

Journal of Materials Chemistry A

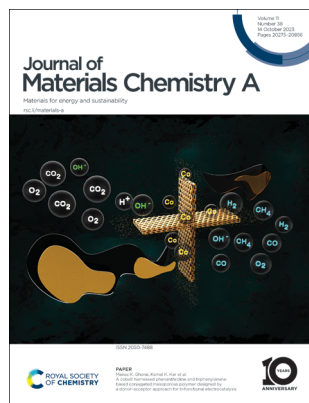
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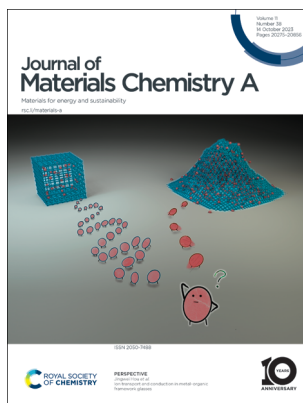
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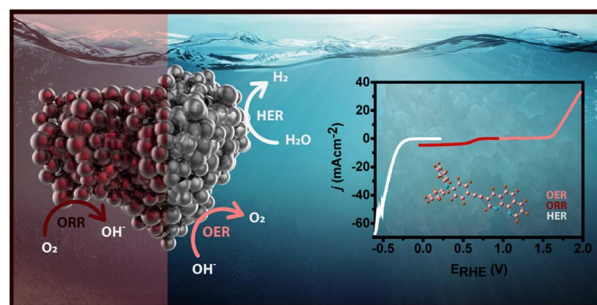
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PAPER

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A cobalt harnessed phenanthroline and triphenylamine-based conjugated mesoporous polymer designed by a donor–acceptor approach for trifunctional electrocatalysis

Sugandha Singh, Manas K. Ghorai* and Kamal K. Kar*

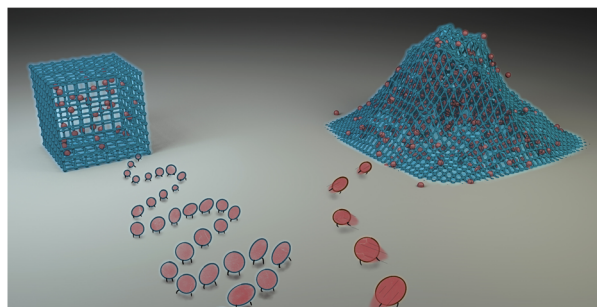


PERSPECTIVE

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Ion transport and conduction in metal–organic framework glasses

Milton Chai, Ruiqi Chen, Kaijie Xu, Yuelei Chen, Shengchun Ma, Rijia Lin, Vicki Chen and Jingwei Hou*



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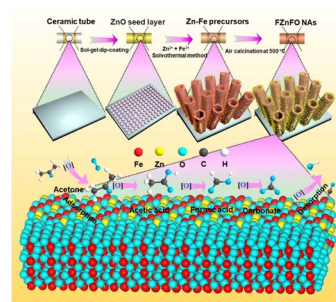


PAPER

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In situ construction of $\text{AFe}_2\text{O}_4/\text{Fe}_2\text{O}_3$ ($\text{A} = \text{Cd}, \text{Ca}, \text{Zn}$) array structures for selective detection of VOCs

Baosheng Li, Ming Zheng, Tingting Wang, Qiuyue Zheng, Ruibai Ma, Zoltán Major, Xianfa Zhang, Lihua Huo, Shan Gao, Xin Zhou,* Xiaoli Cheng* and Yingming Xu*



REVIEW

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A review of silicon oxycarbide ceramics as next generation anode materials for lithium-ion batteries and other electrochemical applications

Ravindran Sujith, Jella Gangadhar, Michelle Greenough, Rajendra K. Bordia and Dillip K. Panda*



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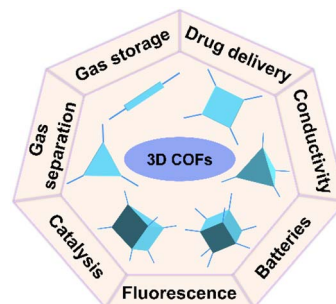
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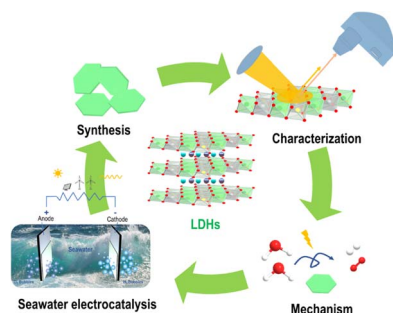
Reticular chemistry within three-dimensional covalent organic frameworks for multiple applications

Xiaokang Wang, Fei Gao, Zixi Kang, Weidong Fan* and Daofeng Sun*



REVIEWS

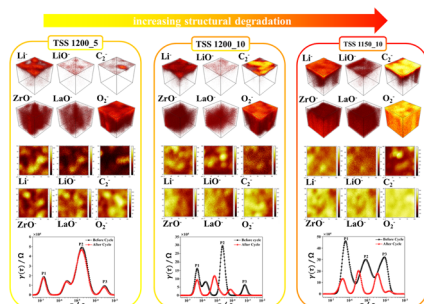
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Opportunities and challenges of hydrotalcite-related electrocatalysts for seawater splitting: a systematic perspective from materials synthesis, characterization and application

Rongrong Dai, Chenyang Dai, Shujin Hou,* Qijun He, Baogui Liu, Minghua Huang, Heqing Jiang, MoHua Li, Likun Pan, Zheng Guo, Jeonghun Kim, Minsu Han, Yusuke Yamauchi* and Xingtao Xu*

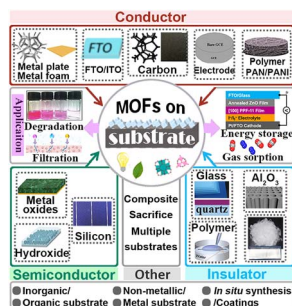
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Reinforcing ionic conductivity and alleviating dendrite propagation of dense cubic $\text{Ga}_{0.3}\text{Li}_{6.1}\text{La}_3\text{Zr}_2\text{O}_{12}$ via two-step sintering

Rae-Hyun Lee, Jae-Won Sim, Jong-Kyu Lee, Hyeong-Seok Oh, Jung-Rag Yoon,* Kyong-Nam Kim* and Seung-Hwan Lee*

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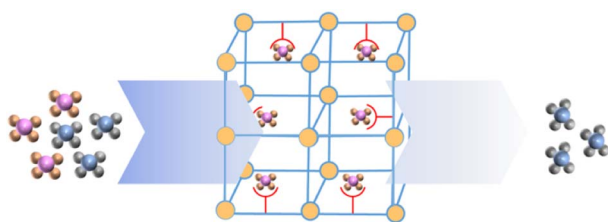


Metal–organic frameworks on versatile substrates

Li Zhong, Jinjie Qian,* Ni Wang,* Sridhar Komarneni* and Wencheng Hu

PERSPECTIVES

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✓Surface engineering ✓Molecular docking ✓Size exclusion

Metal–organic frameworks for hydrocarbon separation: design, progress, and challenges

Xiao-Jing Xie, Heng Zeng, Weigang Lu* and Dan Li*

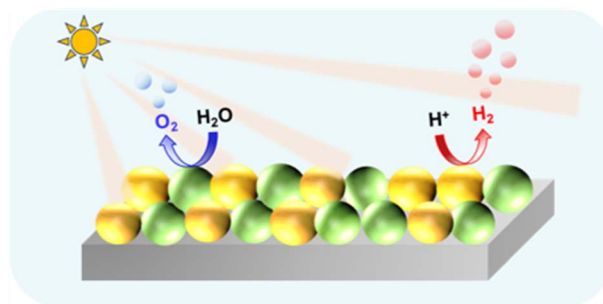


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Recent advances in photocatalyst sheet development and challenges for cost-effective solar hydrogen production

Swarnava Nandy, Takashi Hisatomi, Tsuyoshi Takata, Tohru Setoyama and Kazunari Domen*

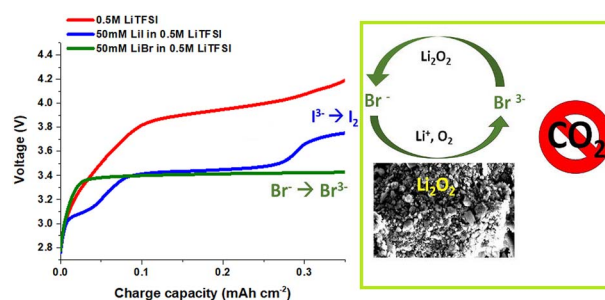


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Exploring the impact of lithium halide-based redox mediators in suppressing CO₂ evolution in Li–O₂ cells

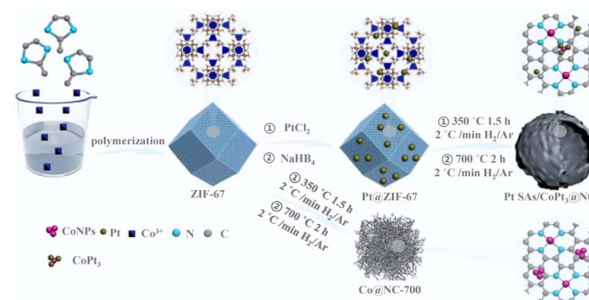
Sri Harsha Akella, Muniyandi Bagavathi, Rosy, Daniel Sharon, Capraz Ozgur and Malachi Noked*



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Ultralow platinum catalysts for high performance fuel cells: *in situ* encapsulation of platinum atoms and CoPt₃ in 3D hollow nanoshells

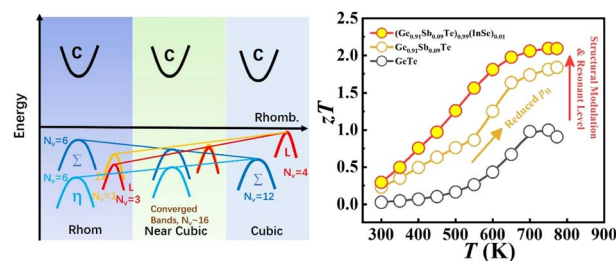
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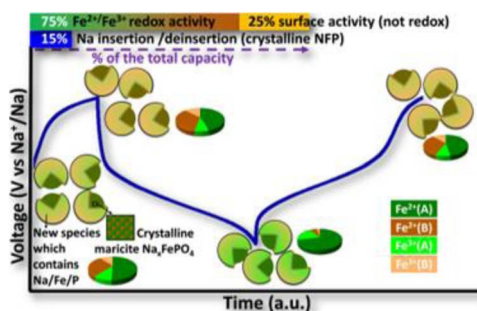
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Structural modulation and resonant level enable high thermoelectric performance of GeTe in the mid-to-low temperature range

Guangjie Wu, Zhe Guo, Ruoyu Wang, Xiaojian Tan,* Chen Cui, Peng Sun, Haoyang Hu, Jiehua Wu, Guoqiang Liu and Jun Jiang*



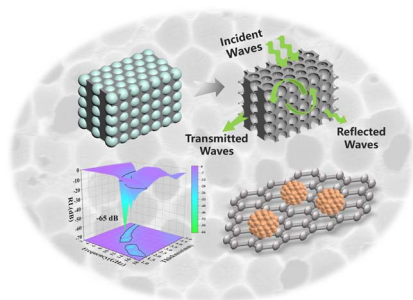
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Unravelling the electrochemical activation and the reaction mechanism of maricite-NaFePO₄ using multimodal *operando* techniques

Carlos Berlanga, Moulay Tahar Sougrati, Antonio J. Fernández-Ropero, Neyrouz Baaboura, Nicholas E. Drewett, Juan M. Lopez del Amo, Gene Nolis, Jose S. Garitaonandia, Marine Reynaud, Lorenzo Stievano, Montse Casas-Cabanas* and Montse Galceran*

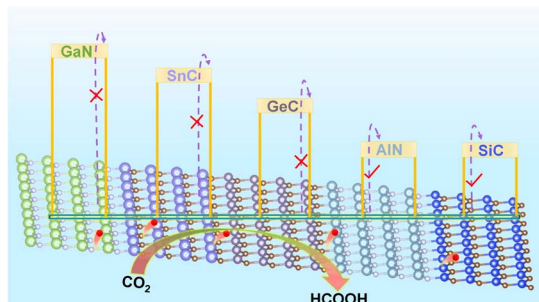
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Constructing interfacial polarization sites within a honeycomb-like porous structure via a spatially confined-etching strategy for boosting electromagnetic wave absorption

Wenxuan Hou, Baojun Wang, Shikuo Li, Fangzhi Huang, Hengxiu Yang* and Hui Zhang*

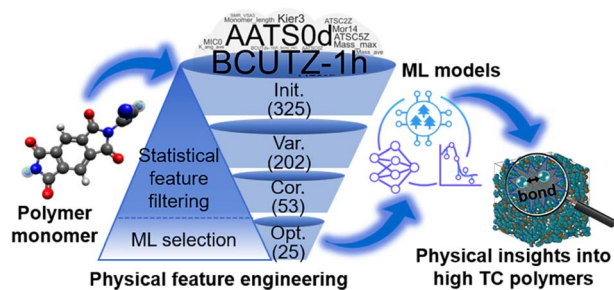
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Identifying hexagonal 2D planar electrocatalysts with strong OCHO* binding for selective CO₂ reduction

Yuefeng Zhang, Tianyi Wang, Fei Wang, Huiling Zheng, Zhiyuan Zeng* and Hao Li*

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High-throughput screening of amorphous polymers with high intrinsic thermal conductivity via automated physical feature engineering

Xiang Huang, Shengluo Ma, Yunwen Wu,* Chaoying Wan, C. Y. Zhao, Hong Wang and Shenghong Ju*

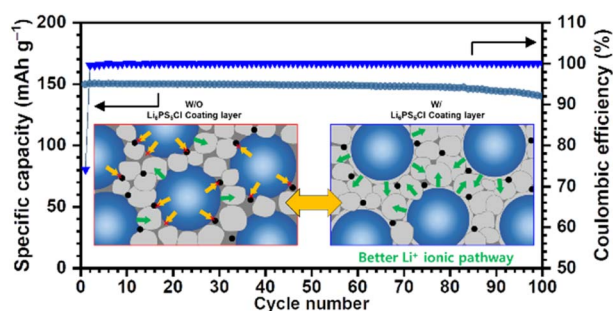


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An argyrodite sulfide coated NCM cathode for improved interfacial contact in normal-pressure operational all-solid-state batteries

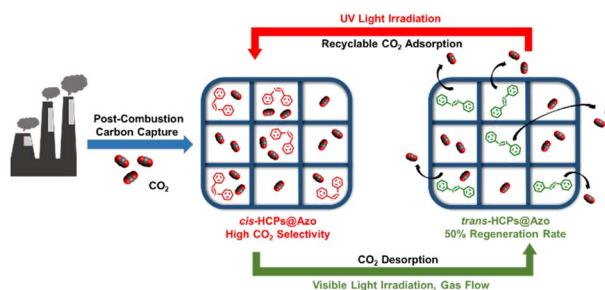
Jun Tae Kim, Hyeon-Ji Shin, A-Yeon Kim, Hyeonseong Oh, Hun Kim, Seungho Yu, Hyungchul Kim, Kyung Yoon Chung, Jongsoo Kim, Yang-Kook Sun* and Hun-Gi Jung*



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Delivering low-energy carbon capture with photo-responsive hypercrosslinked polymers derived from polystyrene waste

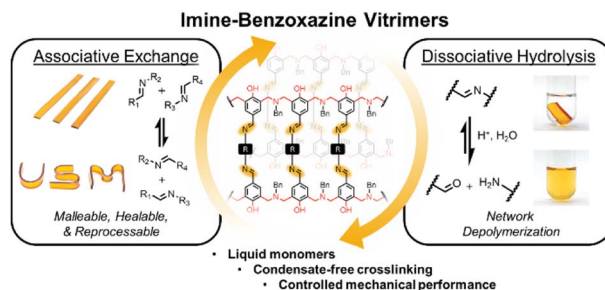
Aotian Liu, Guanchu Lu, Xianfeng Fan* and Cher Hon Lau*



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Solvent-free preparation of imine vitrimers: leveraging benzoxazine crosslinking for melt processability and tunable mechanical performance

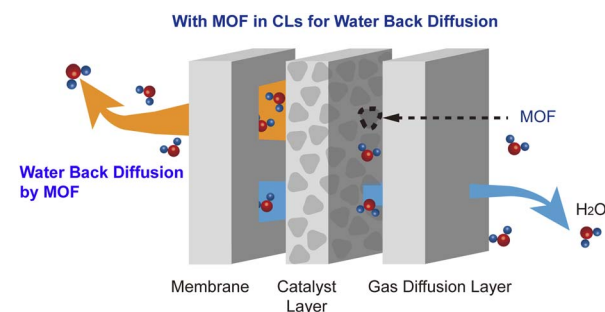
Levi J. Hamernik, William Guzman and Jeffrey S. Wiggins*



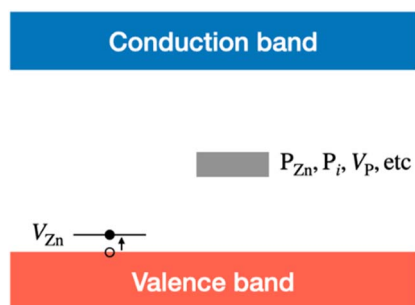
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Metal-organic framework for high-performance catalyst layers in proton-exchange membrane fuel cells

Inyoung Choi, Jinhyuk Lim, Roberto dos Reis, Eunji Kim, Soo Yeon Lim, Vinayak P. Dravid, Heejin Kim,* Keun-Hwan Oh* and Kwan Woo Nam*



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First-principles study of intrinsic and hydrogen point defects in the earth-abundant photovoltaic absorber Zn_3P_2

Zhenkun Yuan, Yihuang Xiong and Geoffroy Hautier*

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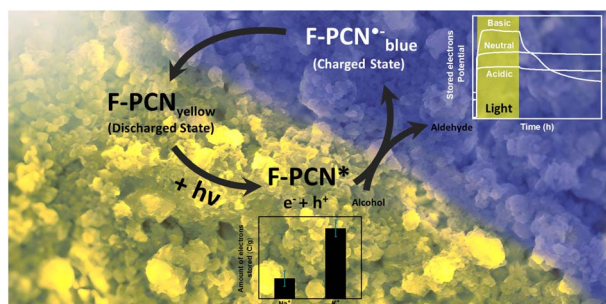
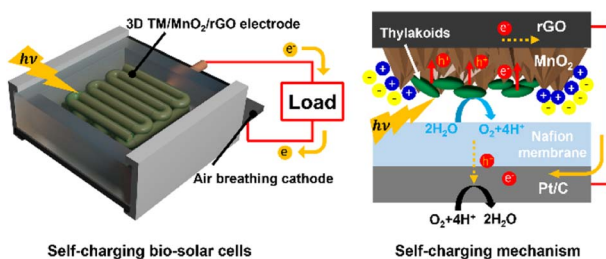


Photo and redox active carbon nitride – dual functionality for energy storage

Rohit Mann and Deepa Khushalani*

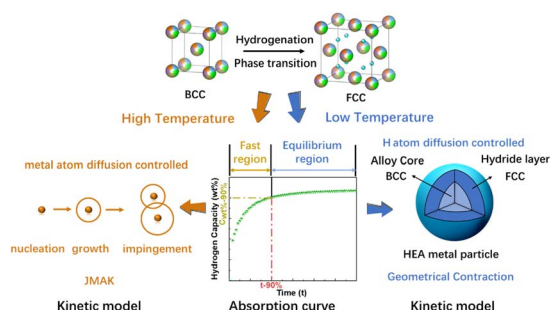
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MnO₂-decorated highly porous 3D-printed graphene supercapacitors for photosynthetic power systems

Ho Yun Jung, Seon Il Kim, JongHyun Kim, Yong Jae Kim, Hyeonaug Hong, JaeHyung Yun and WonHyung Ryu*

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Composition and temperature influence on hydrogenation performance of $TiZrHfMo_xNb_{2-x}$ high entropy alloys

J. W. Zhang, P. P. Zhou, Z. M. Cao, P. C. Li, J. T. Hu, H. Y. Xiao, X. S. Zhou,* H. H. Shen* and X. T. Zu*

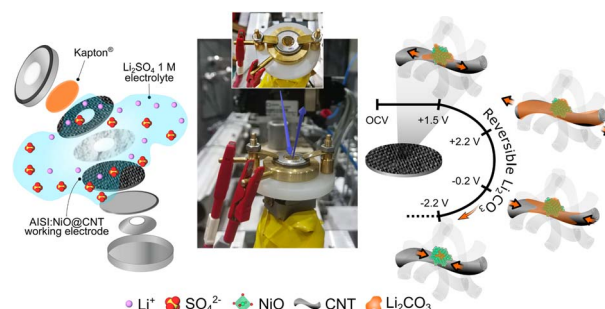


PAPERS

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Combining *in situ* electrochemistry, *operando* XRD & Raman spectroscopy, and density functional theory to investigate the fundamentals of Li_2CO_3 formation in supercapacitors

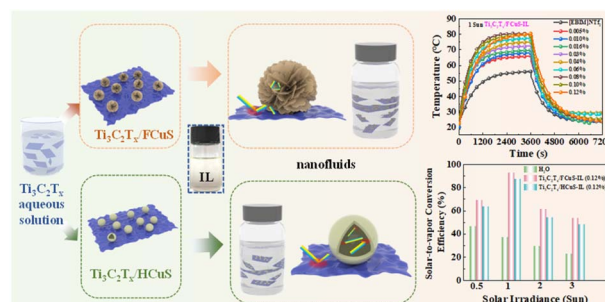
Bruno Freitas, Willian G. Nunes, Carla G. Real, Cristiane B. Rodella, Gustavo Doubek, Leonardo M. da Silva, Ericson H. N. S. Thaines, Leandro A. Pocrifka, Renato G. Freitas* and Hudson Zanin*



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$\text{Ti}_3\text{C}_2\text{T}_x$ and copper sulfide composite nanofluids with a hierarchical structure for sustainable and efficient solar light–thermal conversion

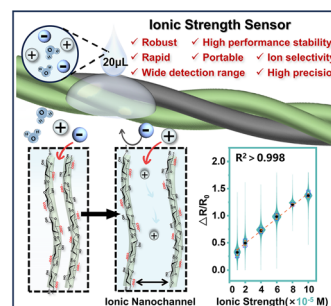
Fangfang Su, Zhongjie He, Jinliang Xie, Jing Zhang, Weirui Zhang, Yangyang Xin, Aibo Zhang, Dongdong Yao* and Yaping Zheng*



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Cellulosic nanocomposite filaments for an ionic strength sensor with ultrahigh precision and sensitivity

Yuying Kong, Hui Mao, Zihuan Zhang, Junqi Gao, Xiao Han, Wen-Jun Wang, Khak Ho Lim and Xuan Yang*



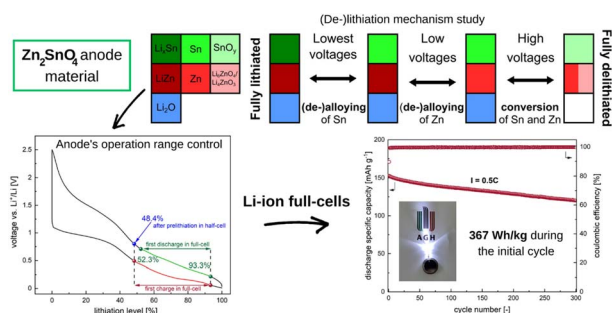
20676

Ammonium fluoride induced barrier-free and oxygen vacancy enhanced LLZO powder for fast interfacial lithium-ion transport in composite solid electrolytes

Ziwen Pan, Shiyu Cao, Xinqi Lu, Gang Zhang, Qiang Shen, Chong Mao, Xiaobing Dai and Fei Chen*



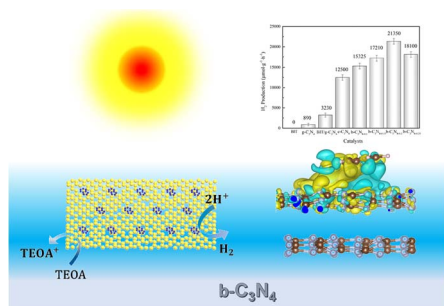
20686



Understanding the electrochemical reaction mechanism to achieve excellent performance of the conversion-alloying Zn_2SnO_4 anode for Li-ion batteries

Maciej Moździerz, Zhenhe Feng,* Agnieszka Brzoza-Kos, Paweł Czaja, Boyang Fu and Konrad Świerczek*

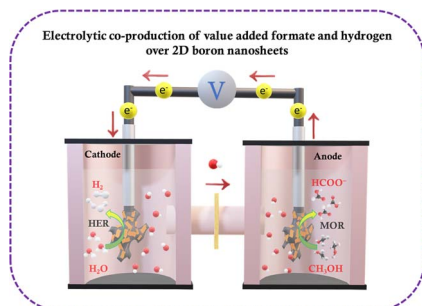
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Efficient photocatalytic hydrogen evolution: a novel multi-modified carbon nitride based on physical adsorption

Chaoyu Lv, Wei Li,* Qiawu Lin, Huixing Yang, Yangyang Jiang, Yongzhuo Yu and Yuxing Huang

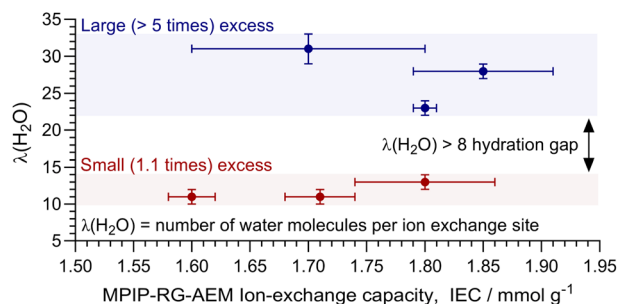
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Value-added methanol electroreforming coupled with green hydrogen production at the edge interface of 2D boron nanosheets

Arunprasath Sathyaseelan, Karthikeyan Krishnamoorthy, Parthiban Pazhamalai, Noor Ul Haq Liyakath Ali and Sang-Jae Kim*

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Radiation-grafted anion-exchange membranes for CO_2 electroreduction cells: an unexpected effect of using a lower excess of *N*-methylpiperidine in their fabrication

Terry R. Willson, Carlos A. Giron Rodriguez, Qiucheng Xu, Jordan Frow, Fabrizia Foglia, Keenan Smith, Ravikumar Ravikumar, Mohanraj Vinothkannan, Najet Mahmoudi, Ihtasham Salam, Arun Prakash Periasamy, Daniel K. Whelligan, Mohamed Mamlouk, Hungyen Lin, Brian Seger and John R. Varcoe*

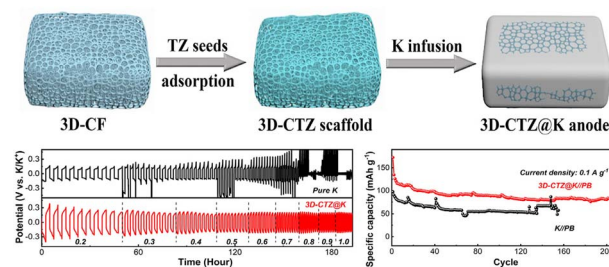


PAPERS

20741

Design of a potassiophilic 3D conductive scaffold potassium anode (3D-CTZ@K) with dendrite-free and high energy-power density in potassium metal batteries

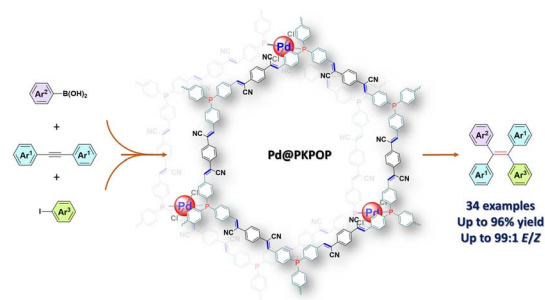
Dong-Ting Zhang, Mao-Cheng Liu,* Min-Peng Li, Hao Chen, Chen-Yang Li, Yu-Xia Hu, Ling-Bin Kong, Xiang-Yun Zhang, Bing-Ni Gu, Ming-Jin Liu, Kun Zhao, Jun-Qiang Ren, Zi-Zhou Yuan* and Yu-Lun Chueh*



20752

A phosphorus-based olefin linked fully conjugated polymeric ligand for palladium-catalyzed *trans*-selective dicarbofunctionalization of internal alkynes

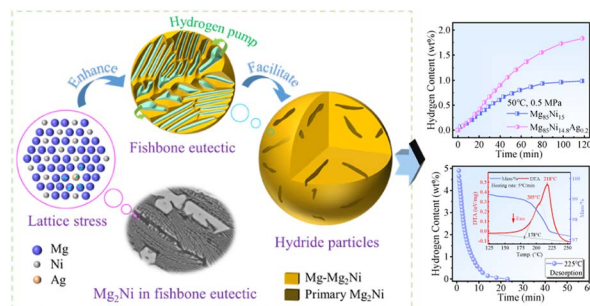
Pramod Kumar and Biplab Maji*



20761

Dual tuning of the de-/hydrogenation thermodynamics and kinetics of the Mg–Ni alloy by introducing the Ag–H bond: enhanced hydrogen storage properties at moderate temperatures

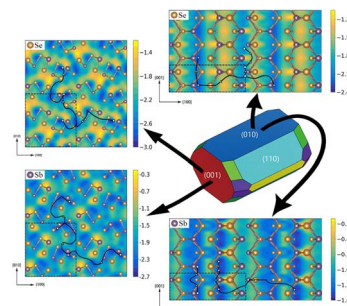
Wenchao Cao, Xin Ding,* Ruirun Chen,* Jiaxin Zhang, Yong Zhang, Jingjie Guo and Hengzhi Fu



20774

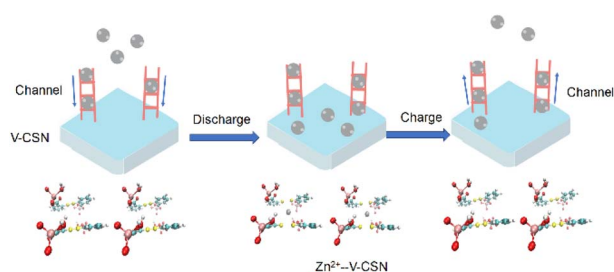
Theoretical studies on surface kinetics and growth properties of Sb₂Se₃ and Sb₂S₃

Xu-Jie Zhang, Jie Zhou and Da-Jun Shu*



PAPERS

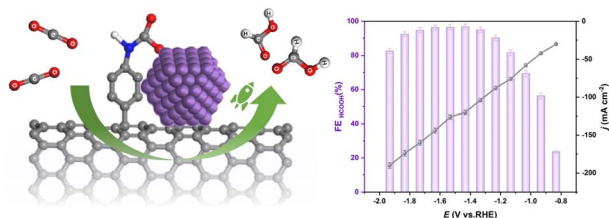
20786



A novel vanadium coordination supramolecular network with multiple active sites for ultra-durable aqueous zinc metal batteries

Shimei Lai, Zengren Tao, Jiawei Cui, Anding Wang, Yuanming Tan, Zhao Chen and Yangyi Yang*

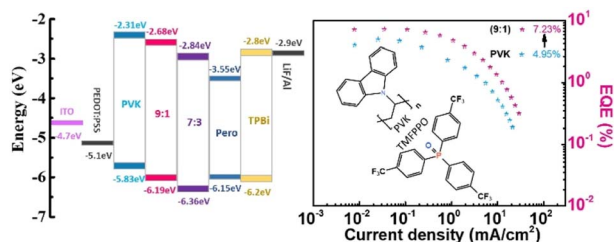
20796



Revealing the role of aniline in assisting SnO₂ electrocatalytic CO₂ reduction to HCOOH: via the perspective of the reaction pathway

Yuning Zhang, Hao Jiang, Kangpeng Wang, Dongfang Niu* and Xinsheng Zhang*

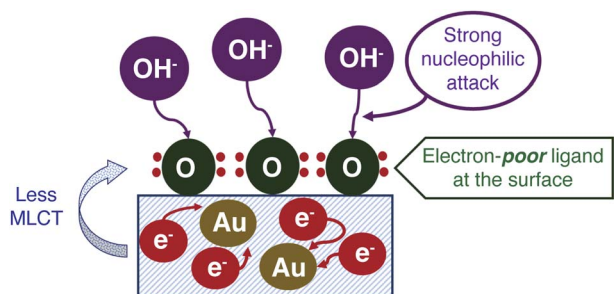
20808



Phosphine oxide modulator-ameliorated hole injection for blue perovskite light-emitting diodes

Xiangyang Fan, Yu Wang, Xinyu Shen,* Zhongkai Yu, Woo Hyeon Jeong, Ji Won Jang, Yeong Gyeong Kim, Seung-Je Woo, Hyungju Ahn, Hyosung Choi, Tae-Woo Lee, Sung Heum Park, Feng Gao and Bo Ram Lee*

20816



Probing the effect of metal to ligand charge transfer on the oxygen evolution reaction in Au incorporated Co(OH)₂ thin film electrocatalysts

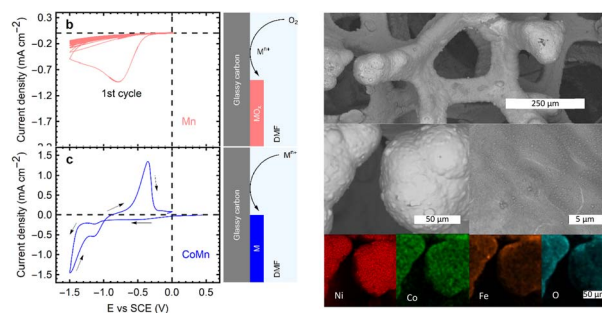
Rusha Kamar, Roland Agoston, Grant A. van Riessen, Gerard Hinsley, Anthony P. O'Mullane and Michael W. M. Jones*



20824

Self-limiting thin film deposition of amorphous metal oxides from aprotic solvents for oxygen evolution electrocatalysis

Rafael A. Prato M., Jan Fransaer and Xochitl Dominguez-Benetton*



20839

The synergistic chemical coupling of nanostructured MoS₂ with nitrogen-deficient 2-D triazine-based polymeric m-C₃N_x for efficient and selective CO₂ photocatalytic conversion to CO

Niharika Kumar, Rajashree P. Mishra, Bibek Dash, Sweta Bastia and Yatendra S. Chaudhary*

