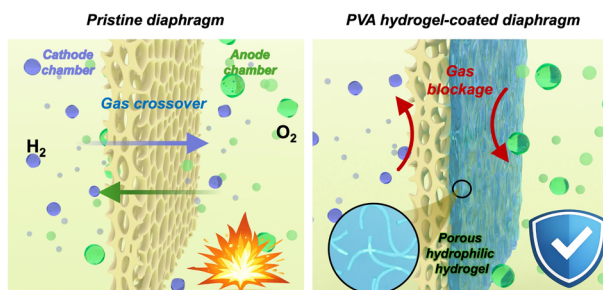
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Designing recyclable inorganic–organic hybrid polymer coatings through integrating silicone-based molecular scission points

Christopher Fischer,* Anja Hart, Ferdinand Somorowsky, Claudia Stauch, Diana Lau, Gerhard Sextl and Joseph C. Furgal*

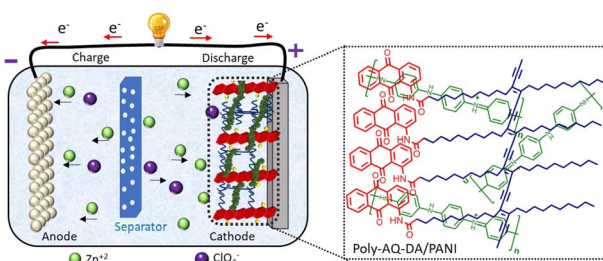
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Superaerophobic hydrogels for diaphragm modification to suppress gas crossover in alkaline water electrolyzers

Soi Lee, Jinseo Lee, Seunghyun Lee, Hyeongoo Kim, Yunseok Kang, Dong Woog Lee and Jungki Ryu*

20088



High-performance polydiacetylene organic cathode for zinc-ion batteries

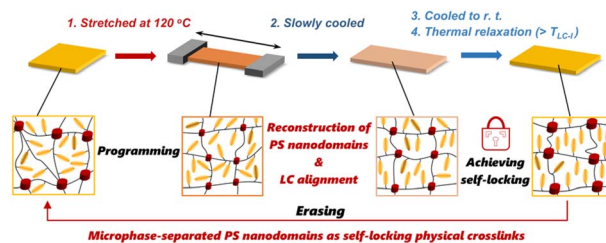
Anita Samage, Elinor Slavsky and Raz Jelinek*



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Crosslinking-free preparation of thermoplastic triblock liquid crystal elastomer actuators

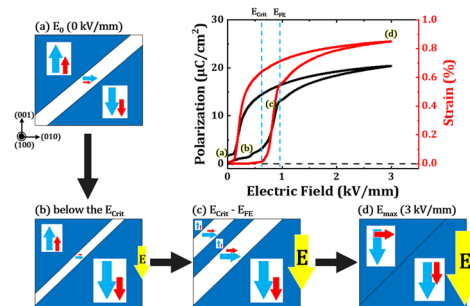
Ting Liu, Jiaxin Yang, Jie Jiang, Lu Yin, Hongwei Ma, Yue Zhao,* Yang Li and Li Han*



20113

Giant electric-field-induced strain associated with defect dipoles in Fe-doped barium titanate single crystals activated by an electric field

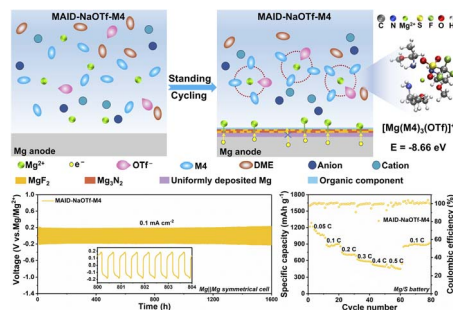
Chang Min Baek, Xiaoming Shi, Rokhyeon Kim, Ho-Yong Lee, Yunseok Kim, Jung Min Park, Houbing Huang,* Dae-Yong Jeong* and Jungho Ryu*



20122

Dual-functional CF_3SO_3^- /amine additives synergistically construct an $\text{MgF}_2/\text{Mg}_3\text{N}_2$ -rich interphase toward high-performance magnesium-sulfur batteries

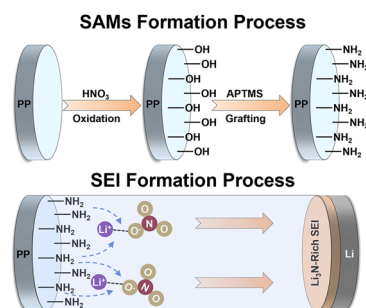
Jiaming Shi, Miao Cheng,* Qianqian Liu, Ruirui Wang, Wujun Ma, Jing Hu, Tao Wei, Bo Liu,* Muzi Chen and Wanfei Li*



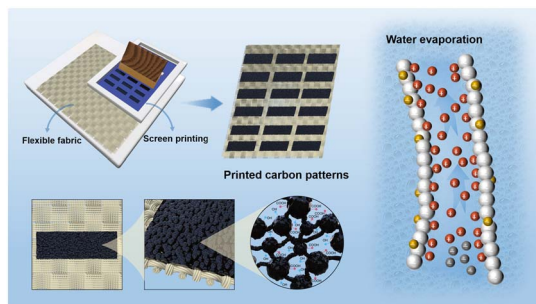
20136

Grafting self-assembled monolayers on polymeric substrates toward Li_3N -stabilized solid electrolyte interphases

Juxin Yue, Qibin Xie, Ze Wang, Ke Yue, Xingyao Zeng, Cong Ma, Hengyu Feng, Peng Shi,* Shihui Zou, Huadong Yuan, Jianwei Nai, Yao Wang, Jianmin Luo, Shaofei Wu, Xinyong Tao* and Yujing Liu*



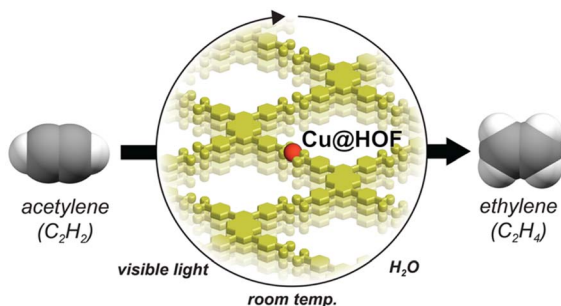
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Harvesting energy from water evaporation: a green power device printed from waste bamboo

Chenhong Xu, Yuanjie Wei, Qun Liu, Quancai Li, Xin Guo, Qian Wang, Ziyi Gong, Hehe Ren, Jian Zou, Jing Liang and Wei Wu*

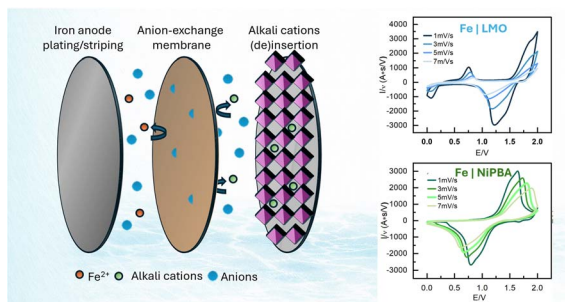
20154



Photocatalytic semi-hydrogenation of acetylene to ethylene in water powered by a copper-functionalized hydrogen-bonded organic framework

Brando Adranno, Anna Fortunato, Sharon Silloni, Marianna Barbieri, Stefano Agnoli, Luka Đorđević* and Francesca Arcudi*

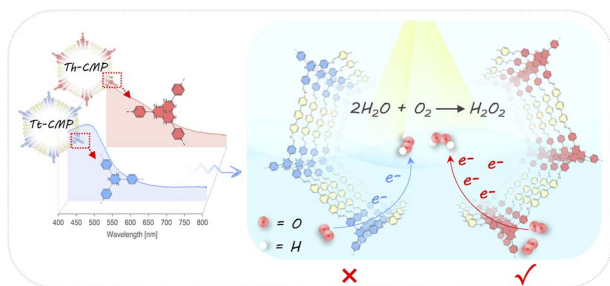
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Broadening the horizons of Fe-metal in static batteries with anion exchange membranes

Lakshya Kumar, Hadar Fattal, Stav Rahmany, Hannah Sapir, Daniel Mandler,* Daniel Sharon* and Netanel Shpigel*

20173



Heptazine-based conjugated microporous polymers for enhanced light absorption and charge separation in photocatalytic hydrogen peroxide production

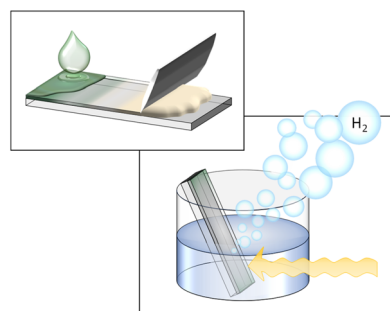
Meng-Ran Zhang, Su-Xian Yuan, You-Xiang Feng, Min Zhang* and Tong-Bu Lu



20181

Generating green hydrogen via nickel sulfide modified titania thin film photocatalysts

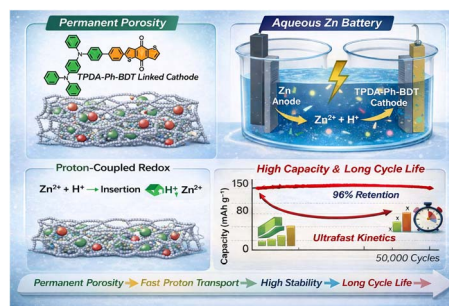
Melissa Sophie Egger, Stephen Nagaraju Myakala, Marco Sigl, Georg Haberfehlner, Manfred Nachtnebel, Anto Vrbat, Thomas Griesser, Alaaddin Cem Ok, Alexey Cherevan, Dominik Eder, Thomas Rath* and Gregor Trimmel*



20192

A tetraphenyl-*p*-phenylenediamine- and benzodithiophene-4,8-dione-based conjugated microporous polymer as a robust cathode for durable aqueous Zn batteries

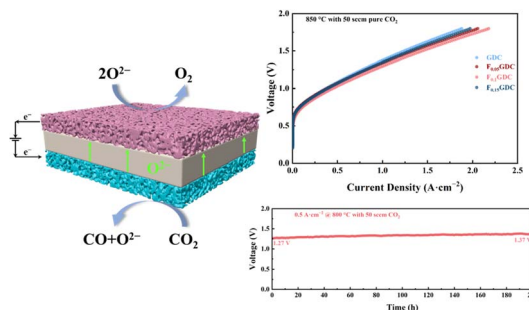
Jiahe Zhan, Sung-En Lin, Ijaz Ali, Bo-Chun Chen, Trakarn Yimtrakarn, Pilgun Oh, Rong Ho Lee, Watchareeya Kaveevivitchai* and Ahmed F. M. EL-Mahdy*



20209

Boosting CO₂ electrolysis via a metal-free F/Gd co-doped CeO₂ cathode for solid oxide electrolysis cells

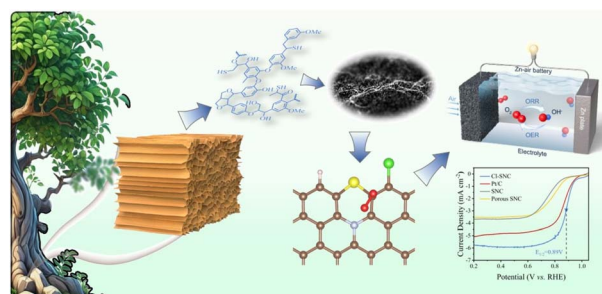
Shiwei Yang, Caichen Yang, Shuidan Gu, Yunfeng Tian,* Kaisheng Xia, Jian Pu and Bo Chi*



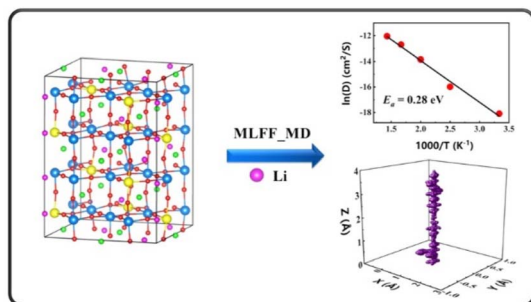
20218

Synergistic promotion of oxygen reduction electrocatalysis by chlorine incorporation in biomass-derived S/N co-doped carbon

Ming Li, Haolin Chang, Chenxin Fan, Chen Wang, Liyuan Gong* and Shuo Dou*



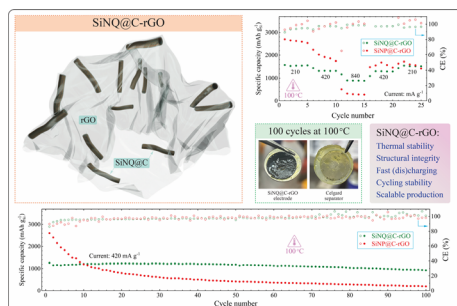
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Unraveling anisotropic Li-ion transport in $\text{Li}_{3/8}\text{Sr}_{7/16}\text{Ta}_{3/4}\text{Hf}_{1/4}\text{O}_3$ via machine learning molecular dynamics and first-principles modeling

Qiang Ke, Xueling Lei* and Kevin Huang*

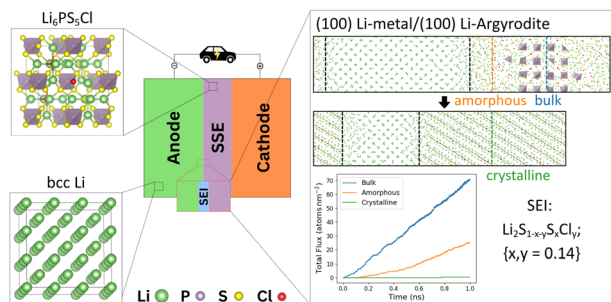
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Interface-engineered silicon nano-quill electrodes for durable extreme temperature lithium-ion batteries

Janak Basel, Morteza Sabet,* Peshal Karki, Mihir Parekh, Talia M. Sebastian, Yi Ding and Apparao M. Rao*

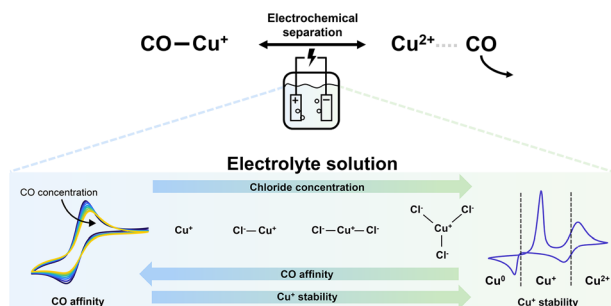
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Atomistic insights into the chemical stability and ionic transport at Li-metal/Li-argyrodite interfaces

Chantal M. I. Baer,* Roman Shantsila, Łukasz Figiel and Bora Karasulu*

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Electrolyte effects on the stability and CO binding of copper chloride complexes for electrochemical separation of CO/N₂

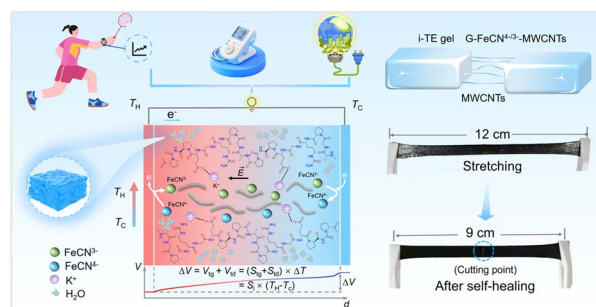
Christel I. Koopman, Jelco Albertsma, Zhengyao Zhu, Monique A. van der Veen and David A. Vermaas*



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Lotus-root-fiber inspired stretchable and self-healing ionic thermoelectric gels with carbon nanotubes for enhanced high-temperature performance

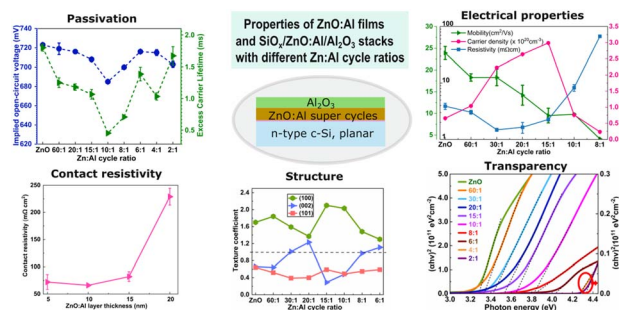
Jiawei Chen, Guimei Li, Wenjun He, Chunxia Xie, Lan Yang, Luoting Wu, Manqi Chen, Kai Zhou, Cheng-Gong Han,* Wei Wang* and Li Niu*



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Influence of Al doping ratio on properties of ZnO:Al passivating contacts for crystalline silicon solar cells

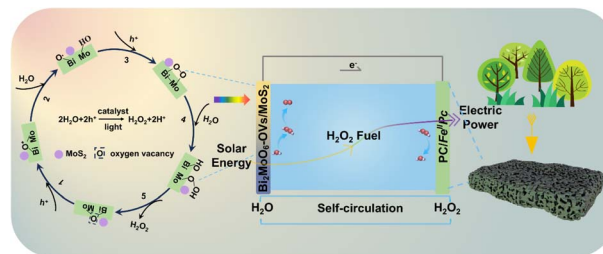
Piyumi Kodithuwakku,* Christian Samundsett, Daniel H. Macdonald and Lachlan E. Black*



20300

Synergistic defect engineering and cocatalyst loading in a Bi₂MoO₆-OVs/MoS₂ photoanode for efficient power generation in H₂O₂ photoelectrochemical cells

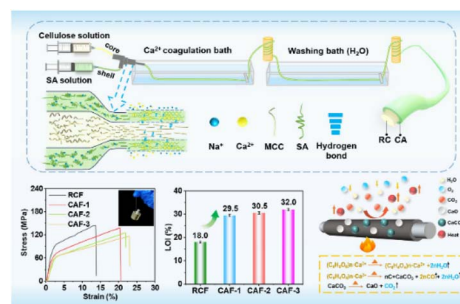
Yutong Liu, Shuohui Li, Bo Yu, Yingying Guan, Xiaosong Han, Yihui Tian, Yang Zhao* and Huan Wang*



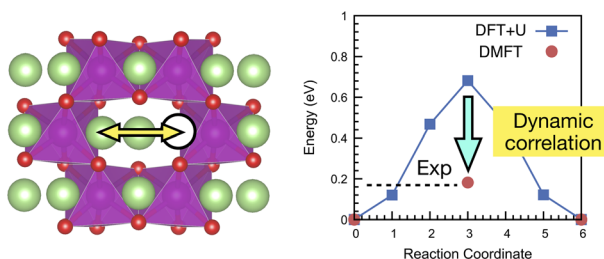
20313

Regenerated cellulose fibers from coaxial wet spinning of alginate with excellent flame retardancy

Yueying Zhang, Jiuyong Yao, Kai Li, Shengkang Wang, Yide Liu* and Yanzhi Xia*



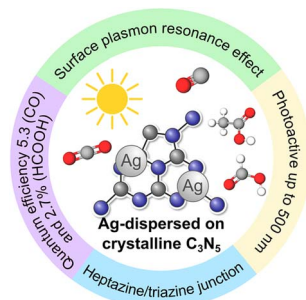
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Revealing short- and long-range Li-ion diffusion in Li_2MnO_3 from finite-temperature dynamical mean field theory

Alex Taekyung Lee, Kristin A. Persson* and Anh T. Ngo*

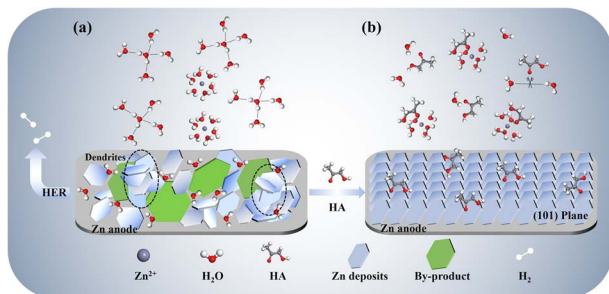
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Sub-10 nm metal-dispersed crystalline C_3N_5 for photocatalytic CO_2 reduction to produce formic acid and acetic acid

Sue-Faye Ng, Bifang Li, Joel Jie Foo, Xianhai Zeng, Sibowang* and Wee-Jun Ong*

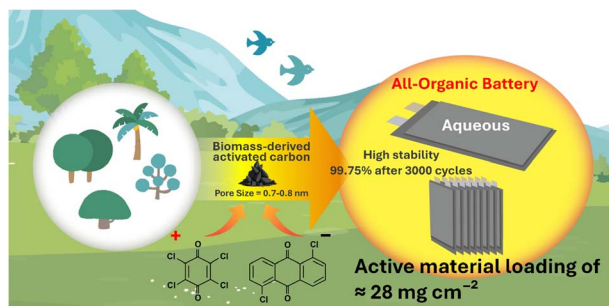
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Triple-function of hydroxyacetone in suppressing water activity toward long-lived aqueous zinc-ion batteries

Jiaxiang Pei, Dingshuai Hou, Qiang Li,* Ruizhe Zhang, Zhiyong Liao, Yongbo Fan* and Huiqing Fan*

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Micropore engineering of biomass-derived carbon for durable, high-loading aqueous all-organic pouch batteries

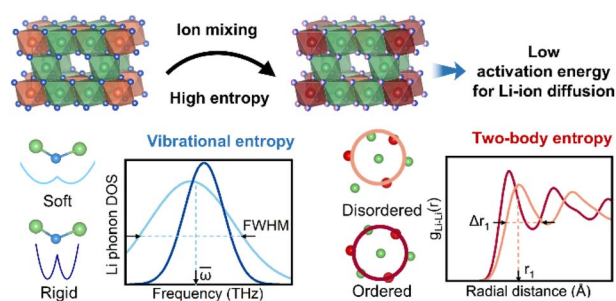
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20370

Decoding mixed-ion effects in halide electrolytes: entropy as a unified measure of a soft and disordered lattice

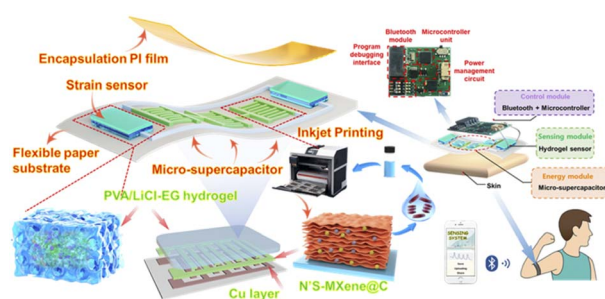
Renyu Cai, Yu Yang and Hong Zhu*



20380

Printed N'S-MXene@C/Cu micro-supercapacitors with cryo-tolerant hydrogel for wireless self-powered motion monitoring

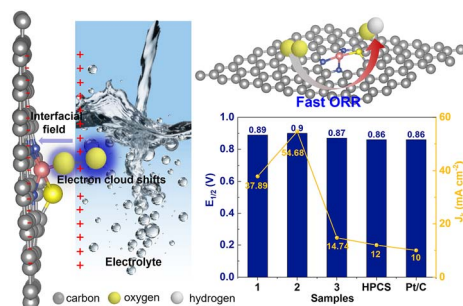
Guo-Tao Xiang, Rui-Dong Shi, Na Chen, Jia-Lei Xu, Anna Lipovka, Raul D. Rodriguez and Jin-Ju Chen*



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Symmetry-broken FeN₃-O on a negatively charged carbon host: dual modulation of electronic structure and interfacial field for robust oxygen reduction

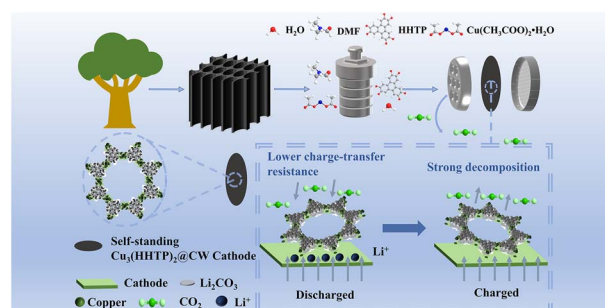
Yan Liu,* Zhaoyu Wang, Shixiu Cao, Fuzhu Liu, Qiang Tan, Yuanzhen Chen and Wei Wang



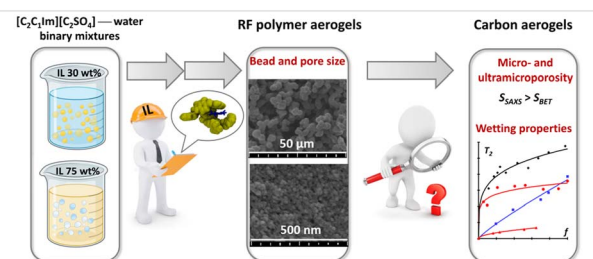
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Conductive Cu₃(HHTP)₂ nanorods anchored on biomass-derived carbon wood as a binder-free cathode for high-performance Li-CO₂ batteries

Yuxin Hong, Wenwen Zhang, Chun Li, Yan Jiang, Jiahui Li, Chenhao Wu, Shun Guo* and Shanshan Yao*



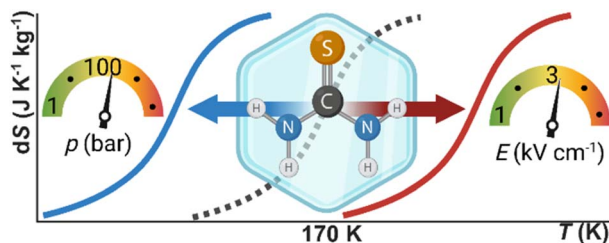
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Tuning aerogel morphology using water–ionic liquid binary mixtures: a mechanistic journey from synthesis to carbon properties

Dávid Nyul, Krisztina László, Oldamur Hollóczki and Mónika Kéri*

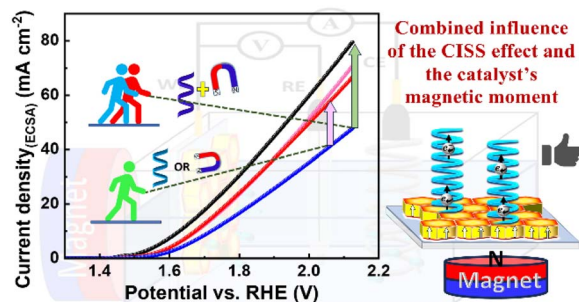
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Giant electrocaloric response in thiourea under a low electric field in the cryogenic region

Juan Manuel Bermúdez-García,* Susana Yáñez-Vilar, Angel Ferradanes-Martínez, Antonio Luis Llamas-Saiz, Manuel Sánchez-Andújar, Socorro Castro-García, María Antonia Señaris-Rodríguez and Jorge Mira*

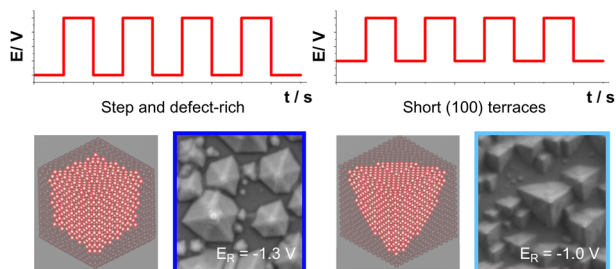
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External chirality-driven interfacial spin filtering in magnetically aligned NiFe-LDH facilitates the enhancement of the oxygen evolution reaction

Utkarsh Utkarsh, Dibyendu Barik, Anujit Balo, Sachidananda Sahu and Koyel Banerjee Ghosh*

20450



Pulse-mediated refaceting of copper. Influence on 5-hydroxymethylfurfural electrocatalysis

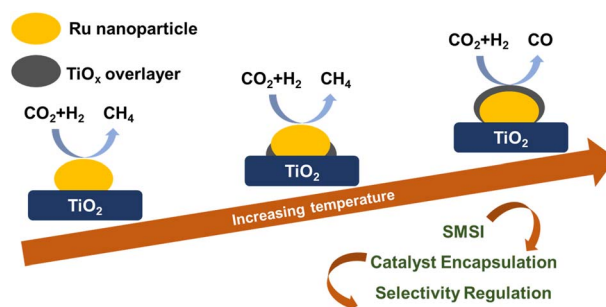
Vicente Pascual-Llorens, Lorena Chico-Mesa, Michael Musi, Rosa M. Arán-Ais* and Paula Sebastián-Pascual*



20464

Theoretical insights into encapsulation-induced CO₂ reduction selectivity reversal on Ru supported on TiO_x catalysts

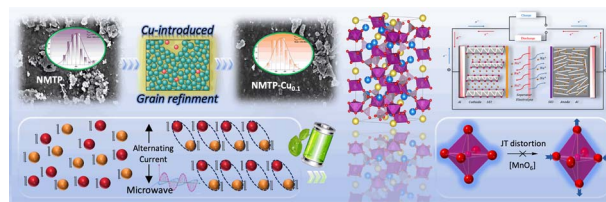
Yi Li, Rong Wei, Hongwei Tan,* Chang Yuan,*
Xichen Li and Guangju Chen



20479

Engineering high-energy, high-rate NASICON cathodes via Cu doping and microwave-induced grain refinement for sodium-ion batteries

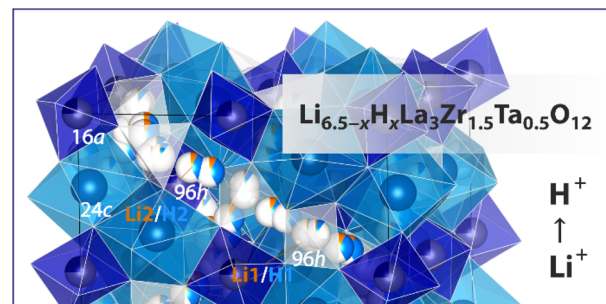
Zhao Xie, Jun Wu, Yali Sun, Qiumei Wan, Wenwen Cui,
Qingqing Ge, Dai Lu, Chunyang Li* and Hong Luo*



20491

From lithium to proton mobility in garnet electrolytes: an NMR and conductivity study of H_{5.2}Li_{1.3}La₃Zr_{1.5}Ta_{0.5}O₁₂

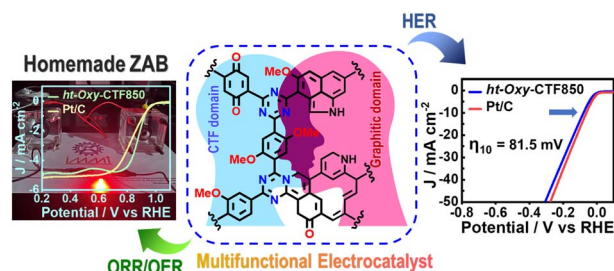
Florian Stainer, Junji Akimoto, Yoshitaka Matsushita,
Kazutaka Mitsuishi, Kazunori Takada and
H. Martin R. Wilkening*



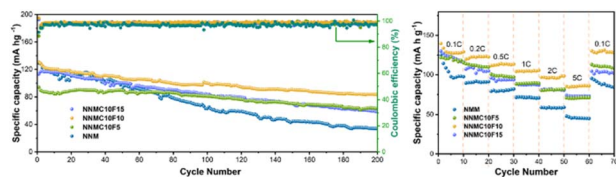
20504

High-temperature variant of oxygen-rich covalent triazine frameworks as multifunctional electrocatalysts

Ashish Kumar Maharana, Sourav Kumar Sarkar,
Rahul Sarkar, Bibek Dash, Mrutyunjaya Majhi and
Sanjib Das*



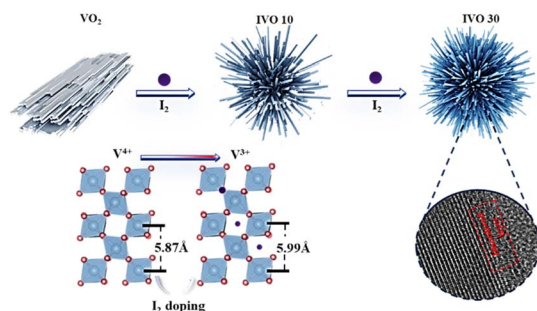
20519



Synergistic Cu/F co-doped P2-Na_{0.67}Ni_{0.33}Mn_{0.67}O₂ microsphere cathodes for enhanced sodium storage *via* dual doping and structural design

Mengfei Wu, Huaao Li, Ao Liu, Tianci Sun and Yifan Dong*

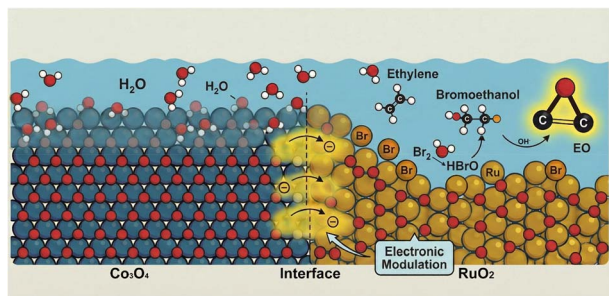
20530



Ordered VO₂ nanoflowers with amorphous hybrid interfaces induced by iodide ion doping for superior zinc-ion storage

Chaoxuan Wang, Zeqi Liu, Hao Wang, Ying Sha, Jianshu Wang, Junhan Jia, Yi Du, Wuzhao Li and Lei Qian*

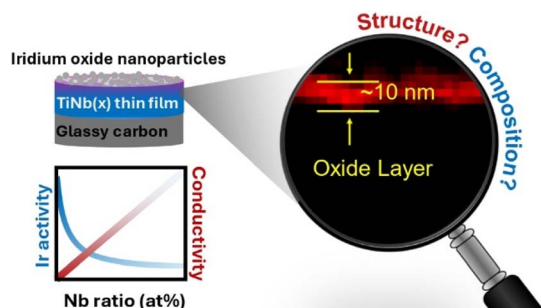
20540



Hierarchical RuO₂/Co₃O₄ heterostructures enable efficient bromine-mediated electrochemical ethylene epoxidation *via* electronic and structural synergy

Lvming Zhu, Zeshuo Meng, Guang Yang, Chunyu Zhang, Xunhua Zhao, Yu Kang* and Yi Cui*

20548



Investigating Ti–Nb alloys as supports for iridium oxide water oxidation electrocatalysts

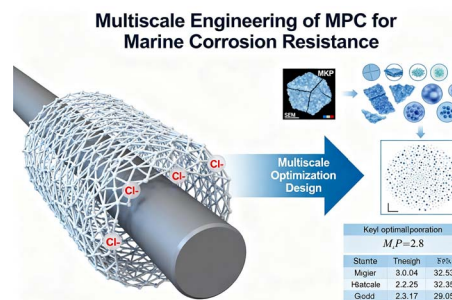
Guangmeimei Yang, Wei Huang, Yifeng Wang, Caiwu Liang, Yuxiang Zhou, Santosh Kumar, Pilar Ferrer Escorihuela, Parnia Navabpour, Giuseppe Sanzone, Trevor Ferris, Mark Turner, Sarah J. Haigh, Georg Held, Caterina Ducati, Andreas Kafizas* and Reshma R. Rao*



20558

Sustainable magnesium phosphate cement from industrial by-products: long-term chloride resistance and non-alkaline corrosion protection mechanism

Xiaodong Wen, Zewei Deng, Guangji Yin* and Xiaojian Gao



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Boron-modulated amorphous cobalt layer on Cu foam enabling efficient and stable hydrolysis of ammonia borane

Kang Wang, Shikai Chang, Cheng Lu, Yufeng Chen, Yong Feng, Youyong Li, Kun Feng* and Jun Zhong*

