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Journal of Materials Chemistry A

Materials for energy and sustainability

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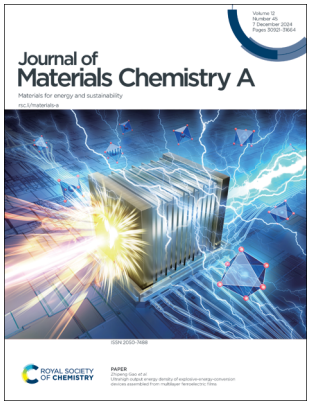

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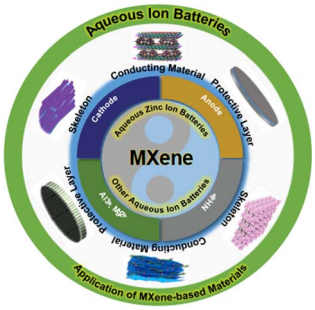
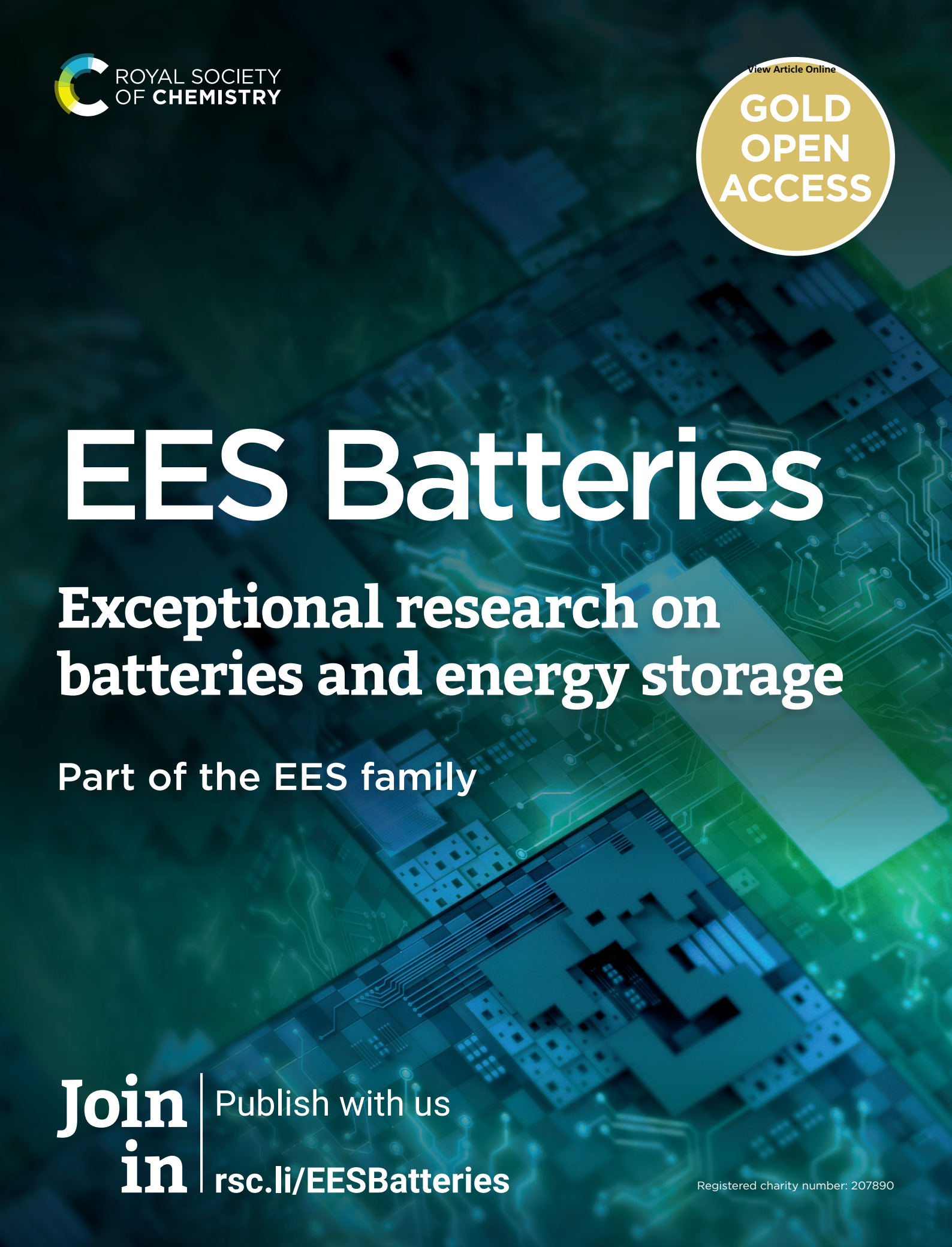
EDITORIAL

REVIEWS

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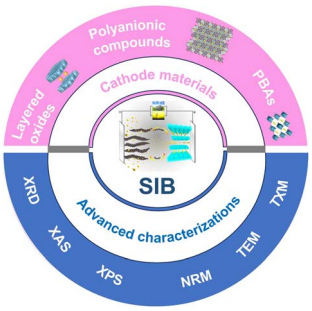

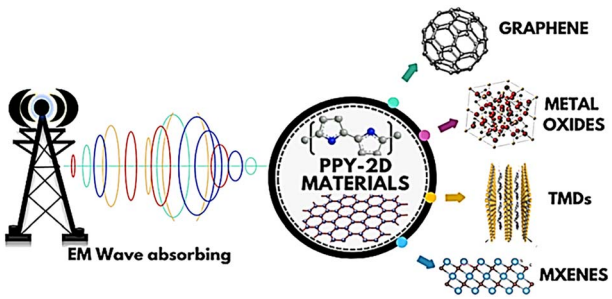

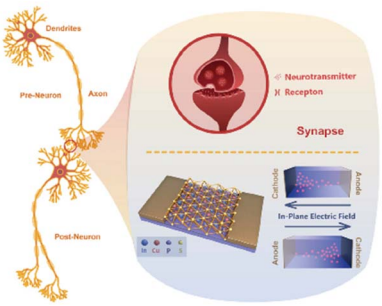

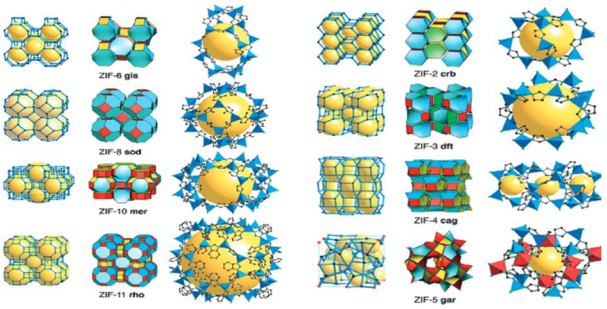

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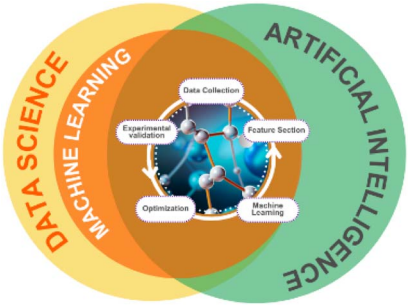

AI and ML for selecting viable electrocatalysts: progress and perspectives

Anastasiia P. Dmitrieva, Anna S. Fomkina, Chantal T. Tracey, Elizaveta A. Romanenko, Ali Ayati, Pavel V. Krivoshapkin and Elena F. Krivoshapkina*

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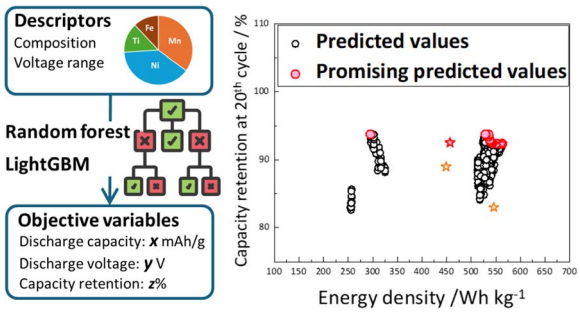
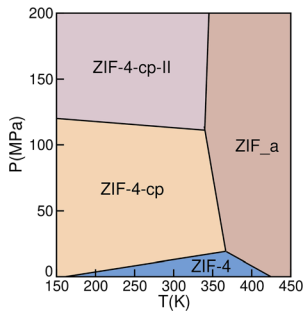


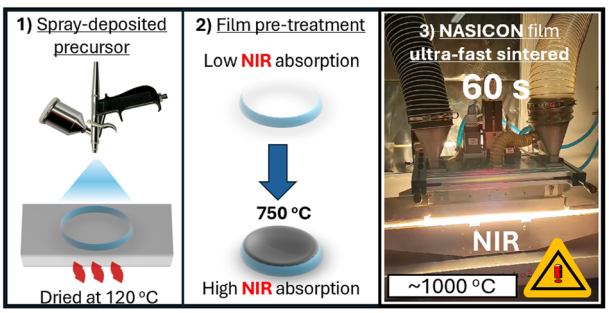
$Na[Mn_{0.36}Ni_{0.44}Ti_{0.15}Fe_{0.05}]O_2$ predicted *via* machine learning for high energy Na-ion batteries

Saaya Sekine, Tomooki Hosaka, Hayato Maejima, Ryoichi Tatara, Masanobu Nakayama and Shinichi Komaba*



Phase diagram of ZIF-4 from computer simulations

Emilio Méndez and Rocio Semino*



A new approach for obtaining ceramic NASICON ($Na_3Zr_2Si_2PO_{12}$) films sintered *in situ* by a sol–gel method, using spray deposition and near-infra red sintering

Rafael Marti Valls, Rebecca Griffin, Anne Sawhney, Celina Domingos-Dlofo, Tom Dunlop, Sam Reis, Peter J. Holliman and Jenny Baker*

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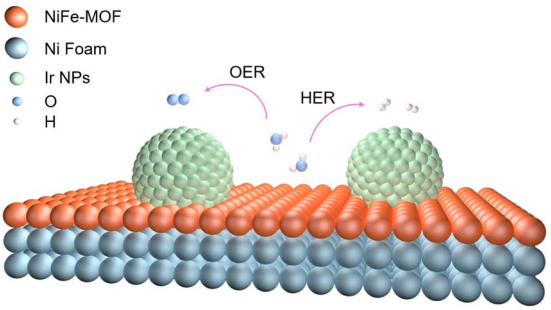

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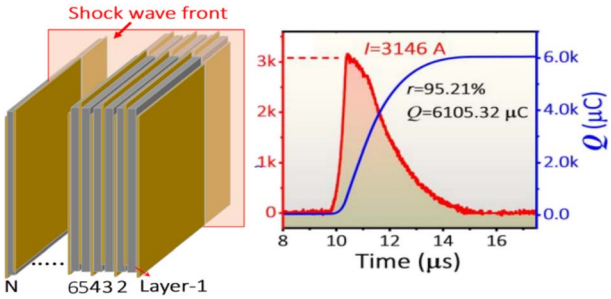

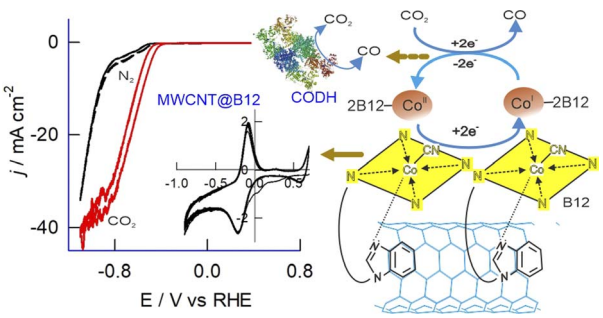

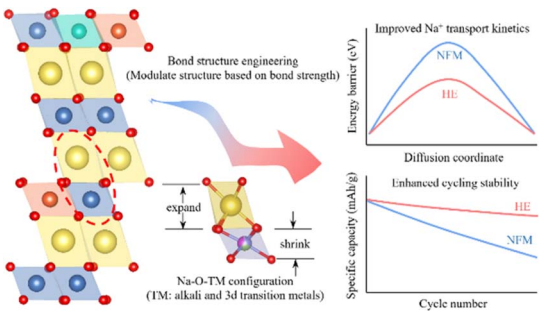

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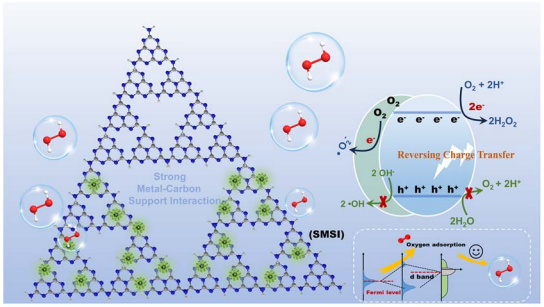

Strong metal–support interaction (SMSI) modulates d-orbital centers to promote oxygen reduction reaction

Zhangmeng Liu, Guiting Lin, Yayao Li, Runchao Zhou and Yunzhi Fu*

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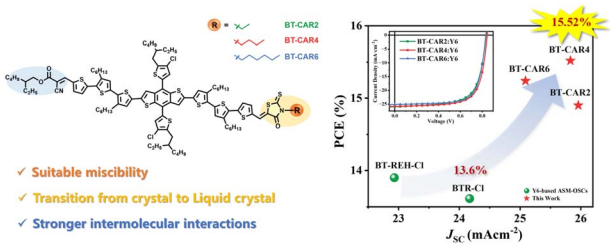

Asymmetric liquid crystalline donors with two different end groups enable efficient all-small-molecule organic solar cells

Chenhe Wang, Tianyi Chen, Shuixing Li,* Yecheng Shen, Jinyang Yu, Adiljan Wupur, Yongmin Luo, Mengting Wang, Xiukun Ye, Jiaying Wu, Minmin Shi* and Hongzheng Chen*

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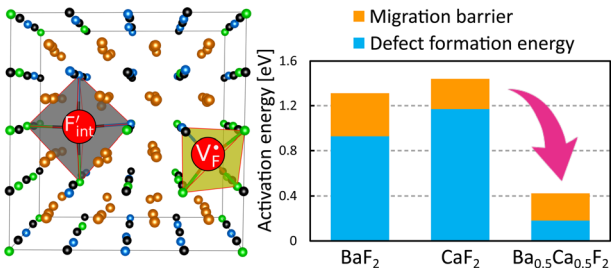

Point-defect chemistry for ionic conduction in solid electrolytes with isovalent cation mixing

Takafumi Ogawa,* Kazuyuki Sato, Kazuhiro Mori, Shunsuke Kobayashi, Hiroki Moriwake, Yuichi Ikuhara and Akihide Kuwabara

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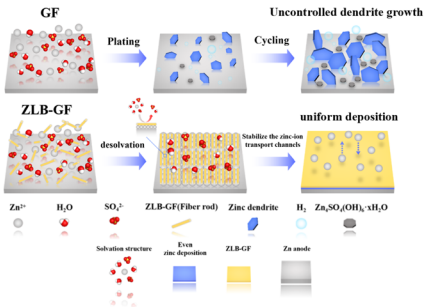

Zein improved GF separator for dendrite-free aqueous zinc-ion batteries

Bozhong Cao, Qian Qu, Bingchun Jiang, Tianyu Zou, Shubing Zhen, Peiwen Wang, Kairui Li, Jincheng Zhang, Hui Guo and Tong Zhang*

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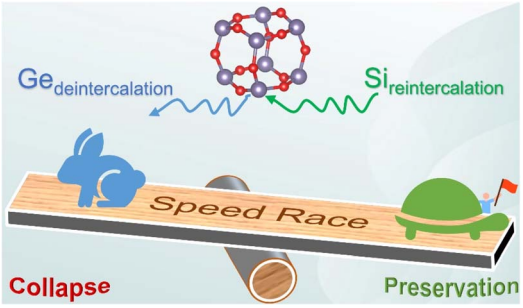

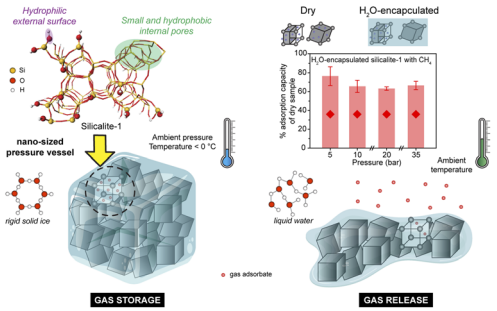

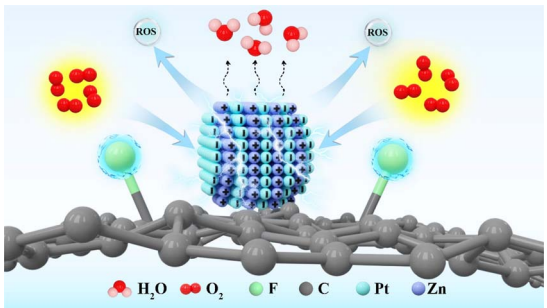

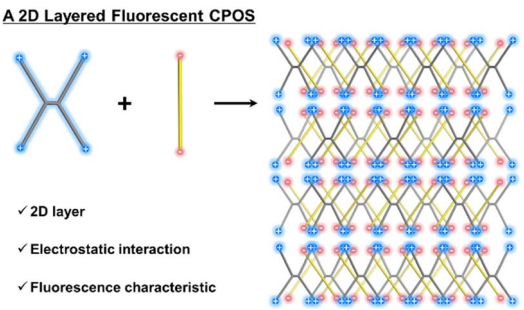

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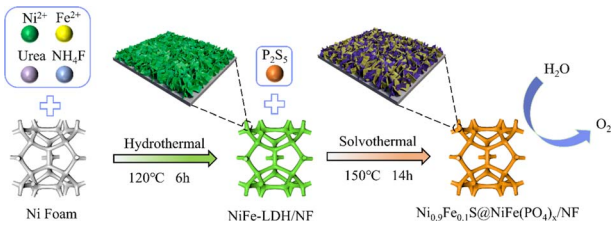

Iron-doped nickel sulfide@phosphate heterostructure nanosheets constructed from solvothermal P_2S_5 and layered double hydroxides for electrocatalytic oxygen evolution

Zeyi Wang, Shuling Liu,* Chenglong Wang, Dan Ren, Yanling Hu, Yujie Ma and Chao Wang*

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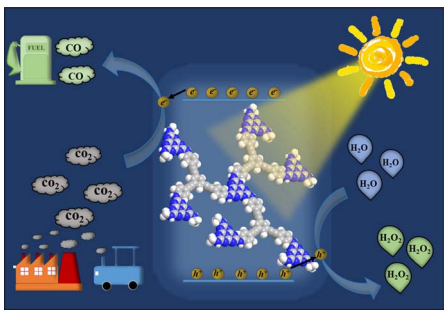

Molecular engineering of donor–acceptor heptazine-based porous organic polymers for selective photoreduction of CO_2 to CO under non-sacrificial conditions in water

Amit Kumar, Pravesh Kumar, Durgesh Pandey, Neha Saini, Kirti Dhingra, Dibyajyoti Ghosh and Kamalakannan Kailasam*

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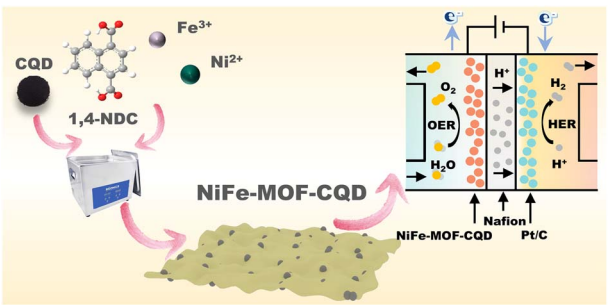

Carbon quantum dot-mediated binary metal–organic framework nanosheets for efficient oxygen evolution at ampere-level current densities in proton exchange membrane electrolyzers

Qianjia Ni, Shiyuan Zhang, Kang Wang, Huazhang Guo, Jiye Zhang, Minghong Wu and Liang Wang*

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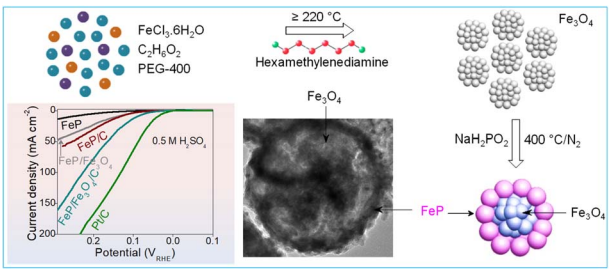

Ultrathin carbon layer-coated mesoporous core–shell-type $FeP/Fe_2O_3/C$ for the hydrogen evolution reaction

Alaaldin Adam, María Isabel Díez-García, Joan Ramon Morante, Muhammad Ali, Zijin Chen, Ziqi Tian and Mohammad Qamar*

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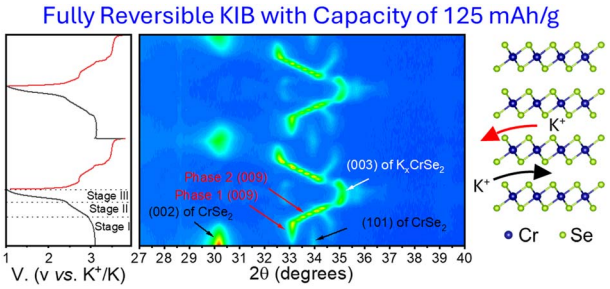
Reversible K-ion intercalation in $CrSe_2$ cathodes for potassium-ion batteries: combined *operando* PXRD and DFT studies

Weihao Li, Johannes Döhn, Jinyu Chen, Manuel Dillenz, Mohsen Sotoudeh, David M. Pickup, Shunrui Luo, Ryan Parmenter, Jordi Arbiol, Maria Alfredsson, Alan V. Chadwick, Axel Groß, Maider Zarrabeitia* and Alexey Y. Ganin*



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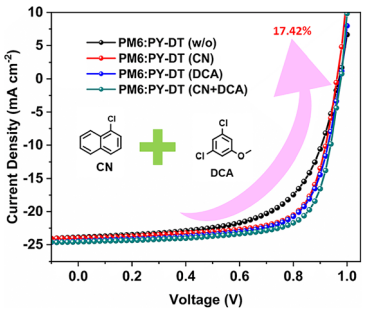
High performance all-polymer solar cells enabled with solvent and solid dual additives

Misbah Sehar Abbasi, Congqi Li, Jinhua Gao, Siying Wang, Sixuan Wang, Qijie Lin, Gening Xie, Saqib Nawaz Khan, Jianqi Zhang, Xin Zhang, Yunhao Cai* and Hui Huang*



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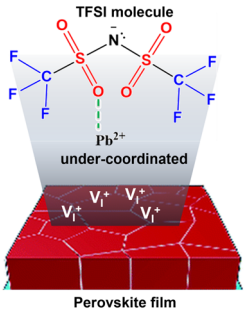
Influence of TFSI post-treatment on surface doping and passivation of lead halide perovskites

Konstantina Gkini, Spyros Orfanoudakis, Filippos Harlaftis, Panagiotis Dallas, Christos Kouzios, Polychronis Tsipas, Athanassios G. Kontos, Maria Konstantakou and Thomas Stergiopoulos*



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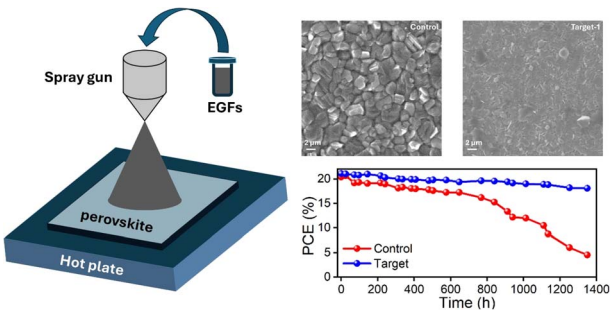
Stable perovskite solar cells with exfoliated graphite as an ion diffusion-blocking layer

Abdullah S. Alharbi, Miqad S. Albishi, Temur Maksudov, Tariq F. Alhuwaymel, Chrysa Aivalioti, Kadi S. AlShebl, Naif R. Alshamrani, Furkan H. Isikgor, Mubarak Aldosari, Majed M. Aljomah, Konstantinos Petridis, Thomas D. Anthopoulos, George Kakavelakis* and Essa A. Alharbi*



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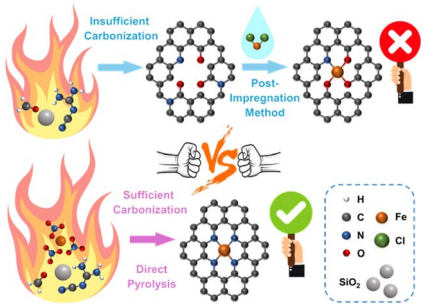

Comparing direct pyrolysis and post-impregnation in the synthesis of atomic Fe active sites for solvent-free aerobic coupling of benzylamine

Guilong Lu, Zewen Shen, Philipp Schwiderowski, Jannik Böttger, Tim Herrendorf, Wolfgang Kleist, Xiaoyu Li, Guixia Zhao, Baoxiang Peng, Xiubing Huang* and Martin Muhler*

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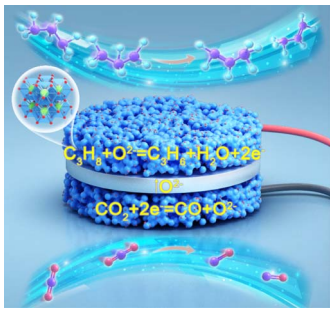

Electrochemical oxidative dehydrogenation of propane to propylene in an oxygen-ion conducting solid oxide electrolyzer

Cong Luo, Jiaming Ma, Lingting Ye* and Kui Xie*

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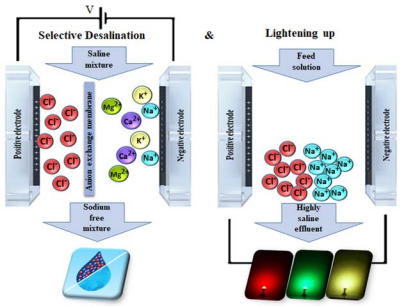

Towards an advanced electrochemical horizon: ion selectivity and energy harnessing through hybrid capacitive deionization with carbon-coated $NaTi_2(PO_4)_3$ and N-rich carbon nests

Hanieh Sharifpour, Farzaneh Hekmat,* Saeed Shahrokhian* and Likun Pan

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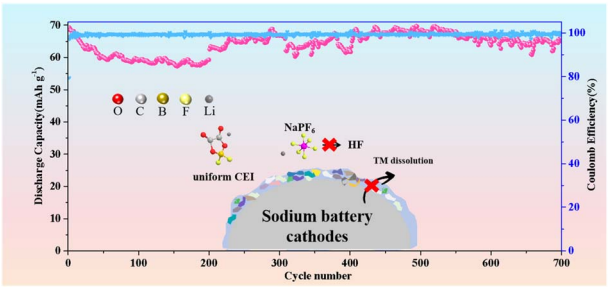

Construction of a stable interface at the $Na_{0.67}Ni_{0.33}Mn_{0.67}O_2$ cathode using LiDFOB electrolyte additives for high-performance sodium-ion batteries

Siyao Li, Hui Xu,* Yuanqiang Zhu, Ziwei Yang, Yuanhai Bao and Yong Chen*

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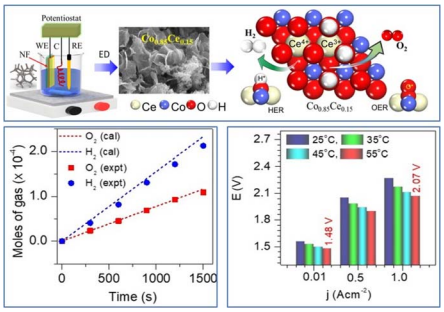
Cobalt oxide/cerium oxide heterogeneous interfaces as advanced durable and bifunctional electrocatalysts for robust industrially relevant overall water splitting

Akbar I. Inamdar,* Amol S. Salunke, Jun Ho Seok, Harish S. Chavan, Nabeen K. Shrestha, Sang Uck Lee,* Sangeun Cho* and Hyunsik Im



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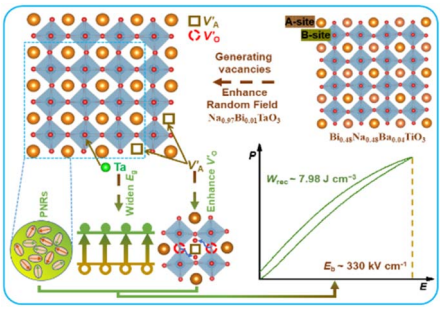
Excellent low-field energy storage properties and high density achieved in $Bi_{0.48}Na_{0.48}Ba_{0.04}TiO_3$-based oxide ceramics *via* interposing $(Na_{0.97}Bi_{0.01})^{+}/Ta^{5+}$ at A/B sites

Jiwei Du, Tianhui Shi, Qin Feng,* Ronghao Jia, Jianan Hu, Changlai Yuan,* Xinpeng Wang, Xiyong Chen, Nengneng Luo and Jiwei Zhai*



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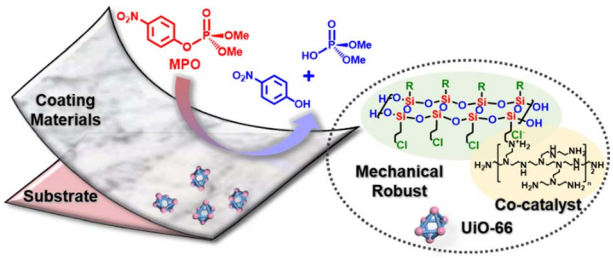
Robust surface coating materials for chemical warfare agent simulant detoxification using ladder-like poly(silsesquioxane) and metal–organic framework composites

Seungjae Lee, Seungjae Hur, Keunhong Jeong, Hoesun Hwang, Jungkyu Choi, Nithima Khaorapapong, Kyung-Youl Baek, Jin Young Seo,* Yusuke Yamauchi and Jongbeom Na*



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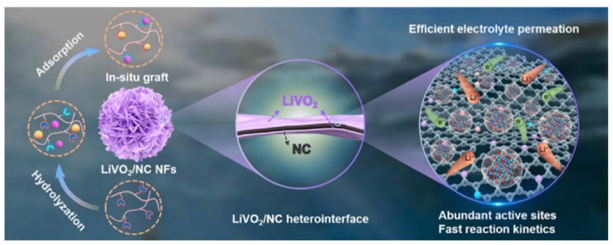
Flower-like carbon-confined disordered rock-salt $LiVO_2$ anode with a sandwich structure for fast charging and stable lithium storage

Sicong Shen, Bing Sun,* Xiaomeng Bai, Song Yang, Dongmei Zhang, Cunyuan Pei, Pengju Li and Shibing Ni*



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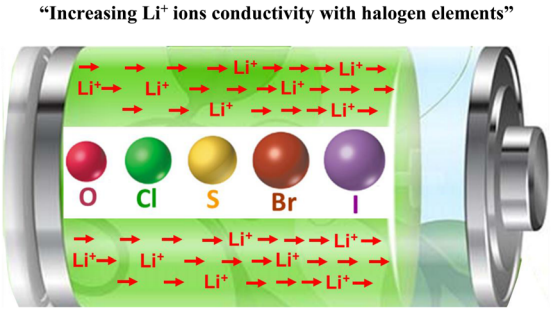
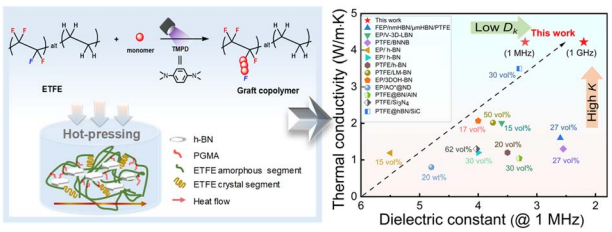


Incorporation of halogens (Cl, Br, and I) in an Li–P–S–O system for exploring new sulfide solid electrolytes with high conductivity and superior electrochemical performance in solid-state batteries

Hari Raj, Audric Neveu, Christian Jordy, Vincent Pelé and Valerie Pralong*

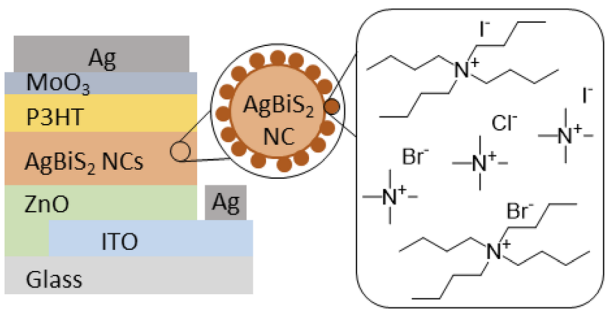
31424



Optimizing thermal and dielectric properties of ethylene-tetrafluoroethylene (ETFE)/h-BN composites *via* interface engineering: activation of C–F bonds on ETFE for surface grafting

Miao Wang, Yijin He, Xiaoyu Yang, Xuhui Hou, Wenxuan Li, Shaobo Tan* and Zhicheng Zhang*

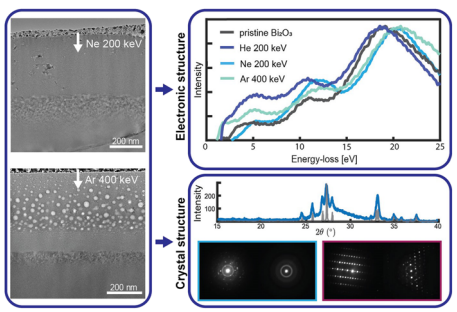
31432



Effect of different halide-based ligands on the passivation and charge carrier dynamics in $AgBiS_2$ nanocrystal solar cells

Fiona Treber, Elke De Grande, Ute B. Cappel and Erik M. J. Johansson*

31445



Insights into defect kinetics, mass transport, and electronic structure from spectrum effects in ion-irradiated Bi_2O_3

Ellis Rae Kennedy,* James A. Valdez, Yongqiang Wang, Stephanie M. Ribet, Kurt E. Sickafus, Cortney R. Kreller, Blas Pedro Uberuaga and Benjamin K. Derby

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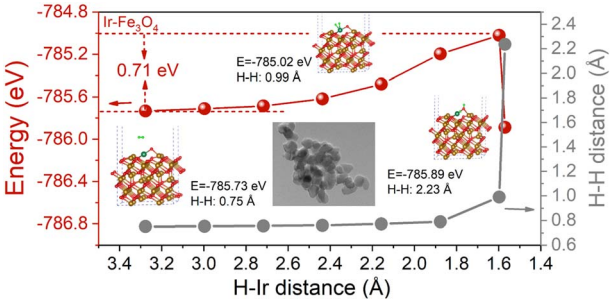

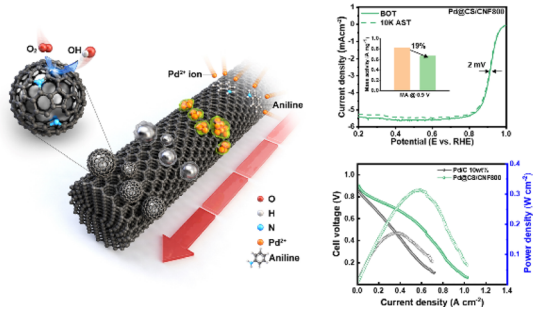

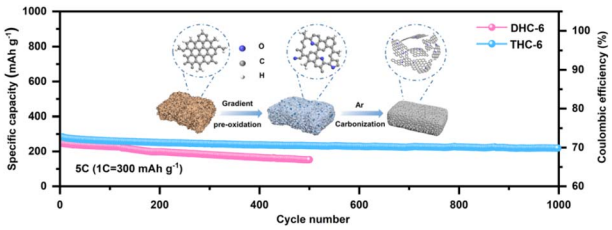

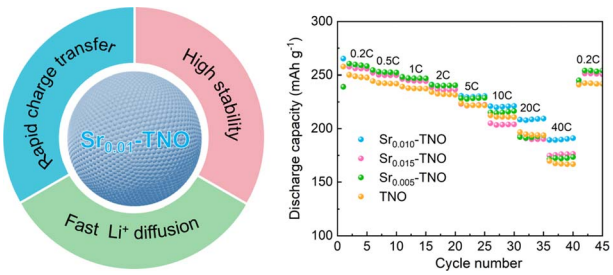

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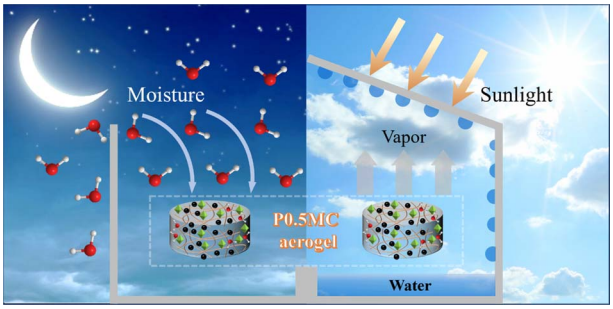

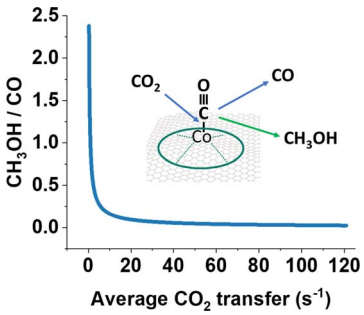

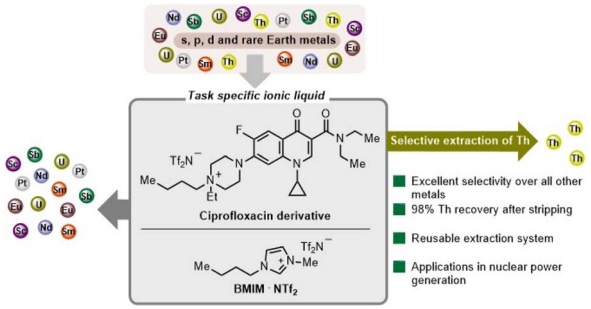

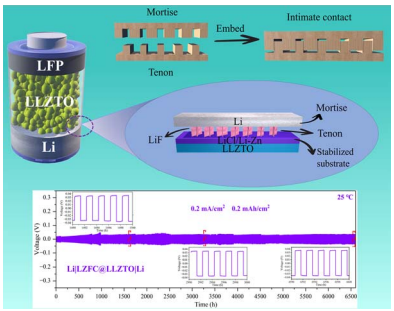

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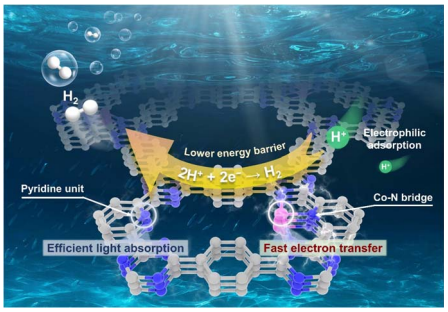

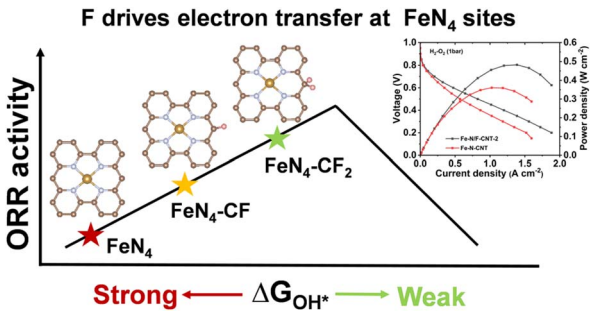

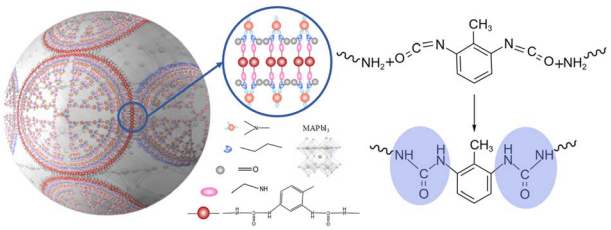

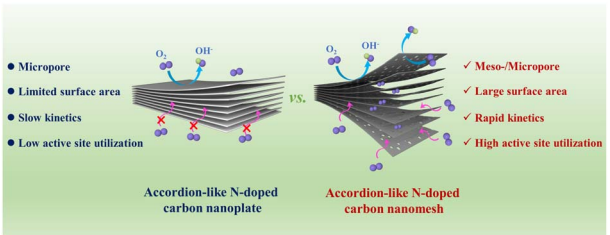

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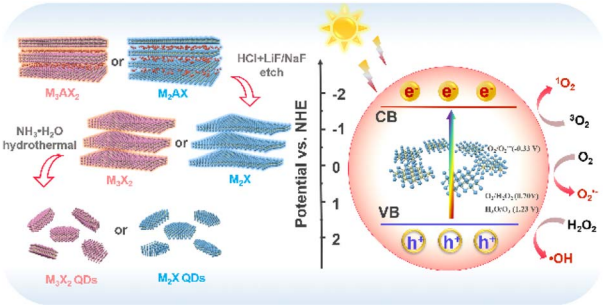

Outstanding ROS generation ability and the mechanism of MXene quantum dots

Danyang Xiao, Chunxiao Wu, Bufeng Liang, Shangzuo Jiang, Jianxiong Ma* and Yan Li*

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