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IN THIS ISSUE

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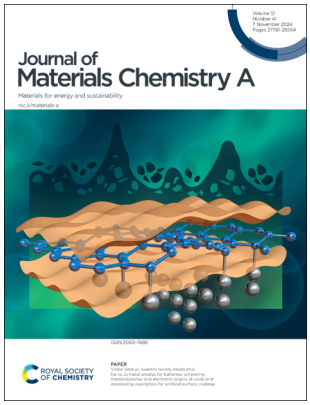

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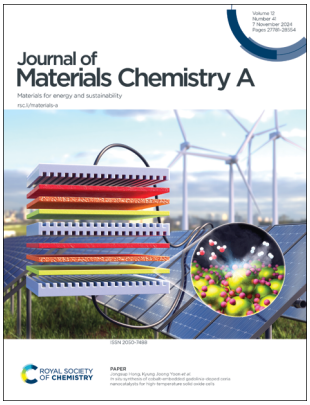
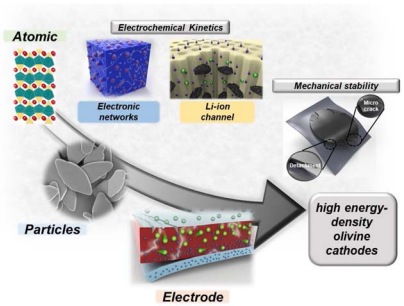
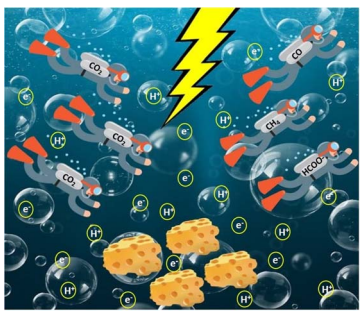
See Victor Venturi, Iwnetim Iwnetu Abate *et al.*, pp. 27987–28001. Image reproduced by permission of Iwnetim Abate from *J. Mater. Chem. A*, 2024, **12**, 27987.



Inside cover
See Jongsup Hong, Kyung Joong Yoon *et al.*, pp. 28002–28011. Image reproduced by permission of Kyung Joong Yoon from *J. Mater. Chem. A*, 2024, **12**, 28002.

REVIEWS





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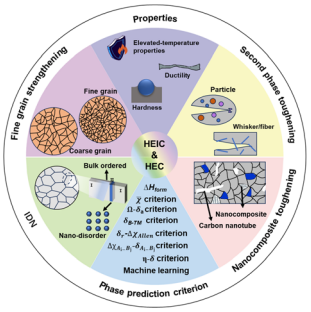

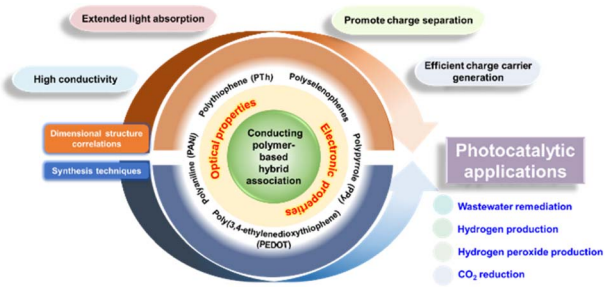

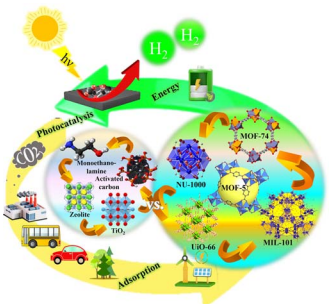

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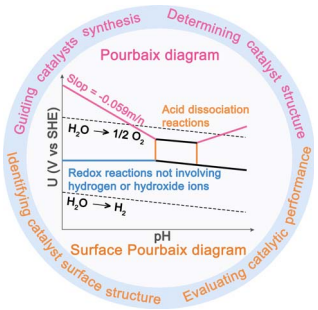

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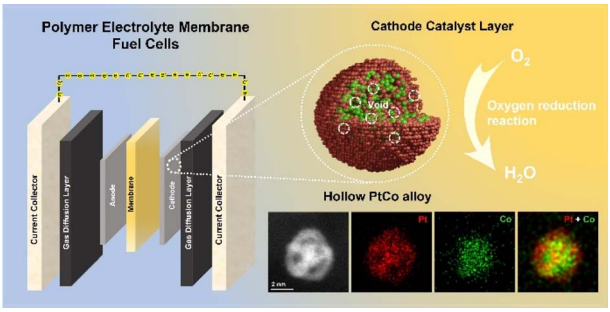

Hollow PtCo alloy nanostructures for efficient oxygen reduction electrocatalysis in polymer electrolyte membrane fuel cells

Muhammad Irfansyah Maulana, Ha-Young Lee, Caleb Gyan-Barimah, Jong Hun Sung and Jong-Sung Yu*

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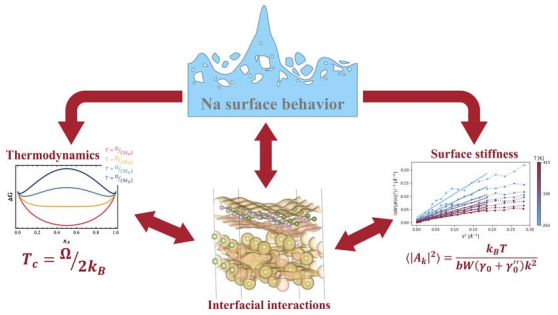
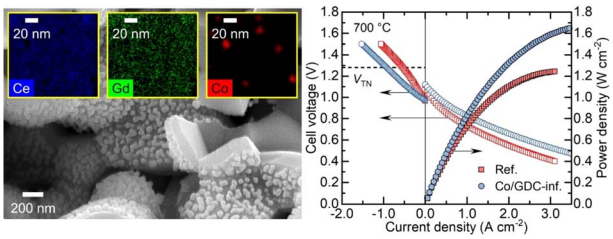


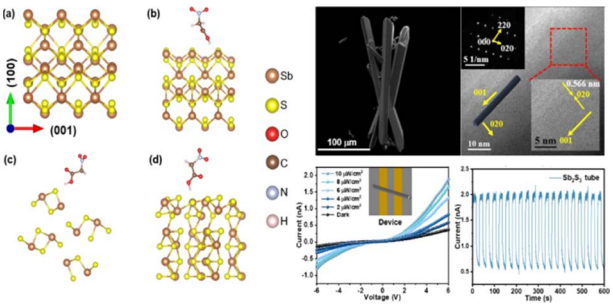
Na *vs.* Li metal anodes for batteries: unraveling thermodynamic and electronic origins of voids and developing descriptors for artificial surface coatings

Victor Venturi,* Rodrigo Freitas and Iwnetim Iwnetu Abate*



In situ synthesis of cobalt-embedded gadolinia-doped ceria nanocatalysts for high-temperature solid oxide cells

Hagyeong Cho, Haewon Seo, Jihong Min, Ji-eun Won, Jongsup Hong* and Kyung Joong Yoon*



Single-crystalline Sb_2S_3 microtubes for high-performance broadband visible photodetection

Shili Fu, Xiaohui Liu, Haoyun Dou, Rawaid Ali, Ao Zeng, Jiaxiu Man, Xiaolu Zheng* and Hong-En Wang*

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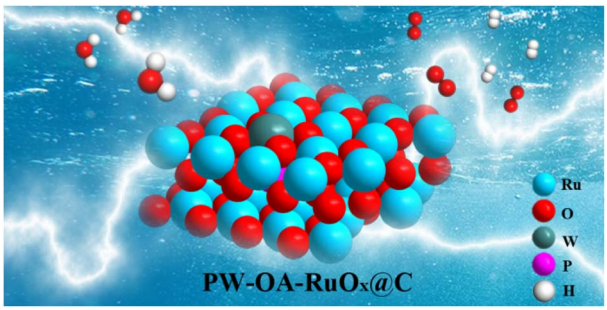

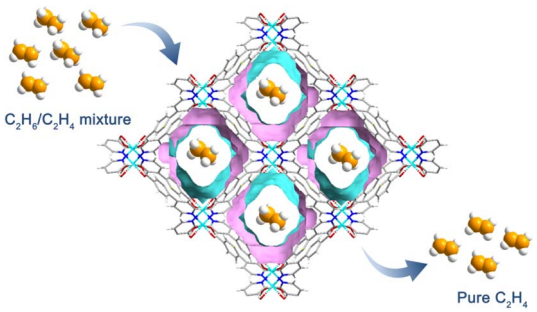

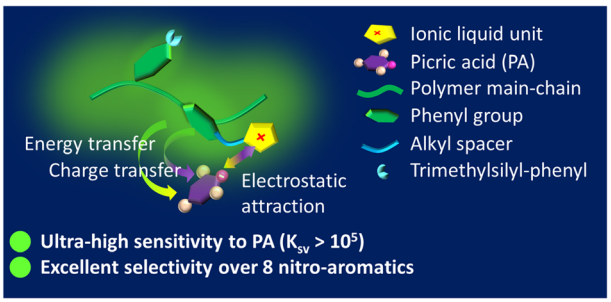

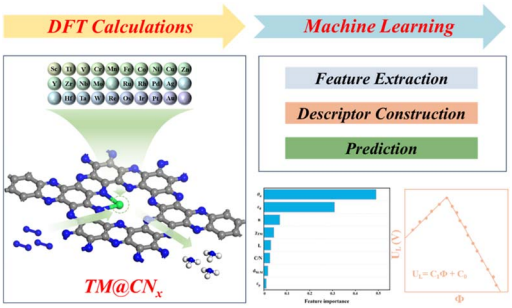

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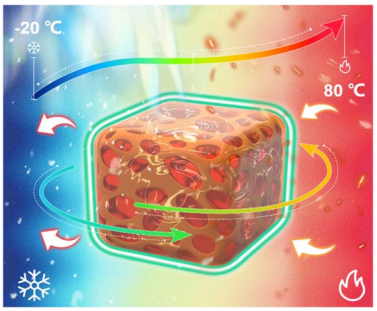

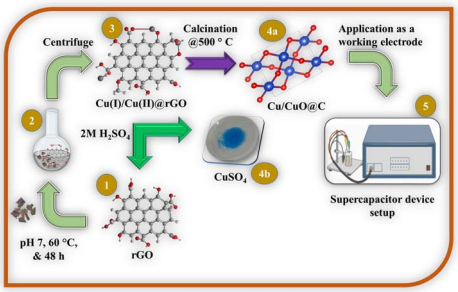

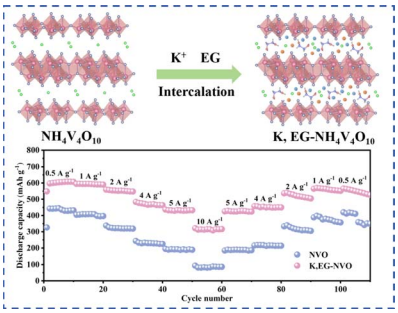

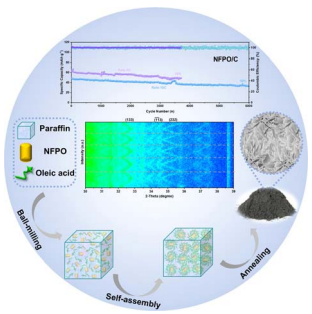

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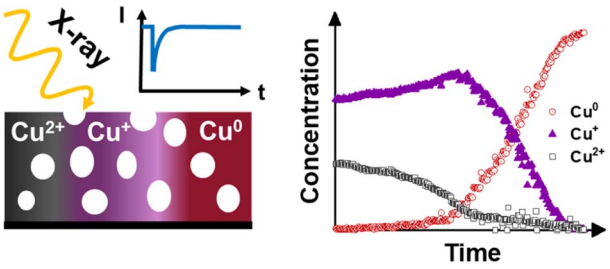

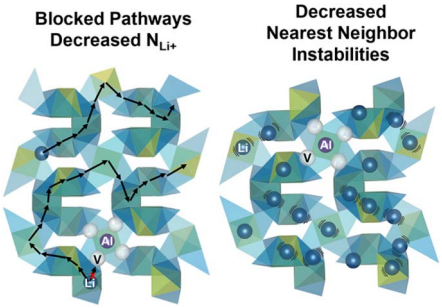

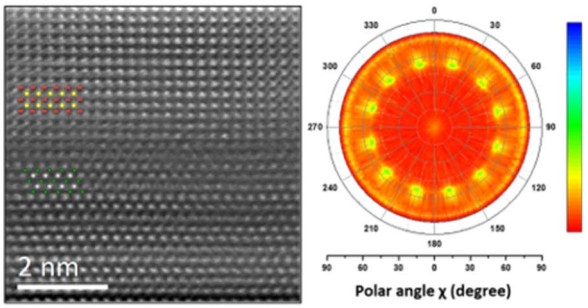

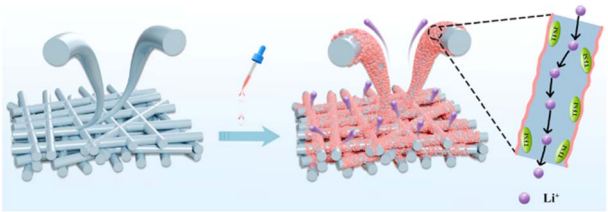

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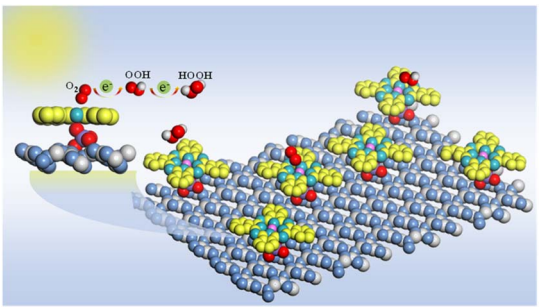
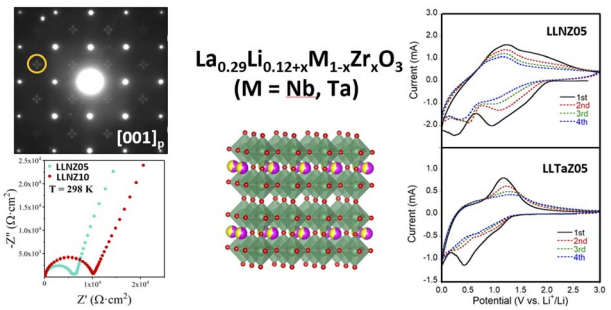
28233



Photoelectron "bridge" is introduced to realize the precise transport of C_3N_5-CoPc interface charge for efficient photocatalytic H_2O_2 production

Ruixin Chen, Wei Gan, Jun Guo, Yuqing Lu, Sheng Ding, Run Liu, Shouguo Wang, Miao Zhang,* Qingqing Yang* and Zhaoqi Sun*

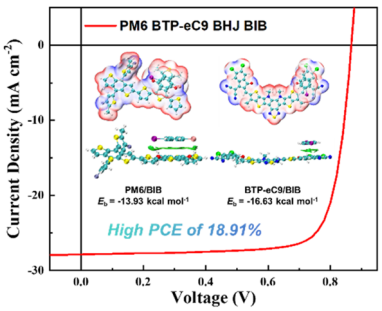
28247



In search of widening the electrochemical window of solid electrolytes for Li-batteries: the $La_{0.29}Li_{0.12+x}M_{1-x}Zr_xO_3$ (M = Nb, Ta) perovskite-type systems

Ester García-González, Rafael Marín-Gamero, Miguel Kuhn-Gómez, Alois Kuhn, Flaviano García-Alvarado and Susana García-Martín*

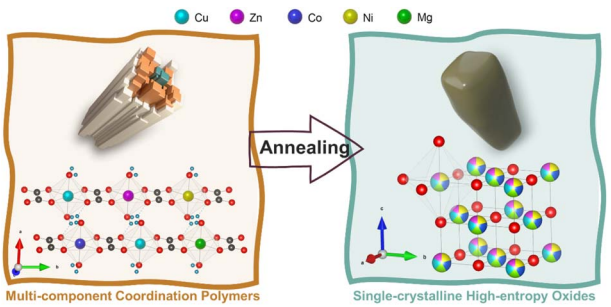
28254



Modulation of intermolecular interactions in the active layer enables highly efficient organic solar cells *via* introducing solid additives

Zhe Mei, Rong Li, Kun Li, Yishi Wu,* Yu Chen, Hua Geng,* Qing Liao, Cunbin An* and Hongbing Fu*

28263



Single-crystalline high-entropy oxide particles synthesized *via* coordination polymerization

Yuguang Pu, Zhen He,* Jiaming Liu, Tingxuan Yang, Hongliang Zhang, Saifang Huang, Hong Zhang,* Wen Zhang, Tianzu Yang, Puqi Jia,* Wei Gao and Peng Cao*

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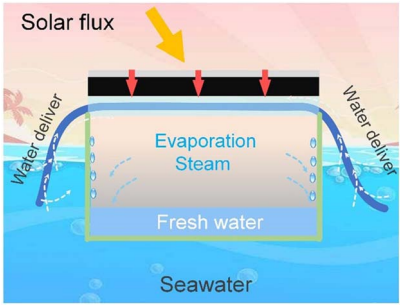

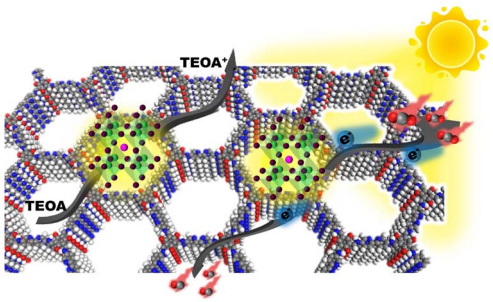

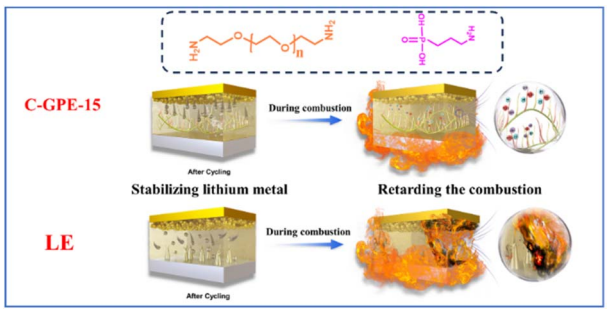

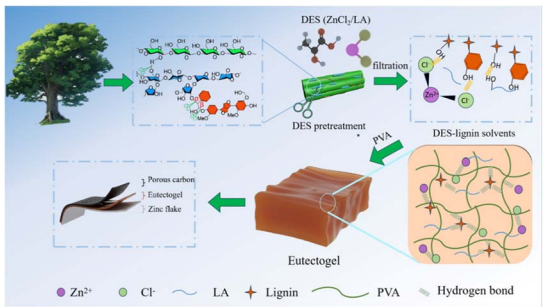

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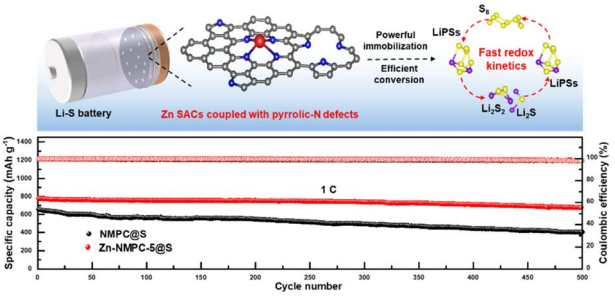
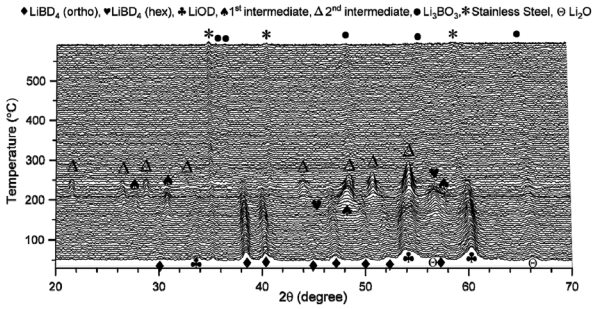


Embedding Zn single-atom catalysts into pyrrolic-N defect enriched multilayer carbon sheets boosts sulfur redox kinetics

Cuiying Lu, Xiaoting Wang, Songjie He, Siyu Liu, Pei Chen and Juan Yang*

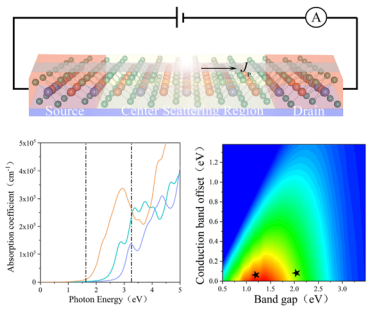
28326



Understanding the reaction pathway of lithium borohydride-hydroxide-based multi-component systems for enhanced hydrogen storage

Sweta Munshi,* Gavin S. Walker, Kandavel Manickam, Thomas Hansen, Martin Dornheim and David M. Grant

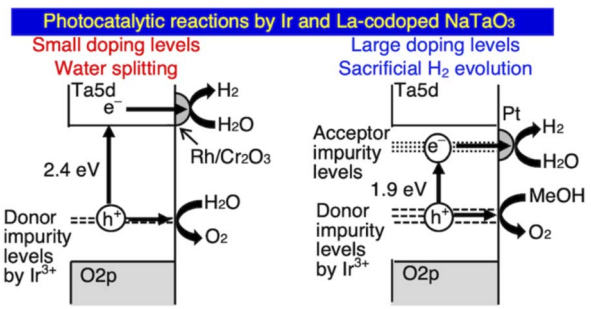
28337



Efficient absorption of Cu_2WX_4 (X = S, Se, and Te) for photovoltaic application: a theoretical study

Jiaxi Zhang, Zhenghao Li, Fengxiao Che, Chong Li, Kai Han* and Hongchao Yang*

28346



Overall water splitting under visible light irradiation over Ir and La-codoped $NaTaO_3$ photocatalysts

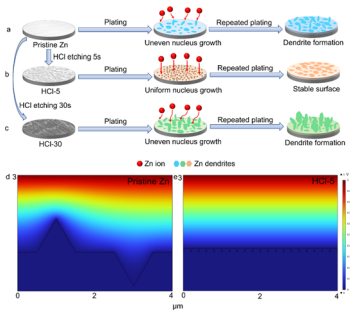
Akihide Iwase* and Taichi Sato

PAPERS

28353

Dendrite suppression by scalable acid treatment of zinc metal anodes for aqueous zinc-ion batteries

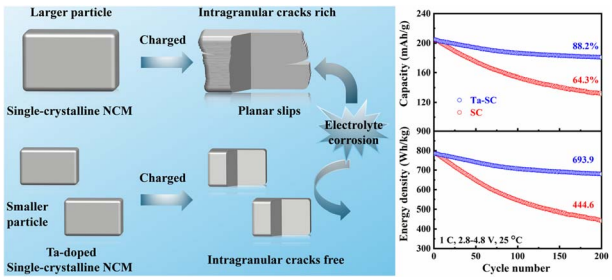
Huanlin Lyu, Suihan Cui, Chao Huang, Qingdong Ruan, Xiaolin Zhang, Junmin Xu, Fangyu Xiong,* Dan Li* and Paul K. Chu*



28363

Improved high-voltage cycling stability of single-crystalline $LiNi_{0.8}Co_{0.1}Mn_{0.1}O_2$ cathode by tantalum doping

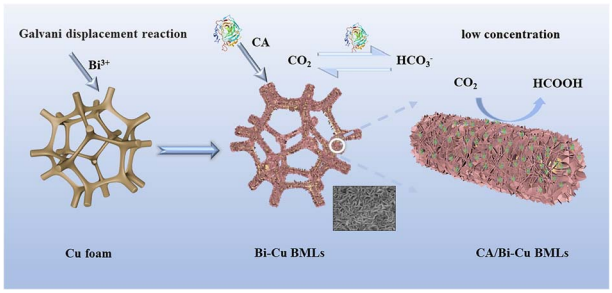
Bokai Cao, Hai-Tao Fang,* De Li* and Yong Chen*



28374

A Bi–Cu bimetallene array/carbonic anhydrase biohybrid for efficient and selective CO_2 electroreduction at low concentration

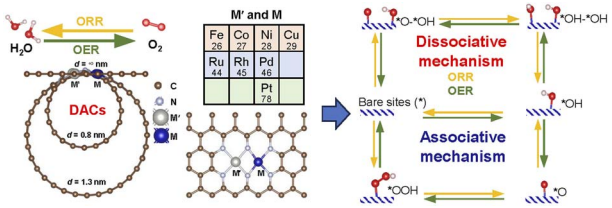
Minli Shu, Xuefang Zhu, Zhe Wang, Xue Xiao,* Shuni Li, Yu Chen* and Yucheng Jiang*



28381

DFT screening of dual-atom catalysts on carbon nanotubes for enhanced oxygen reduction reaction and oxygen evolution reaction: comparing dissociative and associative mechanisms

Xiangyi Zhou, Mohsen Tamtaji, Weijun Zhou, William A. Goddard III* and GuanHua Chen*



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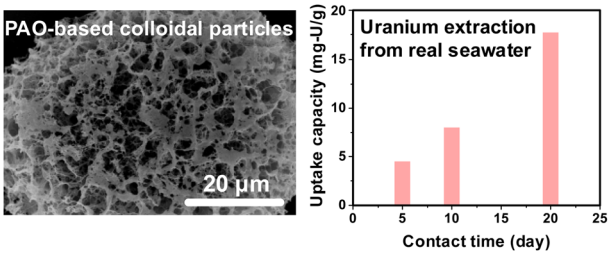
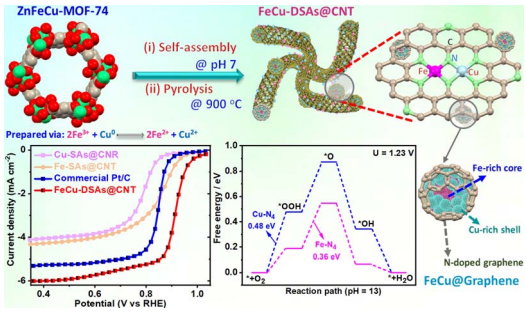
28390



Polyamidoxime-based colloidal particles with a 3D network for synergistic uranium extraction from seawater

You Huang, Shufen Zou, Shan Lin, Bing Na,* Zhuyao Li and Shuang Zhang

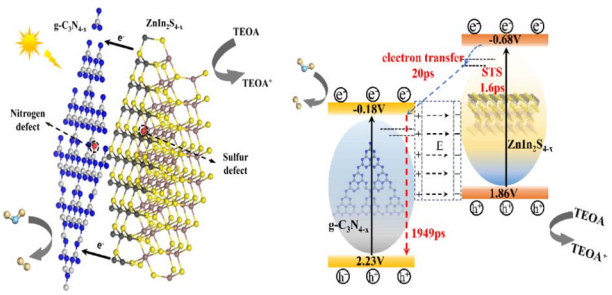
28398



Dual single-atom sites coupled with graphene-encapsulated core–shell Fe–Cu nanoalloy for boosting the oxygen reduction reaction

Katam Srinivas, Zhuo Chen, Anran Chen, He Huang, Chengtao Yang, Fei Wang,* Ming-qiang Zhu* and Yuanfu Chen*

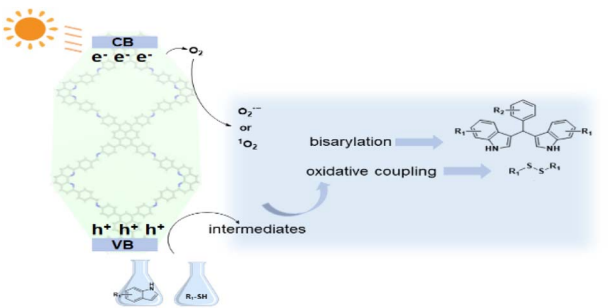
28414



Integrating dual-defects and the heterojunction in $ZnIn_2S_{4-x}$/g-C_3N_{4-x} composites induces breaking-symmetry for photocatalytic hydrogen production

Guoxi Zhou, Yige Qi, Yunchao Wu, Hou Wang, Zhiyong Yan and Yan Wu*

28424



A pyrenetetrayl/phenanthroline-based one-dimensional covalent organic framework for metal-free photocatalytic organic conversion

Longfei Wang, Longxin Wang, Qianrui Zhao, Xiaoming Ji, Mingqin Zhao,* Yujie Zhang* and Miao Lai*

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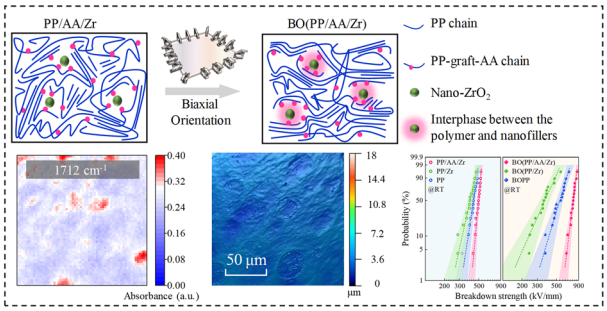

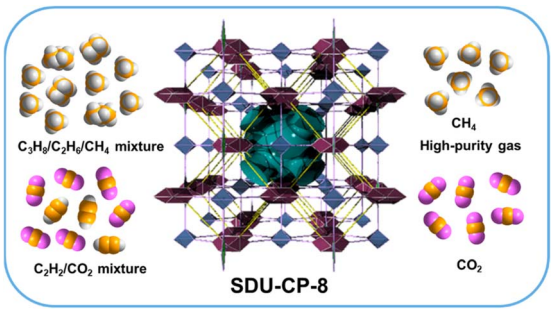

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