

Journal of Materials Chemistry A

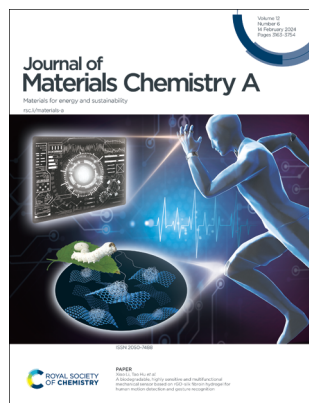
Materials for energy and sustainability

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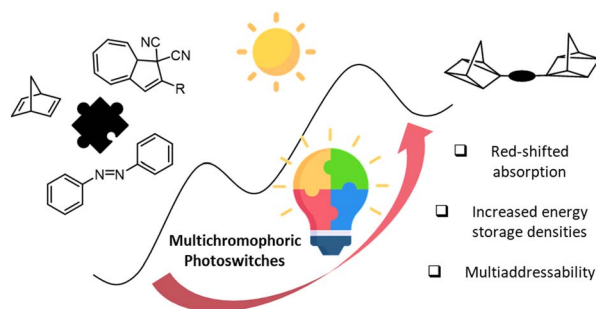
See Xiao Li, Tao Hu *et al.*, pp. 3283–3293. Image reproduced by permission of Xiao Li from *J. Mater. Chem. A*, 2024, **12**, 3283.

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Multichromophoric photoswitches for solar energy storage: from azobenzene to norbornadiene, and MOST things in between

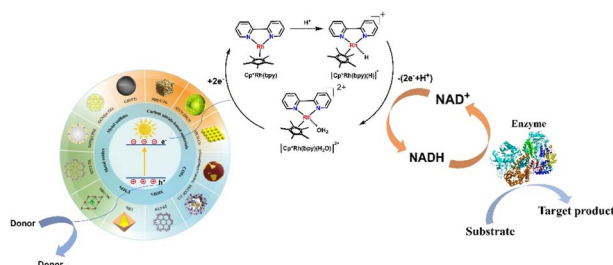
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Recent advances in porous materials for photocatalytic NADH regeneration

Gaozhen Zhao, Chonghui Yang, Wu Meng* and Xiaowen Huang*



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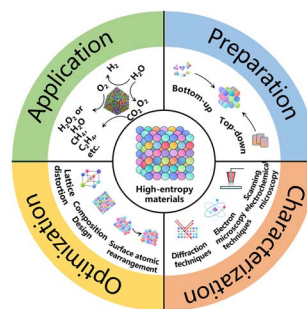
**Fundamental questions
Elemental answers**

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Progresses on high-entropy nano-catalysts for electrochemical energy conversion reactions

Lihua Zhang, Tong Wu, Yinbo Zhan, Yilin Dong, Fei Wei, Dongliang Zhang, Bowei Zhou, Zheng Tan, Changying Zhao and Xia Long*

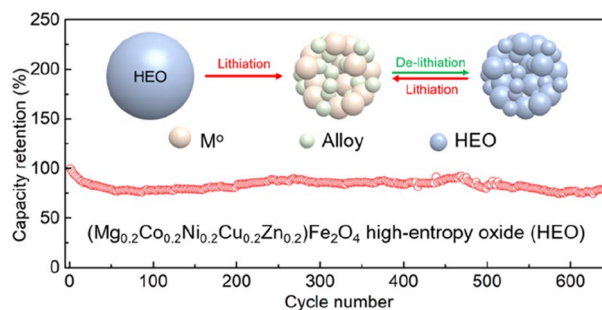


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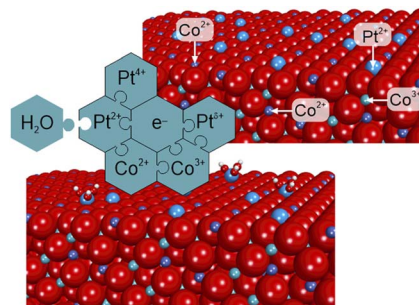
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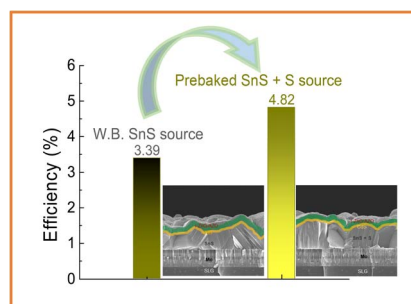
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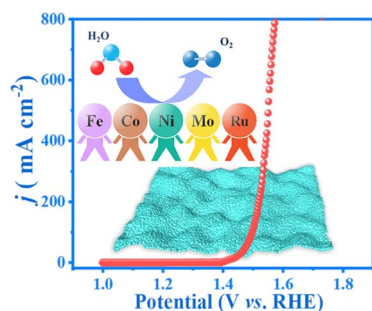
Prebaking of an SnS source with sulfur for achieving higher photovoltaic performance in VTD-SnS thin films for solar cells

Rahul Kumar Yadav, Pravin S. Pawar, Yong Tae Kim, Indu Sharma and Jaeyeong Heo*



COMMUNICATIONS

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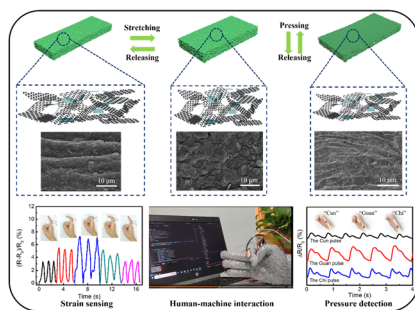


Rapid, self-sacrificing template synthesis of two dimensional high-entropy oxides toward high-performance oxygen evolution

Xiaofeng Tian, Hongdong Li,* Rui Chang, Yu Yang, Zhenhui Wang, Tian Dong, Jianping Lai, Shouhua Feng and Lei Wang*

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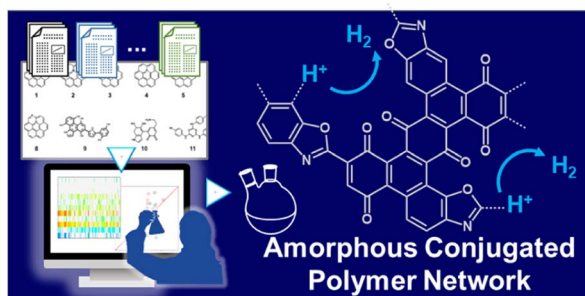
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A biodegradable, highly sensitive and multifunctional mechanical sensor based on rGO-silk fibroin hydrogel for human motion detection and gesture recognition

Ke Chen, Baoyang Liu, Ning Hu, Qiaolin Fan, Fawang Zhan, Zhou Zhang, Zhonghua Ni, Xiao Li* and Tao Hu*

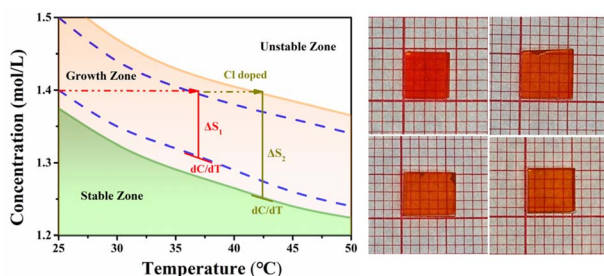
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Quanchao Zhang, Xin Liu,* Xin Zhang, Zijian Wang, Baoqiang Zhang, Yingying Hao, Alain Dubois, Wanqi Jie and Yadong Xu*

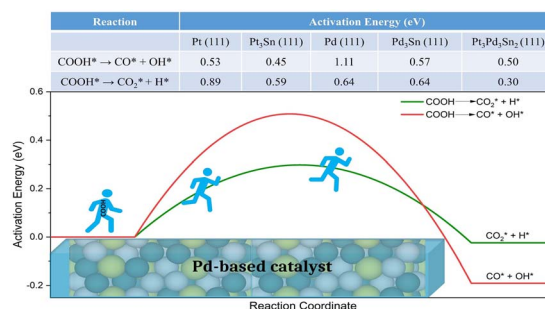


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The origins of formic acid electrooxidation on selected surfaces of Pt, Pd, and their alloys with Sn

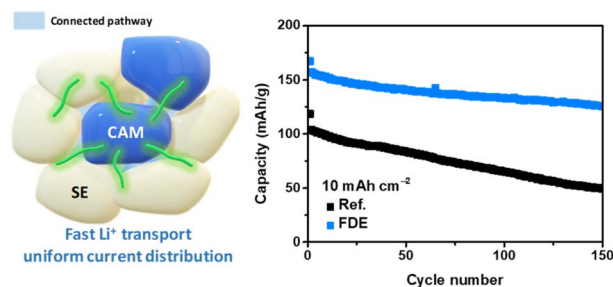
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Boosting the electrochemical performance with functionalized dry electrodes for practical all-solid-state batteries

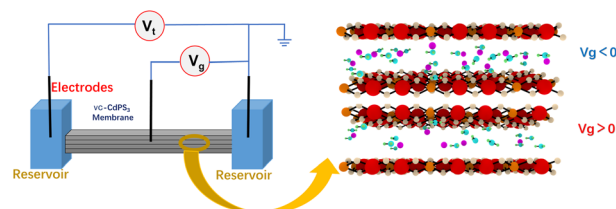
Dongsoo Lee and Arumugam Manthiram*



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Nanofluidic ion regulation membranes based on two-dimensional vacancy-containing CdPS₃ membrane

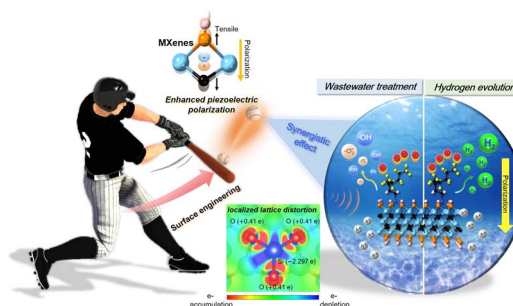
Meng Zhang, Chenhui Huang, Zhaofeng Zhai, Xiaomin Kang, Jiang Ju* and Xitang Qian*



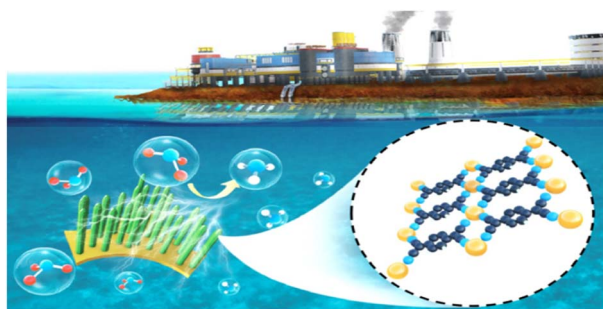
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An ultraefficient surface functionalized Ti₃C₂T_x MXene piezocatalyst: synchronous hydrogen evolution and wastewater treatment

Sz-Nian Lai, Winston Yenyu Chen, Chao-Chun Yen, Yin-Song Liao, Po-Han Chen, Lia Stanciu and Jyh Ming Wu*



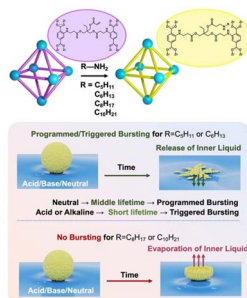
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Fe(TCNQ)₂ nanorod arrays: an efficient electrocatalyst for electrochemical ammonia synthesis via the nitrate reduction reaction

Nilmadhab Mukherjee, Ashadul Adalder, Narad Barman, Ranjit Thapa, Rajashri Urkude, Biplab Ghosh and Uttam Kumar Ghorai*

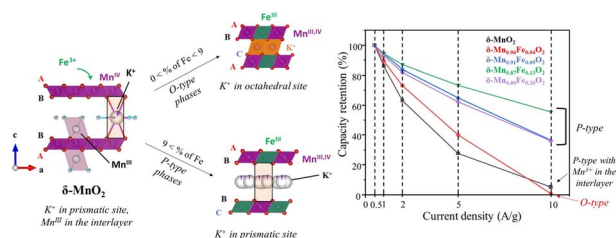
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pH-triggered adjustable bursting of liquid marbles in water pools

Saurav Kumar, Nishanta Barman, Angana Borbora, Priyam Mondal, Mizuki Tenjimbayashi* and Uttam Manna*

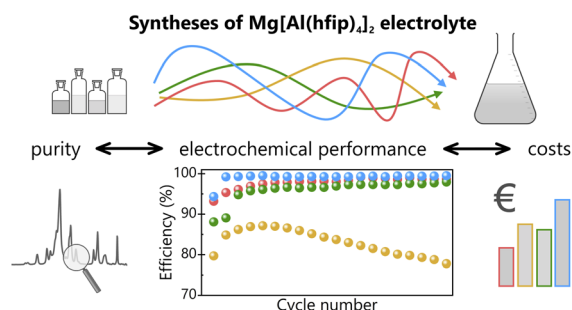
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Incorporation of Fe³⁺ into MnO₂ birnessite for enhanced energy storage: impact on the structure and the charge storage mechanisms

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Evaluating the synthesis of Mg[Al(hfip)₄]₂ electrolyte for Mg rechargeable batteries: purity, electrochemical performance and costs

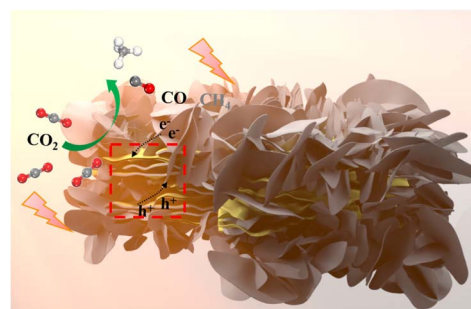
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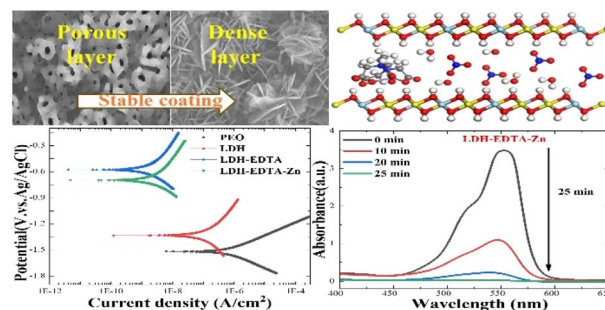
Ruiming Fang, Zhongqing Yang,* Jiajun Sun, Chenxuan Zhu, Yanglin Chen, Ziqi Wang and Can Xue*



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Modulating chelation with pH sensitivity for controlled structural defects and enhanced electrochemical and photocatalytic activities of LDH films

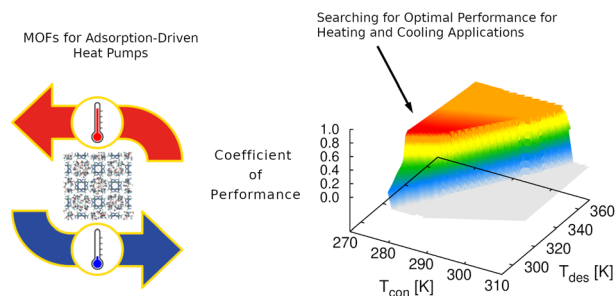
Muhammad Ali Khan, Ananda Repycha Safira and Mosab Kaseem*



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Alcohol-based adsorption heat pumps using hydrophobic metal–organic frameworks

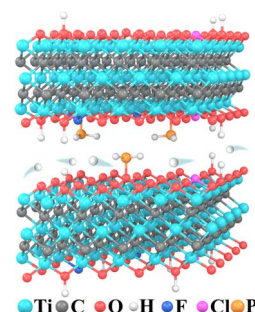
R. M. Madero-Castro, A. Luna-Triguero, C. González-Galán, José Manuel Vicent-Luna* and Sofía Calero*



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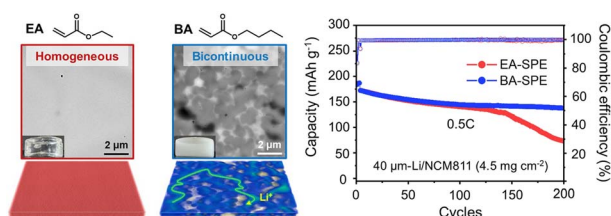
Selective grafting of phosphorus onto Ti₃C₂T_x MXene enables a two-proton process and enhanced charge storage

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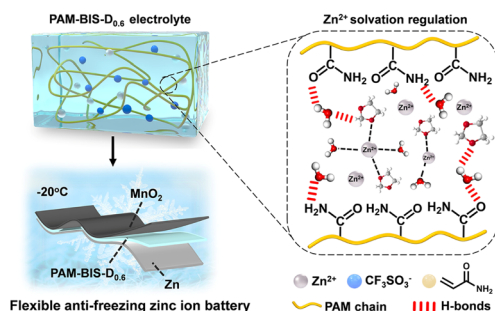
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Tuning phase structures of *in situ* polymerized elastomeric electrolytes via monomer structure engineering for achieving high stability in solid-state lithium metal batteries

Seung Ho Kwon, Michael J. Lee, Junghun Han, Ju Hong Min, Seongmin Kim, Se Young Kim, Jinseok Park, Eunji Lee,* Seung Woo Lee* and Bumjoon J. Kim*

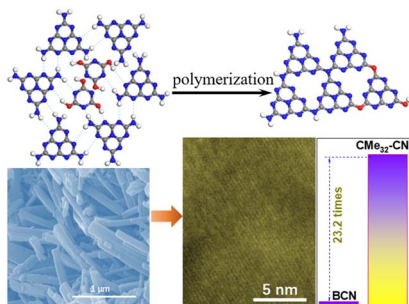
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Organohydrogel electrolytes with solvated structure regulation for highly reversible low-temperature zinc metal batteries

Feng Zhang, Mingchen Yang, Pengda Fang, Jiangtao Yu, Xinyu Ma, Yin Hu* and Feng Yan*

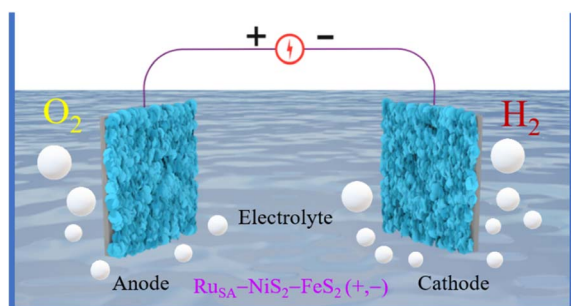
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Crystalline oxygen-bridged carbon nitride from self-assembled supramolecular intermediate for efficient photocatalytic H₂ evolution

Guangzheng Huang, Bowen Xiao, Liyan Bao, Dengke Wang, Yannan Luo, Shicheng Yan* and Honglin Gao*

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Ruthenium single atoms implanted on NiS₂-FeS₂ nanosheet heterostructures for efficacious water electrolysis

Ram Babu Ghising, Uday Narayan Pan, Mani Ram Kandel, Purna Prasad Dhakal, Saleem Sidra, Do Hwan Kim, Nam Hoon Kim* and Joong Hee Lee*

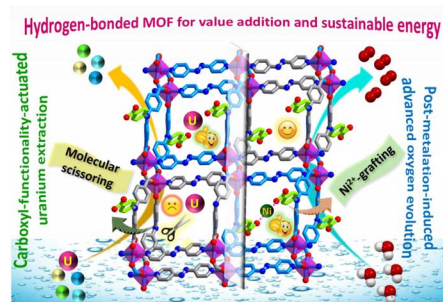


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Pendent carboxylic acid-fuelled high-performance uranium extraction in a hydrogen-bonded framework and prolifically improved water oxidation via post-metalation-actuated composite fabrication

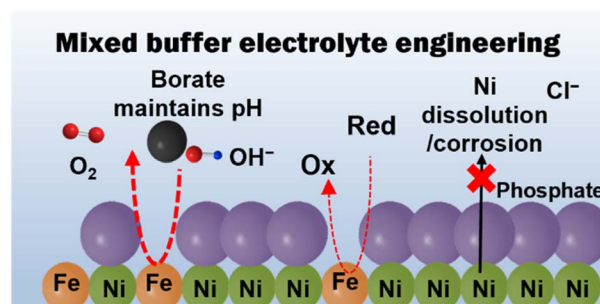
Nilanjan Seal,^{*} Arun Karmakar, Subrata Kundu^{*} and Subhadip Neogi^{*}



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Dynamic stabilization of nickel-based oxygen evolution electrocatalysts in the presence of chloride ions using a phosphate additive

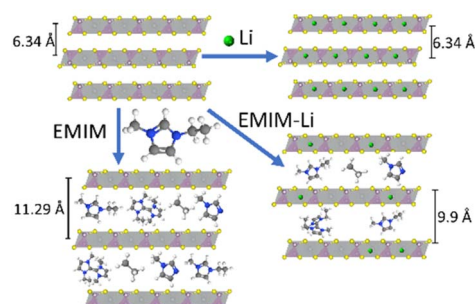
Hiroki Komiya, Keisuke Obata, Tetsuo Honma and Kazuhiro Takanabe^{*}



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Charge compensation in a layered van der Waals NiPS₃ host through various cationic intercalations

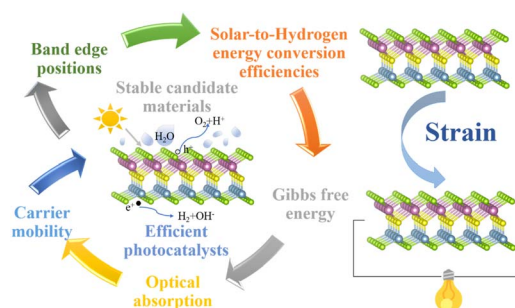
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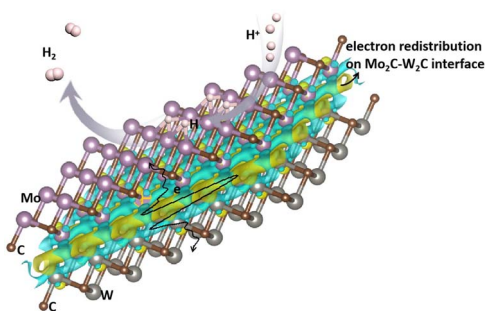
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Two-dimensional Janus chalcogenides: candidates for efficient photocatalysts and piezoelectric materials

Chenchen Qi, Cuixia Yan,^{*} Qiuyang Li, Ting Yang, Shi Qiu and Jinming Cai^{*}



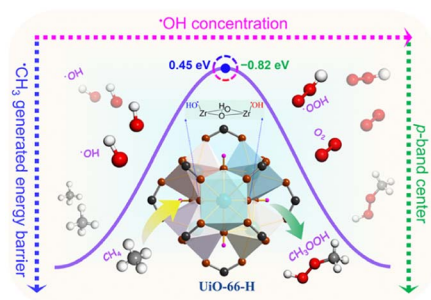
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Boosting electrocatalytic hydrogen evolution over a Mo₂C–W₂C heterostructure by interface-induced electron modulation

Lijuan Jiang, Ruijing Wang, Huimin Zhou, Guang-Feng Wei* and Xuefeng Wang*

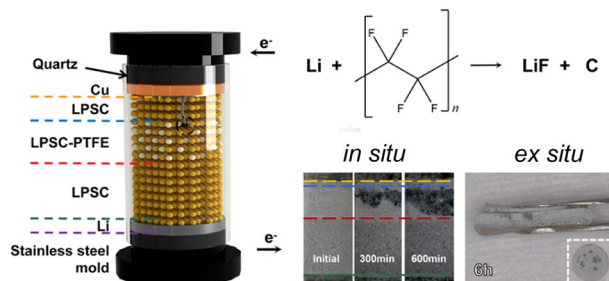
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Deciphering structural evolution of adsorbed $\cdot\text{OH}$ species on Zr-oxo nodes of UiO-66 to modulate methane hydroxylation

Ling-Chan Tian, Geqian Fang, Yun Zhou, Wenjun Yu, Lin Li, Jin-Nian Hu, Haiyan Wang, Jin-Xia Liang,* Chun Zhu,* Xiaodong Wang and Jian Lin*

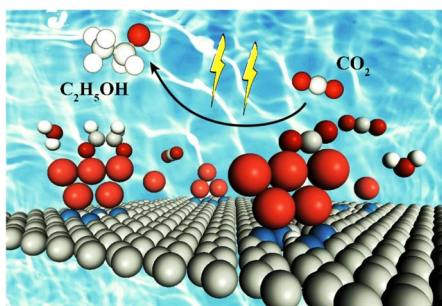
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Dendrite growth and inhibition in all-solid-state lithium metal batteries: *in situ* optical observation

Haowen Liu, Weining Jiang, Wenjie Chen, Qiyuan Lin, Shuaiyang Ren, Yipeng Su, Ruoyu Tong and Yuegang Zhang*

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The activity origin of C–N–Cu electrocatalysts for ethanol formation in the CO₂ reduction reaction under working conditions

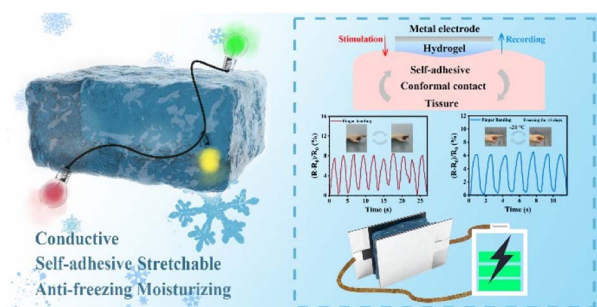
Xiaotao Zhang, Jiao Chen, Guoying Gao,* Hongyan Wang, Yongliang Tang, Bai Sun,* Yuxiang Ni, Yuanzheng Chen* and Yuan Ping Feng



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Multifunctional conductive hydrogels for wearable sensors and supercapacitors

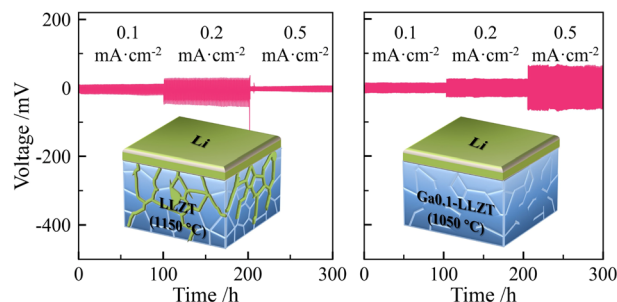
Quancai Li, Bin Tian,* Guilin Tang, Haoye Zhan, Jing Liang,* Panwang Guo, Qun Liu and Wei Wu*



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Improvement of the Li-ion conductivity and air stability of the Ta-doped $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$ electrolyte via Ga co-doping and its application in Li-S batteries

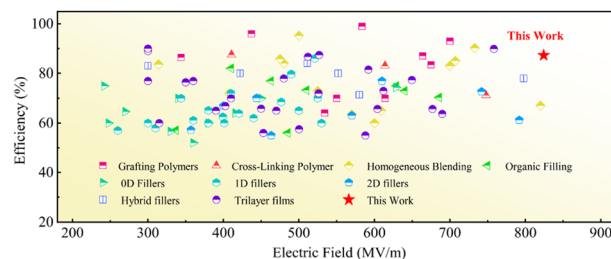
Kai Ma, Bowen Chen, Cheng-Xin Li* and Venkataraman Thangadurai*



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Optimizing the gradient of electric field distribution and inhibiting charge injection in multilayer dielectric films for high capacitive performance

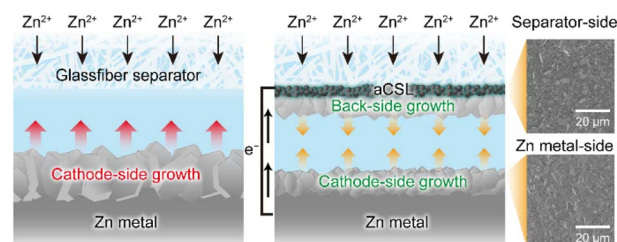
Zhicheng Li, Yu Zhang, Zhongbin Pan,* Xu Fan, Peng Li, Haiming Huang,* Weiliang Wang, Weidong Chen, Jinjun Liu and Weiping Li*



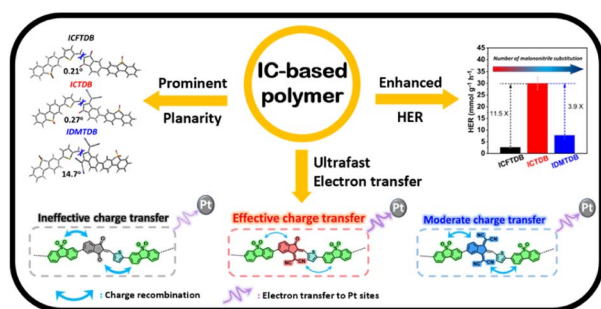
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A hydrophilic Janus-faced separator with functionalized nanocarbon for stable cycling of aqueous Zn-metal batteries

Hyuntae Lee, Jiwoong Kang, Ho Won Kang, Mingyu Lee, Jaewoong Han, Minhong Lim, Jaeho Lee, Woosuck Kwon, Dae-Hyun Nam, Byung Gon Kim* and Hongkyung Lee*



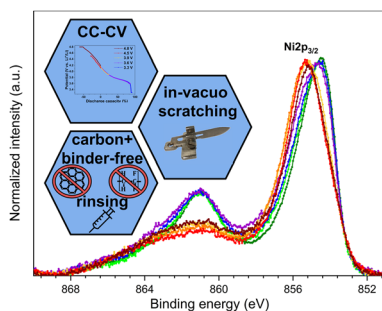
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Indanone-based conjugated polymers enabling ultrafast electron transfer for visible light-driven hydrogen evolution from water

Tse-Fu Huang, Ying-Rang Zhuang, Chih-Li Chang, Ching-Li Huang, Wei-Cheng Lin, Zi-Cheng Jiang, Li-Yu Ting, Islam M. A. Mekhemer, Yu-En Sun, Pinit Kidkhunthod, Jeng-Lung Chen, Yi-Chan Huang, Hung-Kai Hsu, Yuan-Ting Tseng, Yi-Hsiang Wu, Bing-Heng Li, Shang-Da Yang, Yen-Ju Cheng and Ho-Hsiu Chou*

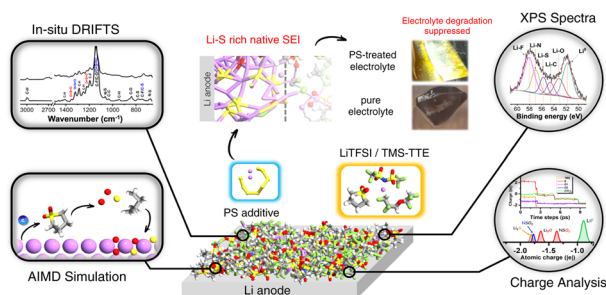
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Voltage-dependent charge compensation mechanism and cathode electrolyte interface stability of the lithium-ion battery cathode materials LiCoO₂ and LiNi_{1/3}Mn_{1/3}Co_{1/3}O₂ studied by photoelectron spectroscopy

Maximilian Mellin, Gennady Cherkashinin, Elham Mohseni, Robert Phillips, Wolfram Jaegermann* and Jan P. Hofmann*

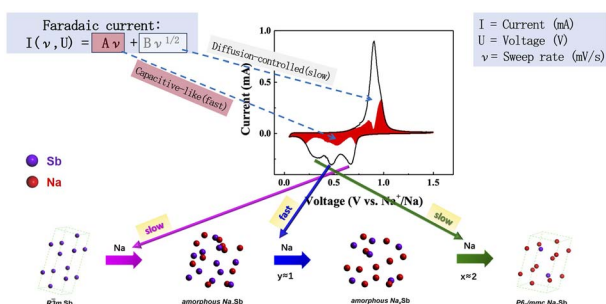
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Understanding the formation chemistry of native solid electrolyte interphase over lithium anode and its implications using a LiTFSI/TME-TTE electrolyte and polysulfide additive

Bikila Nagasa Olana, Shih-Huang Pan, Bing-Joe Hwang, Holger Althues, Jyh-Chiang Jiang and Shawn D. Lin*

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Understanding the fast kinetics and mechanism of sodium storage in antimony using *ab initio* grand canonical Monte Carlo simulation and *operando* X-ray scattering

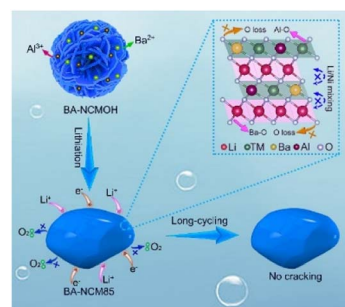
Manni Li, Tian Qiu, Samuel S. Welborn, Alexandre C. Foucher, Jintao Fu, Benjamin K. Lesel, Zeyu Wang, Lin Wang, Eric A. Stach, Andrew M. Rappe* and Eric Detsi*



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Enhanced Li-ion intercalation kinetics and lattice oxygen stability in single-crystalline Ni-rich Co-poor layered cathodes

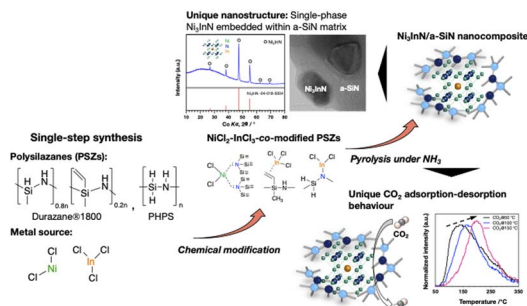
Hujun Zhang, Li Qin, Michal Sedlacik, Petr Saha, Qilin Cheng,* Haifeng Yu* and Hao Jiang



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An *in situ* growth route towards anti-perovskite Ni_3InN nanoparticles embedded within amorphous silicon nitride

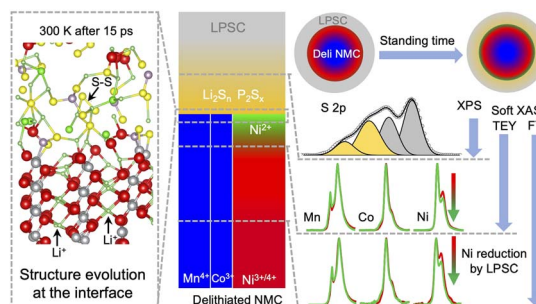
Shotaro Tada, Sakurako Takazawa, Norifumi Asakuma, Maxime Cheype, Sawao Honda, Ravi Kumar, Samuel Bernard and Yuji Iwamoto*



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Interfacial degradation of the NMC/ $\text{Li}_6\text{PS}_5\text{Cl}$ composite cathode in all-solid-state batteries

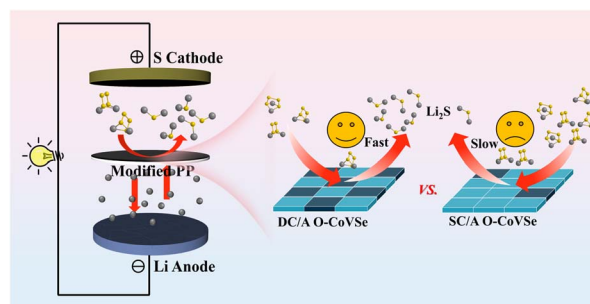
Xudong Hu, Zishuo Zhao, Yang Zhao, Xuelong Wang, Sami Sainio, Dennis Nordlund, Cristina M. Ruse, Xiao-Dong Zhou, Shannon W. Boettcher, Dong Hou,* Qi-Jun Hong* and Linqin Mu*



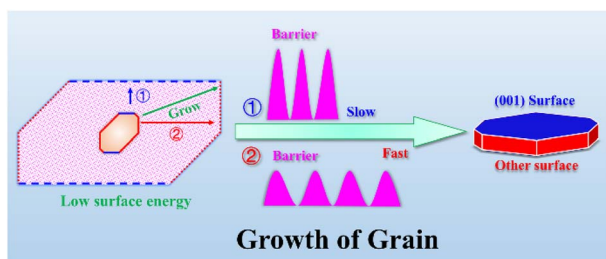
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Oxygen-incorporated crystalline/amorphous heterophase cobalt vanadium selenide nanoplates with dense interfacial sites for robust lithium–sulfur batteries

Pengcheng Tan, Yuan Yin, Daoping Cai,* Ban Fei, Chaoqi Zhang, Qidi Chen* and Hongbing Zhan



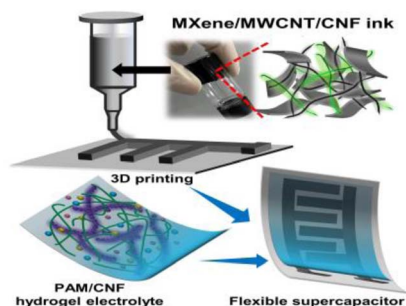
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The grain morphology and surface properties of a Li-rich Li_2MnO_3 cathode material: a first-principles study

Xiaotong Yan, Xingyu Zhou, Chunwei Zhu, Weijie Huang and Yu-Jun Zhao*

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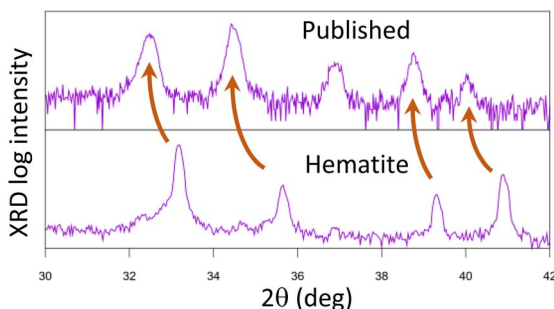


3D printed MXene-based films and cellulose nanofiber reinforced hydrogel electrolyte to enable high-performance flexible supercapacitors

Guoqiang Zhou, Xinyue Liu, Chaozheng Liu, Zhenglin Li, Chuhan Liu, Xiaojie Shi, Ziyang Li, Changtong Mei* and Mei-Chun Li*

COMMENTS

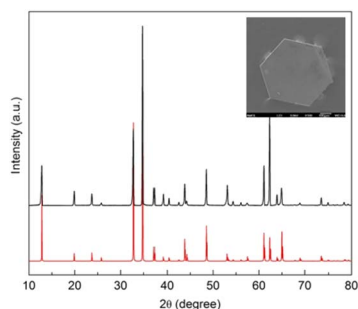
3745



Comment on "A $\text{K}_2\text{Fe}_4\text{O}_7$ superionic conductor for all-solid-state potassium metal batteries", by H. Yuan *et al.*, *J. Mater. Chem. A*, 2018, 6, 8413–8418

Doriano Brogioli, Michele Tribbia, Michael Gockeln, Jens Glenneberg, Julian Schwenzel and Fabio La Mantia

3748



Reply to the 'Comment on "A $\text{K}_2\text{Fe}_4\text{O}_7$ superionic conductor for all-solid-state potassium metal batteries"', by D. Brogioli, M. Tribbia, M. Gockeln, J. Glenneberg, J. Schwenzel and F. LaMantia, *J. Mater. Chem. A*, 2023, 11, <https://doi.org/D3TA01240A>

Hongming Yuan,* He Li, Tingsong Zhang and Guanghua Li



CORRECTIONS

3750

Correction: The origins of formic acid electrooxidation on selected surfaces of Pt, Pd, and their alloys with Sn
Radhey Shyam Yadav, Medhanie Gebremedhin Gebru, Hanan Teller, Alex Schechter and Haya Kornweitz*

3751

Correction: Improving the performance of a SnS₂ cathode with interspace layer engineering using a Na⁺ insertion/extraction method for aqueous zinc ion batteries

Ali Molaei Aghdam,* Nima Mikaeili Chahartagh, Shahriar Namvar, Mahshid Ershadi, Farshad Boorboor Ajdari* and Ehsan Delfani

