

Journal of Materials Chemistry A

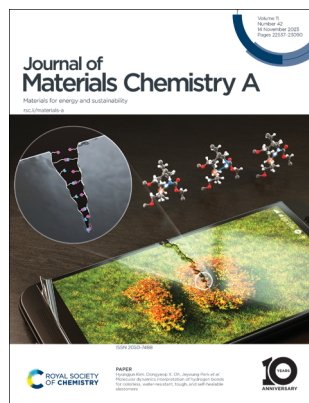
Materials for energy and sustainability

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ISSN 2050-7488 CODEN JMCAET 11(42) 22537–23090 (2023)



Cover

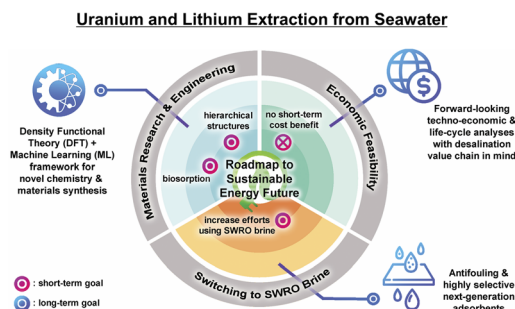
See Hyungjun Kim, Dongyeop X. Oh, Jeyoung Park *et al.*, pp. 22737–22748. Image reproduced by permission of Hyungjun Kim from *J. Mater. Chem. A*, 2023, **11**, 22737.

REVIEWS

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Uranium and lithium extraction from seawater: challenges and opportunities for a sustainable energy future

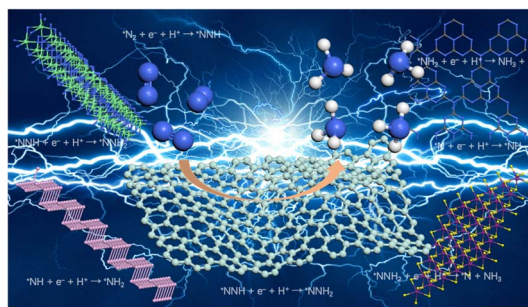
Yu Jie Lim, Kunli Goh, Atsushi Goto, Yanli Zhao and Rong Wang*



22590

Emerging two-dimensional materials for the electrocatalytic nitrogen reduction reaction to yield ammonia

Yukun Ruan, Zhen-Hong He, Zhao-Tie Liu, Weitao Wang, Leiduan Hao, Liang Xu, Alex W. Robertson and Zhenyu Sun*



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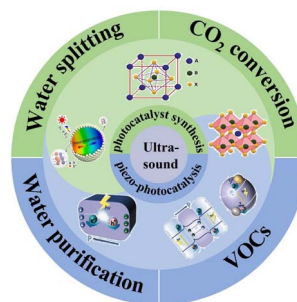


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Advances in ultrasound-assisted photocatalyst synthesis and piezo-photocatalysts

Bailing Zhong, Songqi Li, Jundie Hu, Xiaogang Yang, Yahui Cai, Chang Ming Li* and Jiafu Qu*



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Reticular materials for wastewater treatment

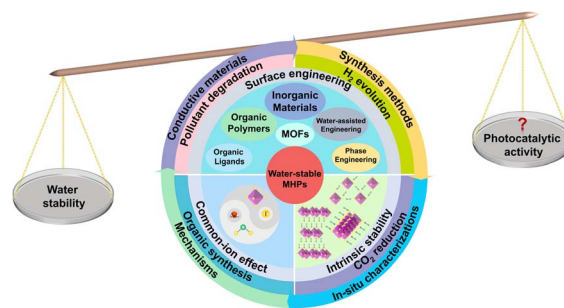
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Recent advances in synthesis of water-stable metal halide perovskites and photocatalytic applications

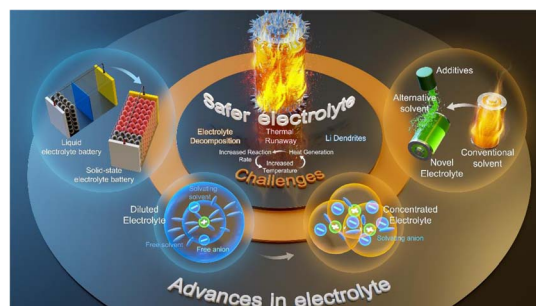
He Zhao, Krisztian Kordas* and Satu Ojala*



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Electrolyte designs for safer lithium-ion and lithium-metal batteries

J. J. Nicholas Lim, Gwendolyn J. H. Lim, Yi Cai, Rodney Chua, Yuqi Guo, Yao Yan and Madhavi Srinivasan*



PERSPECTIVE

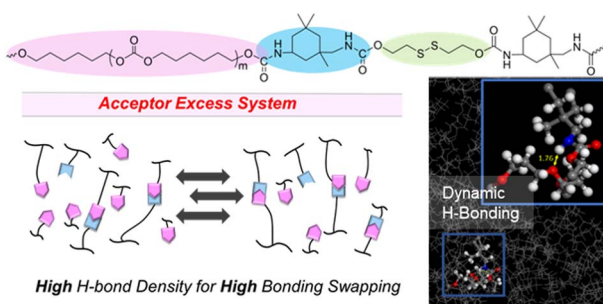
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**Sustainable stretchable batteries for next-generation wearables**

Aiman Rahmanudin,^{*} Ziyauddin Khan, Klas Tybrandt and Nara Kim^{*}

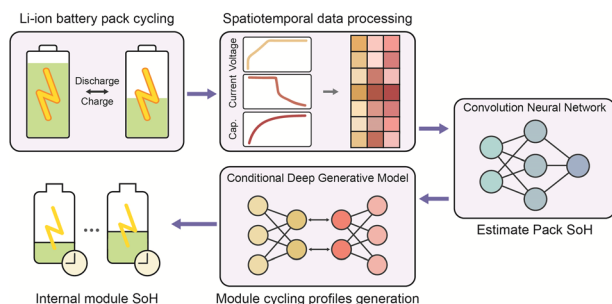
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**Molecular dynamics interpretation of hydrogen bonds for colorless, water-resistant, tough, and self-healable elastomers**

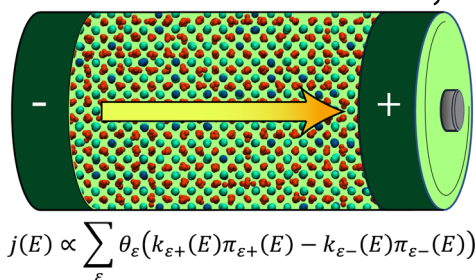
Seon-Mi Kim, Minkyung Lee, Sanggil Park, Seul-A. Park, Hyeonyeol Jeon, Jun Mo Koo, Sung Bae Park, Hyo Jeong Kim, Youngho Eom, Eun Seong Lee, Hyungjun Kim,^{*} Dongyeop X. Oh^{*} and Jeyoung Park^{*}

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Seojoong Park, Dongjun Lim, Hyunjun Lee, DaWoon Jung, Yunseok Choi,^{*} Hankwon Lim^{*} and Donghyuk Kim^{*}

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Ionic current in solid oxide electrolyte**Emergent ionic conduction in aliovalently-doped fast ion conductors**

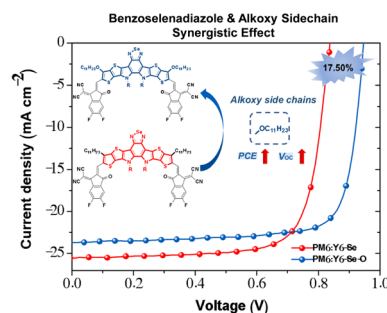
Bharathi Bandi and Abhijit Chatterjee^{*}



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Synergistic effect of benzoselenadiazole core and alkoxy side chain substitution on the photovoltaic performance of non-fullerene acceptors

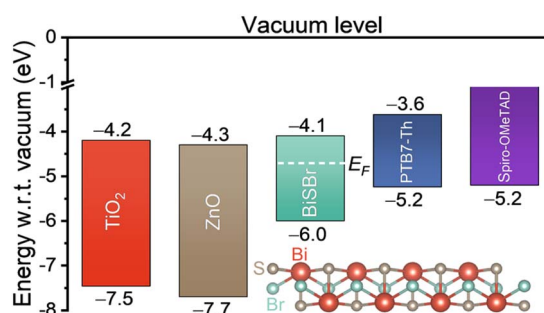
Ho Ming Ng, Chung Hang Kwok, Zhenyu Qi, Zhen Wang, Li Chen, Wei Liu, Wenchao Zhao,* Harald Ade, Chen Zhang, He Yan* and Han Yu*



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Air-stable bismuth sulfobromide (BiSBr) visible-light absorbers: optoelectronic properties and potential for energy harvesting

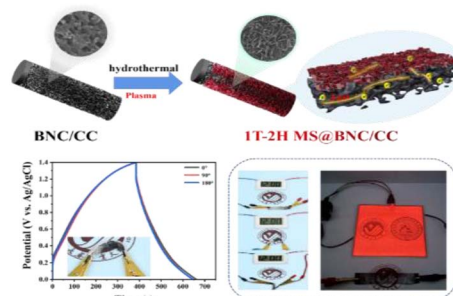
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Vertically aligned 1T-2H MoS₂ on 3D porous carbon for ultrahigh-performance flexible energy storage device

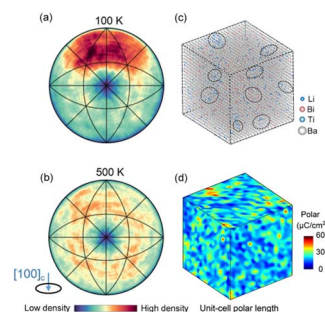
Zhao Wang, Zongwei Guo, Jiajun Luo, Xuesong Wang, Ming Li,* Yuhui Ao* and Lin Jin*



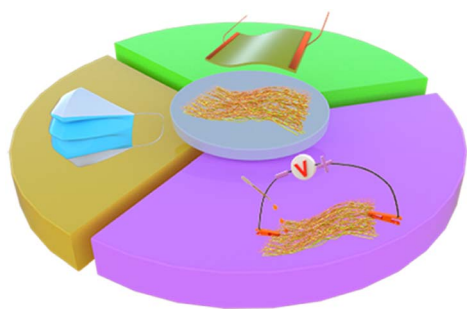
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Local structure heterogeneity in unique tetragonal BaTiO₃-based relaxor featuring ultrahigh electrostrictive effect

Yonghao Yao, Lu Wang, Yuanpeng Zhang, Jue Liu, Chuanrui Huo, Hui Liu* and Jun Chen*



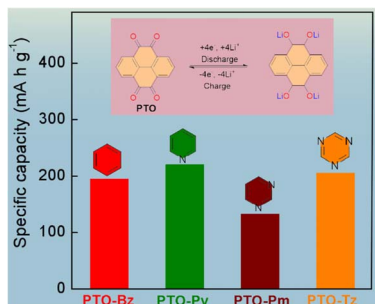
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An ultrafine spider-like carbon nanonet for high performance air filters, health monitoring sensors, and green energy generators

Ziyin Xiong, Ming Xia,* Xiaoming Guo, Lijun Wang, Yi Wu, Qin Cheng, Jia Xu, Shanshan He, Mufang Li,* Ke Liu and Dong Wang*

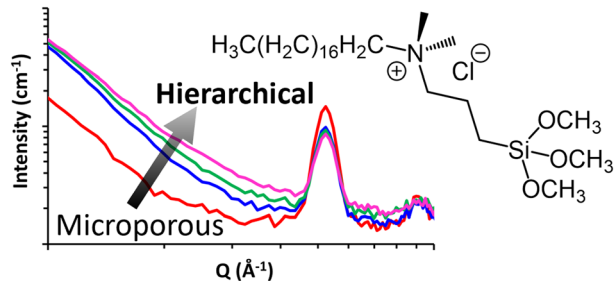
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Atomistic structural engineering of conjugated organic polymer cathodes for high-performance Li-organic batteries

Yuke Li, Yijiao Ding, Juncheng Wu, Yu Wang, Lei Chen,* Yanxian Jin, Li Zhang, Shi-Bin Ren* and De-Man Han

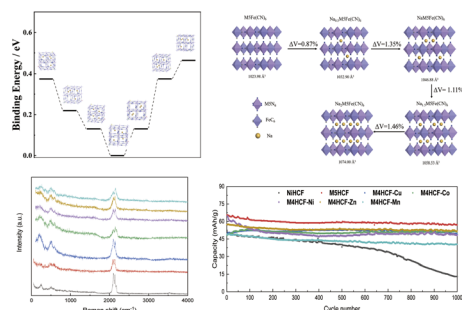
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Using small angle neutron scattering to explore porosity, connectivity and accessibility, towards optimised hierarchical solid acid catalysts

Matthew E. Potter,* Alice E. Oakley, Joshua J. M. Le Brocq, Lauren N. Riley, Marina Carravetta, Stephen M. King, Cara M. Doherty, Bart D. Vandegehuchte and Robert Raja*

22835



Investigation of high-entropy Prussian blue analog as cathode material for aqueous sodium-ion batteries

Xu Zhao, Zhaohui Xing and Chengde Huang*

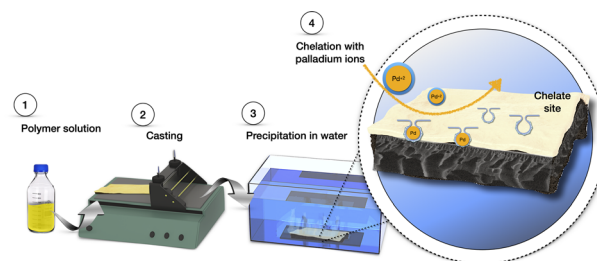


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From waste to wealth: chelating polymeric membranes for precious palladium recovery from wastewater

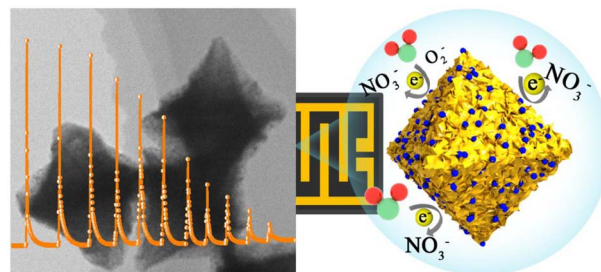
Jamaliah Aburabie, Shabin Mohammed, Anilkumar Kumaran and Raed Hashaikeh*



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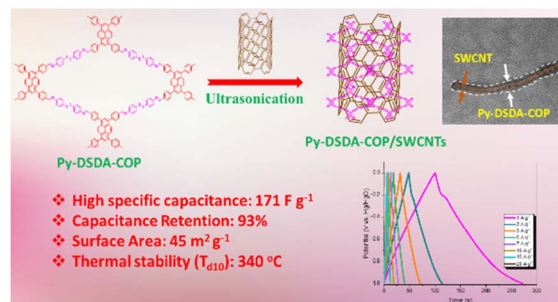
Jinhong Yang, Haoran Peng, Chong Lin, Qingjiang Pan, Lixue Qi, Li Li* and Keying Shi*



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Pyrene-based covalent organic polymers with nano carbonaceous composites for efficient supercapacitive energy storage

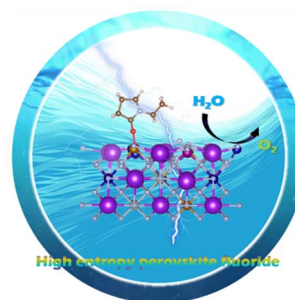
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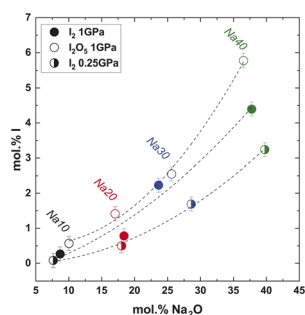
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Enhancing the electrostatic potential difference of high entropy perovskite fluorides by ligand modification for promoted dynamic reconstruction

Zeyu Hao, Zhengyan Du, Ting Deng, Dong Wang, Yi Zeng, Shansheng Yu, Zeshuo Meng,* Xiaoying Hu,* Xiufeng Hao* and Hongwei Tian*



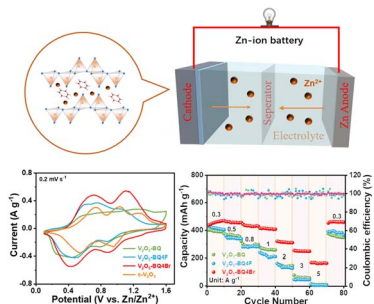
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Iodine dissolution mechanisms in high-pressure aluminoborosilicate glasses and their relationship to oxygen speciation

Yann Morizet,^{*} Sami Soudani, Jonathan Hamon, Michael Paris, Carole La and Eric Gautron

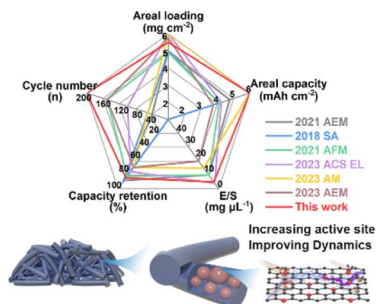
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Unravelling the effect of benzoquinone intercalators on the aqueous zinc-ion storage performance toward a vanadium pentoxide cathode

Yuanhao Xia, Qin Cao, Yan Wang, Xinlei Wang^{*} and Jie Zhou^{*}

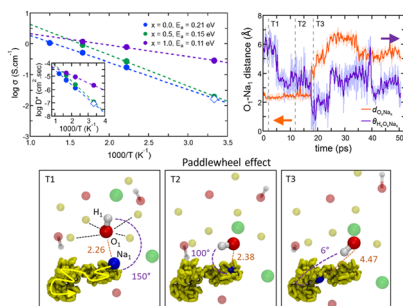
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Triallyl isocyanurate enabled SPAN-based organosulfur featuring high sulfur & selenium loading for advanced Li/Na-S batteries

Qiang Wu, Mingsheng Qin, Yuanke Wu, Haolin Zhu, Shijie Cheng and Jia Xie^{*}

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Unveiling the structure and ion dynamics of amorphous Na_{3-x}OH_xCl antiperovskite electrolytes by first-principles molecular dynamics

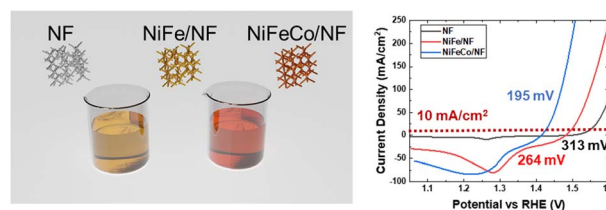
Tan-Lien Pham, Mohammed Guerboub, Assil Bouzid, Mauro Boero, Carlo Massobrio, Young-Han Shin^{*} and Guido Ori^{*}



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Cobalt modification of nickel–iron hydroxide electrocatalysts: a pathway to enhanced oxygen evolution reaction

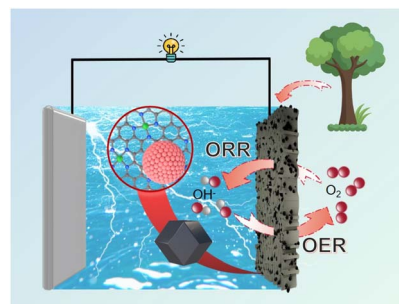
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Mn-doped Co nanoparticles on wood-derived monolithic carbon for rechargeable zinc–air batteries

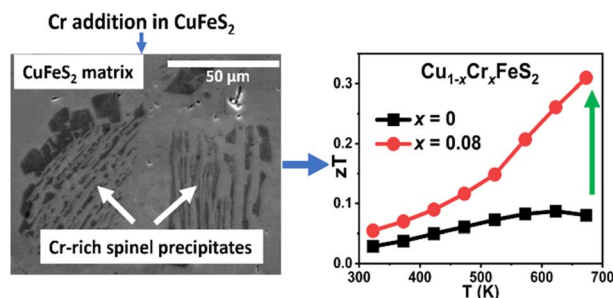
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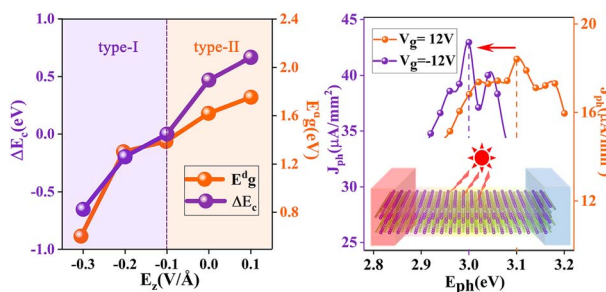
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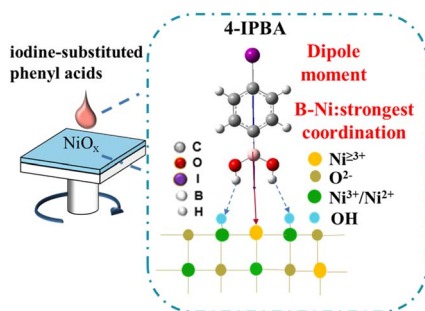
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Design and regulation of high-performance photovoltaic systems based on novel two-dimensional KAgSe/KAgX ($\text{X} = \text{S}, \text{Te}$) van der Waals heterojunctions

Keying Han, Qiang Wang,* Yan Liang,* Thomas Frauenheim,* Defeng Guo* and Bin Wang*



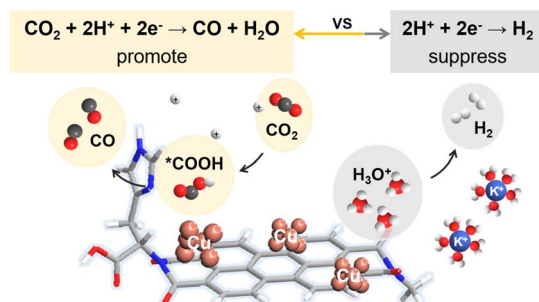
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Unraveling the modification effect at NiO_x/perovskite interfaces for efficient and stable inverted perovskite solar cells

Xinxin Kang, Dourong Wang, Kun Sun, Xue Dong,* Wei Hui, Baohua Wang, Lei Gu, Maoxin Li, Yaqi Bao, Jie Zhang, Renjun Guo, Zerui Li, Xiongzhao Jiang, Peter Müller-Buschbaum and Lin Song*

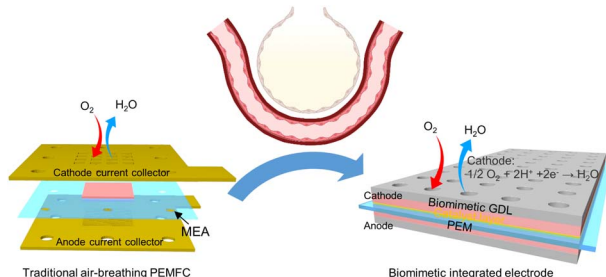
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In situ formed copper nanoparticles via strong electronic interaction with organic skeleton for pH-universal electrocatalytic CO₂ reduction

Ying Zhang,* Chenchen Zhang, Dan Wang, Jianing Gui, Junjun Mao, Yang Lou, Chengsi Pan and Yongfa Zhu

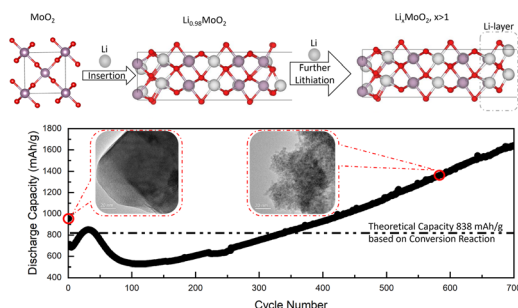
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Biomimetic integrated gas diffusion layer inspired by alveoli for enhanced air-breathing fuel cell performance and stability

Zhi Chai, Fandi Ning, Qinglin Wen, Pei Liu, Can He, Wei Li, Xiong Dan, Pengpeng Xu, Yiyang Liu, Yali Li and Xiaochun Zhou*

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Elucidating the mechanism underlying the augmented capacity of MoO₂ as an anode material in Li-ion batteries

Hua Wang, Wei Hao, Tianyi Li, Xintong Li, Kai Chang, Xinwei Zhou, Dewen Hou, Ahmed M. Hashem, Gyeong S. Hwang, Yuzi Liu, Cheng-Jun Sun, Ashraf E. Abdel-Ghany, Rasha S. El-Tawil, Hanaa Abuzeid Mohamed, Somia M. Abbas, C. Buddie Mullins, Christian M. Julien and Likun Zhu*

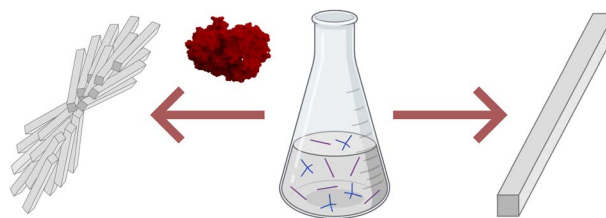


PAPERS

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Protein-induced modifications in crystal morphology of a hydrogen-bonded organic framework

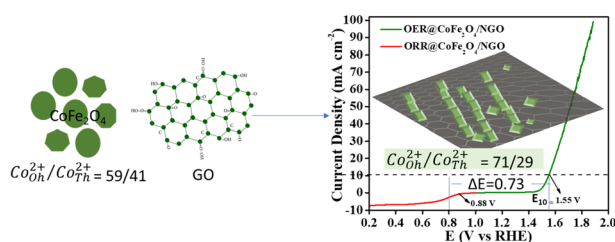
Kate L. Flint, Jack D. Evans, Francesco Carraro, Simon Renner, Oliver M. Linder-Patton, Heinz Amenitsch, Robert J. Falconer, Nicholas G. White, Christopher J. Sumbly,* Paolo Falcaro* and Christian J. Doonan*



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Tuning of cationic distribution in “partially inverted” cobalt ferrite spinel nanocubes via a nitrogen-doped graphene oxide support for enhanced bifunctional oxygen electrocatalysis

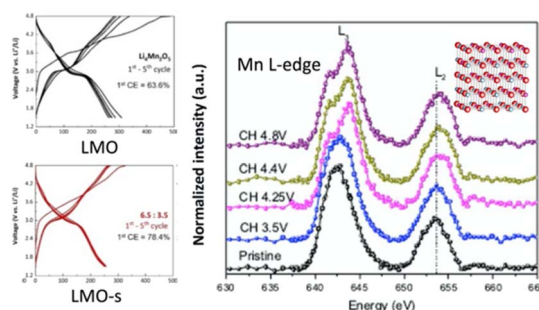
Shwetambara Jha, Priya Jain, Regina Palkovits and Pravin Popinand Ingole*



23048

Li–Mn–O Li-rich cation disordered rock-salt cathode materials do not undergo reversible oxygen redox during cycling

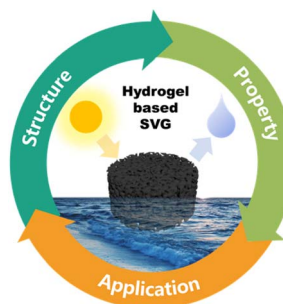
Wei Yin, Judith Alvarado, Elyse A. Kedzie, Bryan D. McCloskey, Chaochao Dun, Jeffrey J. Urban, Zengqing Zhuo, Wanli Yang and Marca M. Doeff*



23062

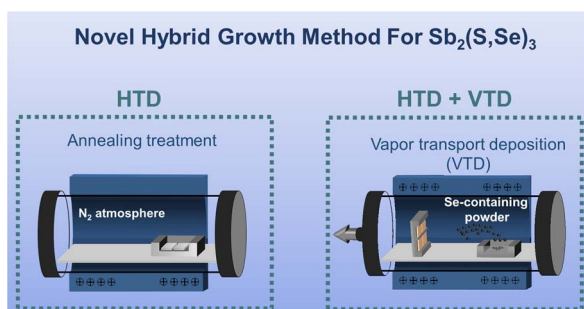
Investigation of structure–property–application relationships of a hydrogel-based solar vapor generator

Shudi Mao, An Feng, Stella Zhang, Casey Onggowarsito, Qian Chen, Dawei Su* and Qiang Fu*



PAPERS

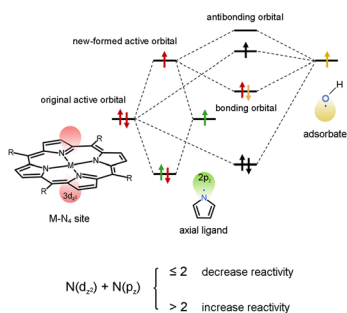
23071



Efficiency boosting in $\text{Sb}_2(\text{S,Se})_3$ solar cells enabled by tailoring bandgap gradient *via* a hybrid growth method

Yazi Wang, Seunghwan Ji, Choongman Moon, Jinwoo Chu, Hee Joon Jung* and Byungha Shin*

23080



Revealing insights into the axial coordination effect of $\text{M}-\text{N}_4$ catalysts on electrocatalytic activity towards the oxygen reduction reaction

Youxuan Ni, Weiwei Xie* and Jun Chen*

CORRECTION

23087

Correction: Shape-controlled synthesis of porous Co_3O_4 nanostructures for application in supercapacitors

Ting Zhu, Jun Song Chen and Xiong Wen Lou*

