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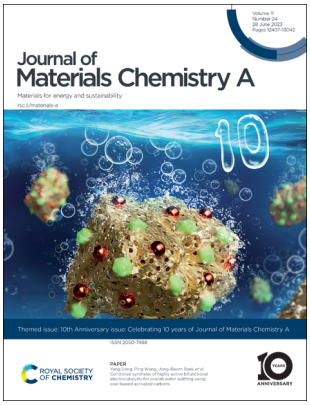

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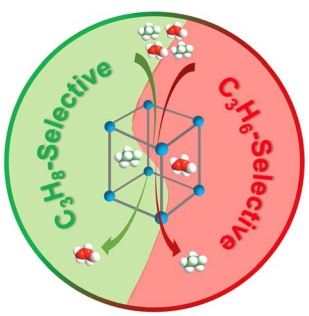
Feng Xie, Hao Wang* and Jing Li*



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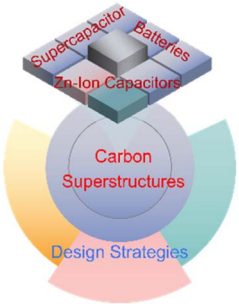
Versatile carbon superstructures for energy storage

Ziyang Song, Ling Miao, Yaokang Lv, Lihua Gan* and Mingxian Liu*



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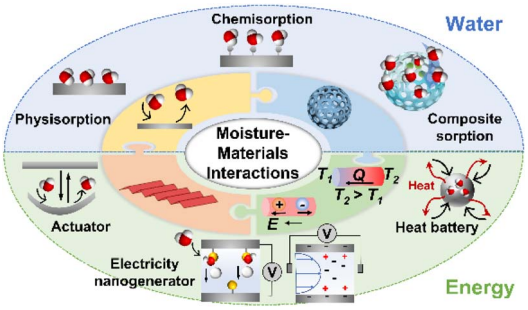
Advances in harvesting water and energy from ubiquitous atmospheric moisture

Wanheng Lu, Wei Li Ong and Ghim Wei Ho*



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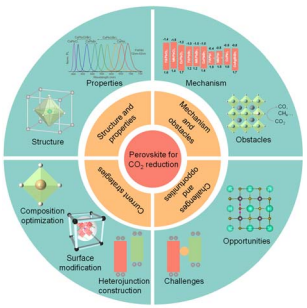
Halide perovskite quantum dots for photocatalytic CO_2 reduction

Wentao Song, Guobin Qi and Bin Liu*



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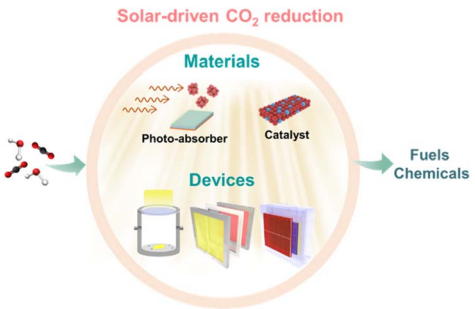
Solar driven CO_2 reduction: from materials to devices

Lili Wan, Rong Chen, Daniel Wun Fung Cheung, Linxiao Wu and Jingshan Luo*



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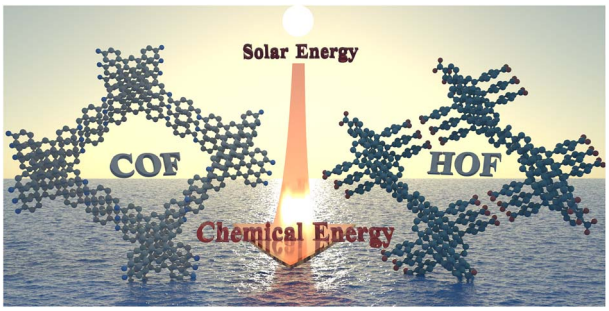

Covalent organic framework and hydrogen-bonded organic framework for solar-driven photocatalysis

Wei-Kang Qin, Chen-Ho Tung and Li-Zhu Wu*

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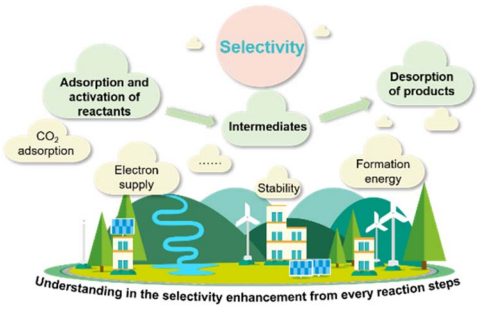

Highly selective semiconductor photocatalysis for CO_2 reduction

Shan Yao, Jiaqing He, Feng Gao, Haowei Wang, Jiahui Lin, Yang Bai, Jingyun Fang, Feng Zhu, Feng Huang and Mengye Wang*

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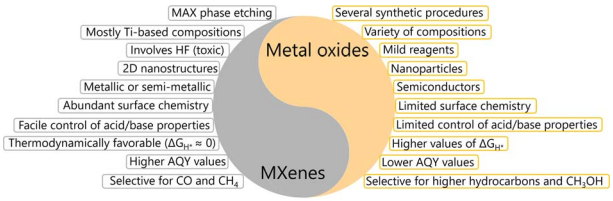

A comparative overview of MXenes and metal oxides as cocatalysts in clean energy production through photocatalysis

Mahesh M. Nair, Alexandra C. Iacoban, Florentina Neaţu, Mihaela Florea* and Ştefan Neaţu*

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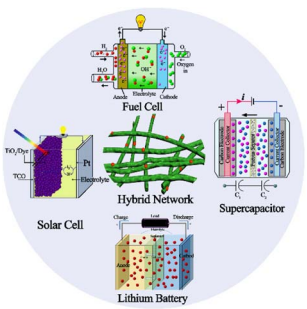

Hybrid polymer gels for energy applications

Arun K. Nandi* and Dhruba P. Chatterjee

REVIEWS

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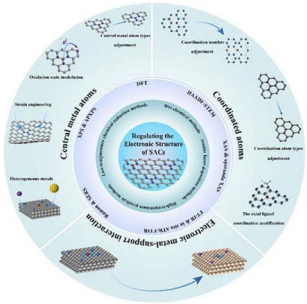
Regulating the electronic structure of single-atom catalysts for electrochemical energy conversion

Wei Ma,* Zhe Deng, Xinjie Zhang, Zhang Zhang and Zhen Zhou*



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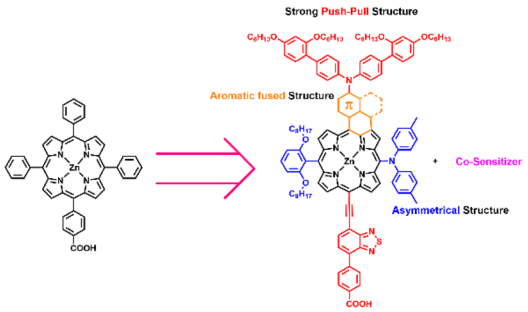
Molecular designs, synthetic strategies, and properties for porphyrins as sensitizers in dye-sensitized solar cells

Yuzhe Zhang, Tomohiro Higashino* and Hiroshi Imahori*



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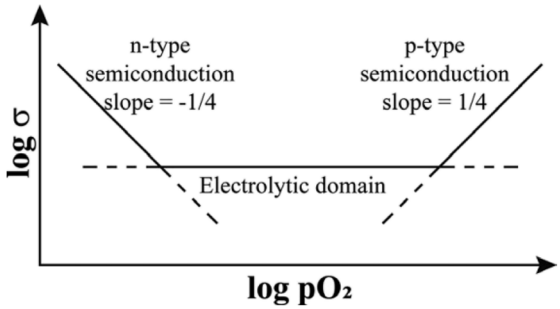
Redox-active oxygen in oxides: emergent applications, including field-induced resistive switching, flash luminescence, p–n junctions and high capacity battery cathodes

Anthony R. West*



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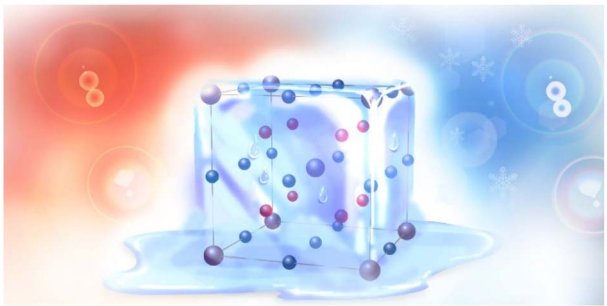
Yuichi Shimakawa* and Yoshihisa Kosugi



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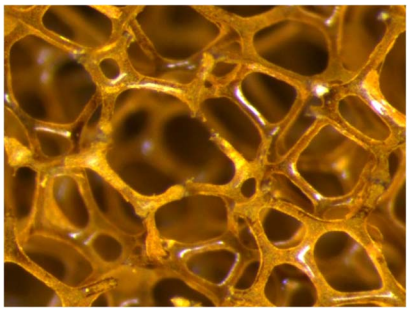

Urethane functions can reduce metal salts under hydrothermal conditions: synthesis of noble metal nanoparticles on flexible sponges applied in semi-automated organic reduction

Olivier Gazil, Johannes Bernardi, Arthur Lassus, Nick Virgilio and Miriam M. Unterlass*

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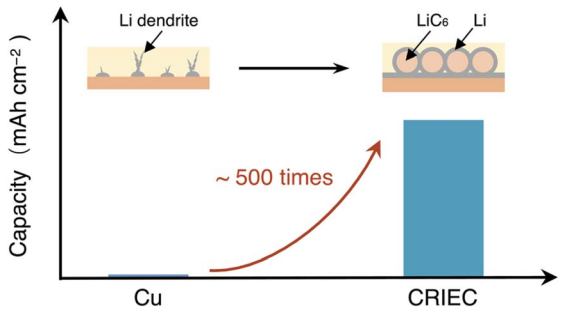

High-areal-capacity anode-free all-solid-state lithium batteries enabled by interconnected carbon-reinforced ionic-electronic composites

Wen-Ze Huang, Ze-Yu Liu, Pan Xu, Wei-Jin Kong, Xue-Yan Huang, Peng Shi, Peng Wu, Chen-Zi Zhao,* Hong Yuan, Jia-Qi Huang and Qiang Zhang*

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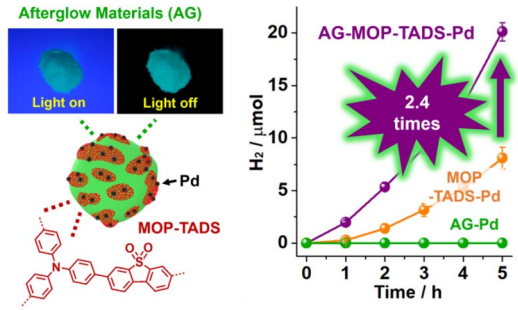

Enhanced photocatalytic hydrogen production of microporous organic polymers by incorporation of afterglow phosphorescent materials

Sang Hyun Ryu, Gye Hong Kim, Tae Kyu Ahn,* Kyoung Chul Ko* and Seung Uk Son*

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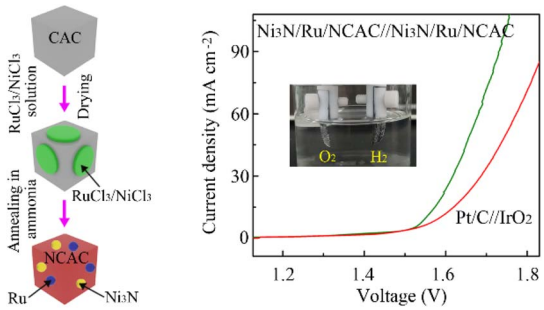

Controlled synthesis of highly active bifunctional electrocatalysts for overall water splitting using coal-based activated carbons

Xianglong Zhao, Xinghua Yong, Qizhe Ji, Zhenghua Yang, Yang Song,* Yiqiang Sun, Zhengyang Cai, Jingcheng Xu, Luyan Li, Shuhua Shi, Feiyong Chen, Cuncheng Li, Ping Wang* and Jong-Beom Baek*

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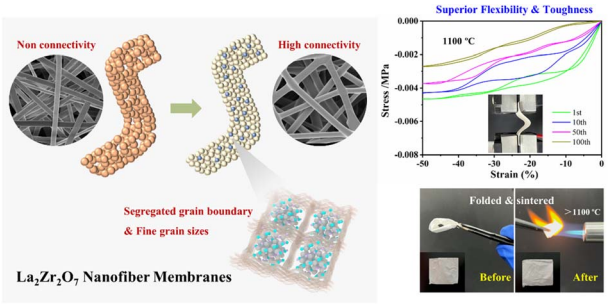
An *in situ* hyperconnective network strategy to prepare lanthanum zirconate nanofiber membranes with superior flexibility and toughness

Nana Xu, Xiaoshan Zhang, Haiyan Liu, Hui Xu, Shuang Wu, Bing Wang* and Yingde Wang*



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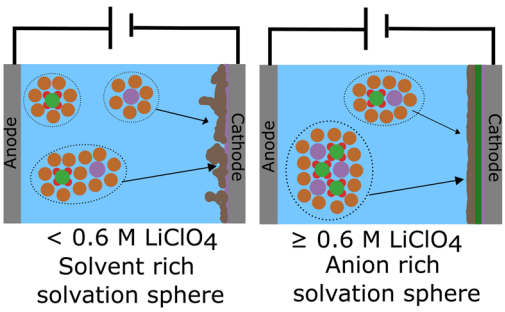

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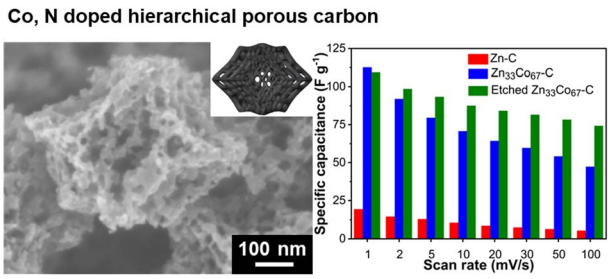
Enlarging the porosity of metal–organic framework-derived carbons for supercapacitor applications by a template-free ethylene glycol etching method

Ruijing Xin, Minjun Kim,* Ping Cheng, Aditya Ashok, Silvia Chowdhury, Teahoon Park, Azhar Alowasheeir, Md. Shahriar Hossain, Jing Tang, Jin Woo Yi,* Yusuke Yamauchi, Yusuf Valentino Kaneti* and Jongbeom Na*



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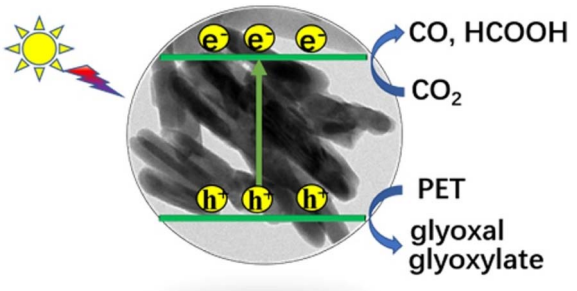
Modulating oxygen vacancy concentration on $Bi_4V_2O_{11}$ nanorods for synergistic photo-driven plastic waste oxidation and CO_2 reduction

Mengping Liu, Yu Xia, Wen Zhao, Ruiyi Jiang, Xin Fu, Brittney Zimmerle, Lihong Tian* and Xiaobo Chen*



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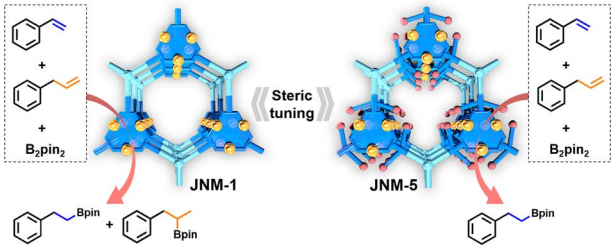

Tailoring stability, catalytic activity and selectivity of covalent metal–organic frameworks *via* steric modification of metal nodes

Haiyan Duan, Xu Chen, Yi-Nan Yang, Jianping Zhao, Xiao-Chun Lin, Wen-Jing Tang, Qiang Gao, Guo-Hong Ning* and Dan Li*

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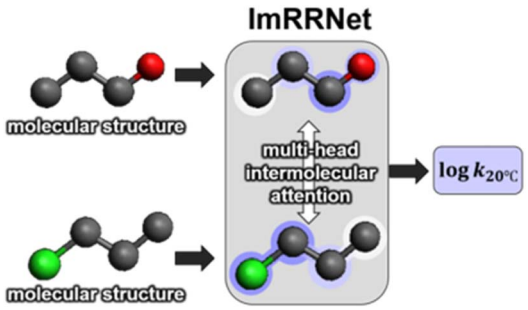

An artificial neural network using multi-head intermolecular attention for predicting chemical reactivity of organic materials

Jaekyun Yoo, Byunghoon Kim, Byungju Lee, Jun-hyuk Song and Kisuk Kang*

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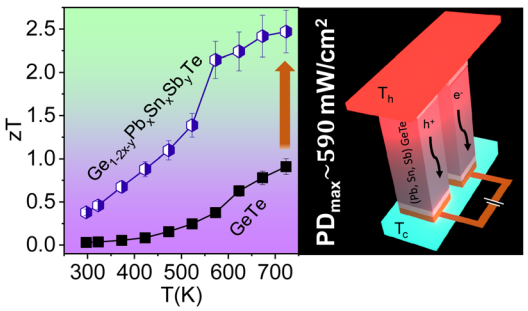

High thermoelectric performance in entropy-driven $Ge_{1-2x-y}Pb_xSn_xSb_yTe$

Animesh Das, Paribesh Acharyya, Subarna Das and Kanishka Biswas*

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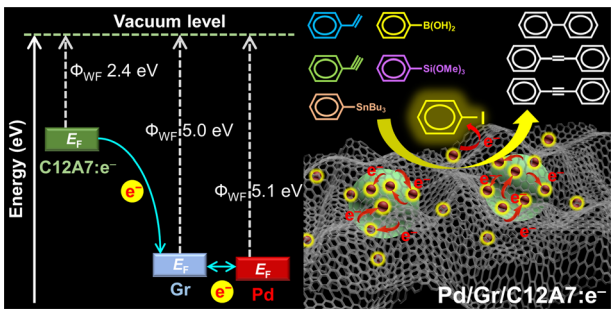

Encapsulated C12A7 electride material enables a multistep electron transfer process for cross-coupling reactions

Bo Dai, Zichuang Li, Miao Xu, Jiang Li, Yangfan Lu, Jiantao Zai, Liuyin Fan, Sang-Won Park, Masato Sasase, Masaaki Kitano,* Hideo Hosono,* Xin-Hao Li, Tian-Nan Ye* and Jie-Sheng Chen*

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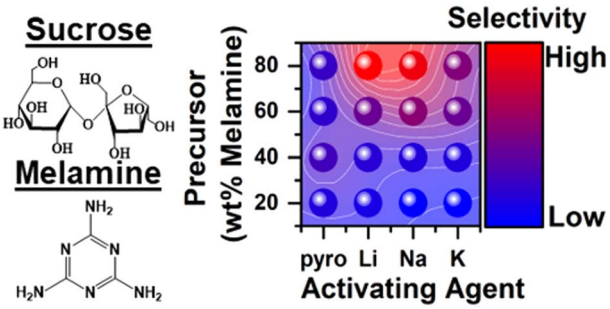
Modulation of CO_2 adsorption thermodynamics and selectivity in alkali-carbonate activated N-rich porous carbons

J. Ehren Eichler, James N. Burrow, Naman Katyal, Graeme Henkelman and C. Buddie Mullins*



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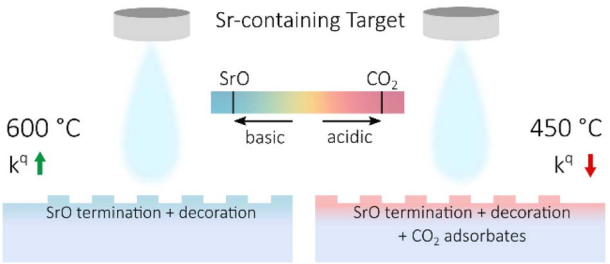
Improving and degrading the oxygen exchange kinetics of $La_{0.6}Sr_{0.4}CoO_{3-\delta}$ by Sr decoration

Matthäus Siebenhofer,* Christoph Riedl, Andreas Nenning, Werner Artner, Christoph Rameshan, Alexander Karl Opitz, Jürgen Fleig and Markus Kubicek



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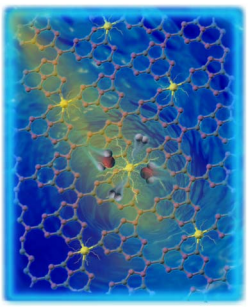
S-doped C_3N_5 derived from thiadiazole for efficient photocatalytic hydrogen evolution

Xinwei Guan, Mohammed Fawaz, Ranjini Sarkar, Chun-Ho Lin, Zhixuan Li, Zhihao Lei, Panangattu Dharmarajan Nithinraj, Prashant Kumar, Xiangwei Zhang, Jae-Hun Yang, Long Hu, Tom Wu, Sudip Chakraborty, Jiabao Yi* and Ajayan Vinu*



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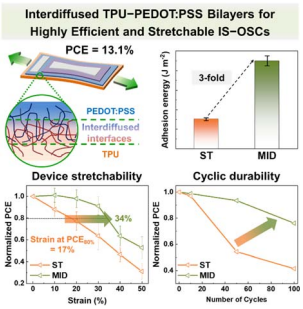
Interdiffused thermoplastic urethane-PEDOT:PSS bilayers with superior adhesion properties for high-performance and intrinsically-stretchable organic solar cells

Jinho Lee, Jin-Woo Lee, Hyunggwi Song, Myoung Song, Jinseok Park, Geon-U Kim, Dahyun Jeong, Taek-Soo Kim and Bumjoon J. Kim*



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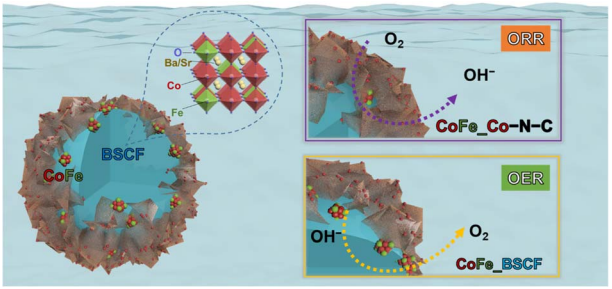

Organic ligand-facilitated *in situ* exsolution of CoFe alloys over $Ba_{0.5}Sr_{0.5}Co_{0.8}Fe_{0.2}O_{3-\delta}$ perovskite toward enhanced oxygen electrocatalysis for rechargeable Zn-air batteries

Yasir Arafat, Muhammad Rizwan Azhar, Yijun Zhong, Ryan O'Hayre, Moses O. Tadé and Zongping Shao*

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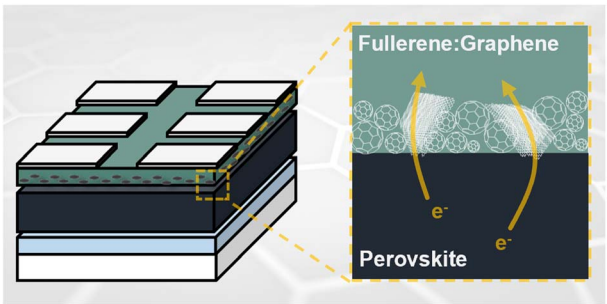

Enhancing charge extraction in inverted perovskite solar cells contacts *via* ultrathin graphene:fullerene composite interlayers

Andrea Zanetta, Isabella Bulfaro, Fabiola Faini, Matteo Manzi, Giovanni Pica, Michele De Bastiani, Sebastiano Bellani, Marilena Isabella Zappia, Gabriele Bianca, Luca Gabatel, Jaya-Kumar Panda, Antonio Esaú Del Rio Castillo, Mirko Prato, Simone Lauciello, Francesco Bonaccorso and Giulia Grancini*

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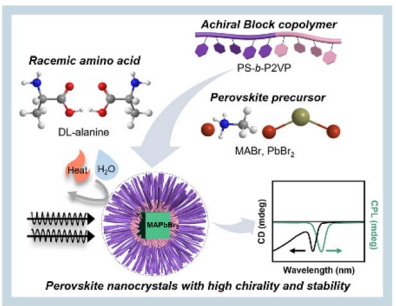

Simultaneously achieving room-temperature circularly polarized luminescence and high stability in chiral perovskite nanocrystals *via* block copolymer micellar nanoreactors

Minju Kim, Jiweon Kim, Jieun Bang, Yu Jin Jang, JaeHong Park and Dong Ha Kim*

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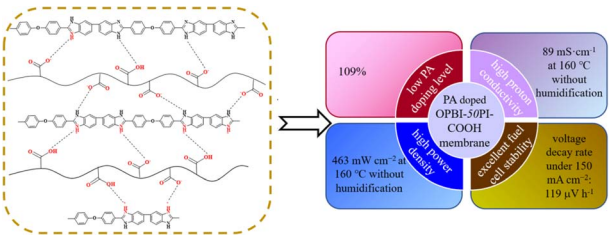

Composite membranes consisting of acidic carboxyl-containing polyimide and basic polybenzimidazole for high-temperature proton exchange membrane fuel cells

Erli Qu, Geng Cheng, Min Xiao, Dongmei Han, Sheng Huang, Zhiheng Huang, Wei Liu, Shuanjin Wang* and Yuezhong Meng*

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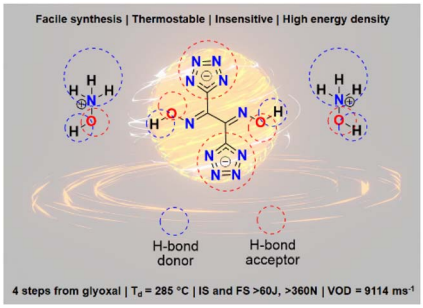
Increasing the limits of energy and safety in tetrazoles: dioximes as unusual precursors to very thermostable and insensitive energetic materials

Jatinder Singh, Richard J. Staples and Jean'ne M. Shreeve*



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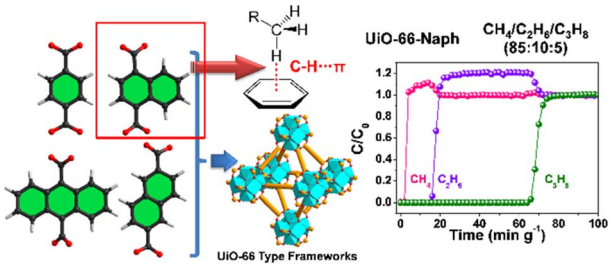
Engineering pore nanospaces by introducing aromatic effects in UiO-66 for efficient separation of light hydrocarbons

Liang Zhang, Xiao-Hong Xiong, Liu-Li Meng, Lu-Zhu Qin, Cheng-Xia Chen, Zhang-Wen Wei* and Cheng-Yong Su*



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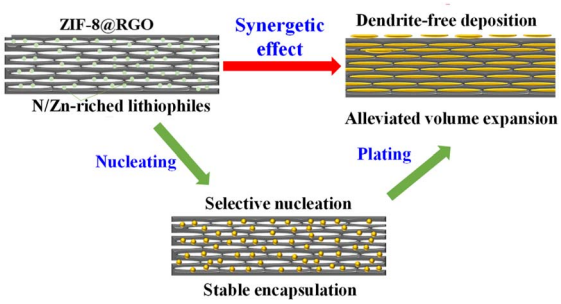
A 3D lithiophilic ZIF-8@RGO free-standing scaffold with dendrite-free behavior enabling high-performance Li metal batteries

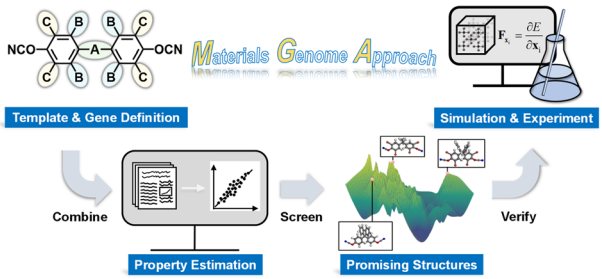
Qi Liu, Rilei Wang, Zhenfang Liu, Xianshu Wang,* Cuiping Han, Hongbo Liu* and Baohua Li*



12918

Discovery of thermosetting polymers with low hygroscopicity, low thermal expansivity, and high modulus by machine learning

Xinyao Xu, Wenlin Zhao, Yaxi Hu, Liquan Wang,* Jiaping Lin,* Huimin Qi and Lei Du



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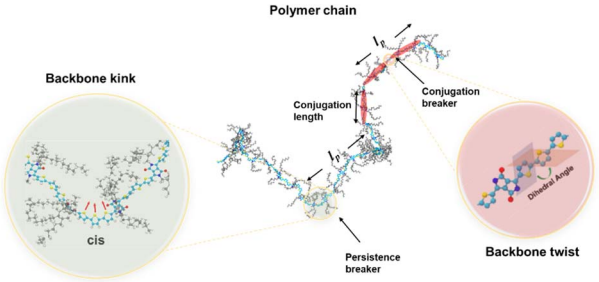
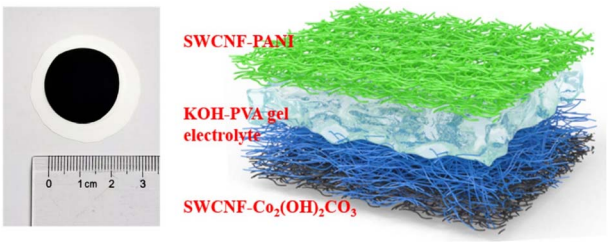


Probing single-chain conformation and its impact on the optoelectronic properties of donor–accepter conjugated polymers

Zhiqiang Cao, Zhaofan Li, Sara A. Tolba, Gage T. Mason, Miao Xiong, Michael U. Ocheje, Amirhadi Alesadi, Changwoo Do, Kunlun Hong, Ting Lei, Simon Rondeau-Gagné, Wenjie Xia* and Xiaodan Gu*

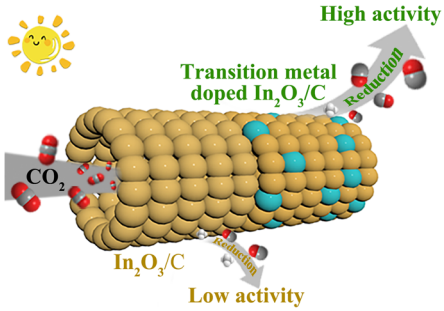
12941



High-quality single-walled carbon nanotube films as current collectors for flexible supercapacitors

Sheng Zhu, Zeyao Zhang,* Jian Sheng, Guodong Jia, Jiangfeng Ni* and Yan Li*

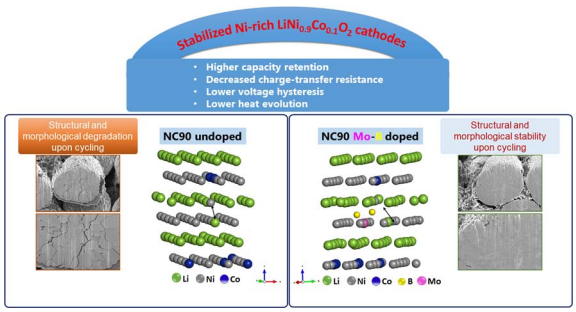
12950



Tailoring the electronic structure of In_2O_3/C photocatalysts for enhanced CO_2 reduction

Awu Zhou, Chen Zhao, Jianchi Zhou, Yibo Dou,* Jian-Rong Li and Min Wei

12958



Stabilizing Ni-rich high energy cathodes for advanced lithium-ion batteries: the case of $LiNi_{0.9}Co_{0.1}O_2$

Francis Amalraj Susai, Amreen Bano, Sandipan Maiti, Judith Grinblat, Arup Chakraborty, Hadar Sclar, Tatyana Kravchuk, Aleksandr Kondrakov, Maria Tkachev, Michael Talianker, Dan Thomas Major,* Boris Markovsky* and Doron Aurbach*

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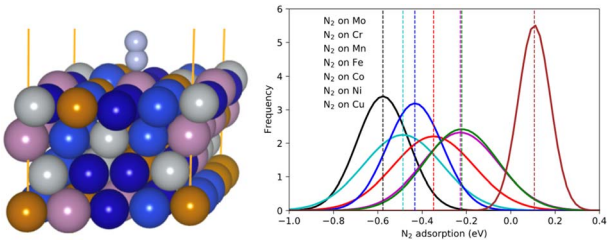
12973

N_2 adsorption on high-entropy alloy surfaces: unveiling the role of local environments

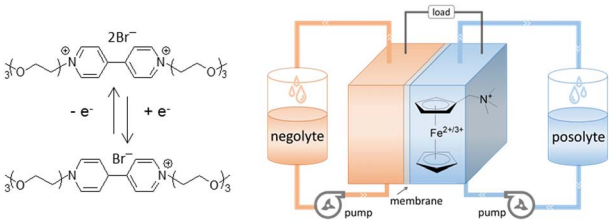
Rafael B. Araujo* and Tomas Edvinsson*



12984

Nonionic oligo(ethylene glycol)-substituted viologen negolytes for aqueous organic redox flow batteries

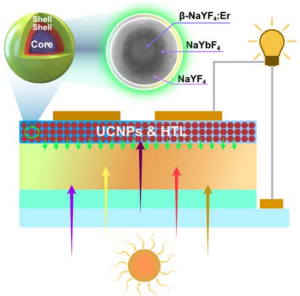
Yanxin Yao, Wanzhen Ma, Jiafeng Lei, Zengyue Wang, Yi-Chun Lu* and Lei Liu*



12992

Highly controllable and reproducible one-step synthesis of β-$NaYF_4$:Er^{3+}@$NaYbF_4$@$NaYF_4$ upconversion nanoparticles for $Sb_2(S,Se)_3$ solar cells with enhanced efficiency

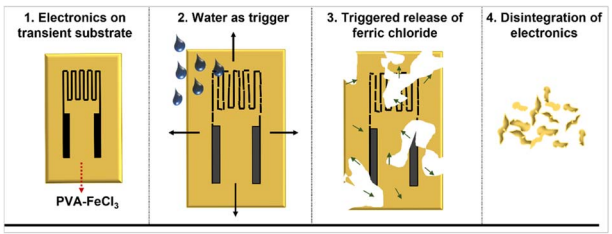
Xin Jin, Shin Woei Leow, Yanan Fang and Lydia Helena Wong*



12999

PVA–$FeCl_3$ composites as substrate and packaging materials for the controlled degradation of non-degradable metals in transient electronics

Neeru Mittal, Tae-Min Jang, Suk-Won Hwang* and Markus Niederberger*



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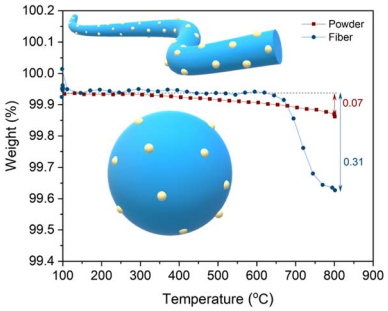
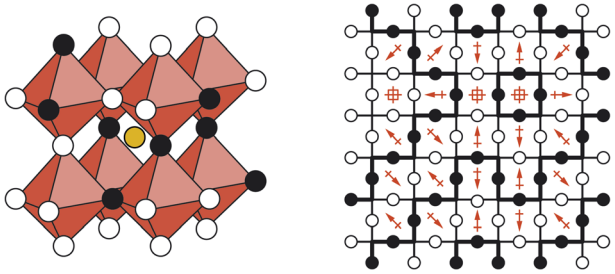
13007



Nanoparticle exsolution *via* electrochemical switching in perovskite fibers for solid oxide fuel cell electrodes

Min Xu,* Ran Cao, Shitao Wu, JinGoo Lee, Di Chen* and John T. S. Irvine*

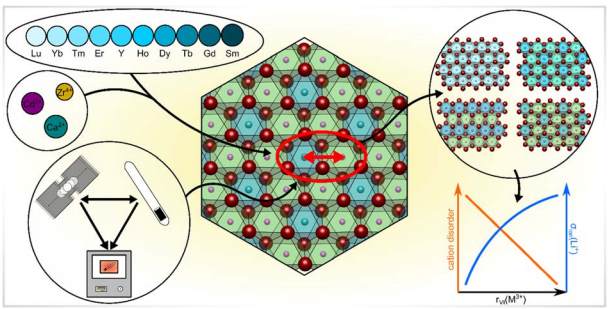
13016



Anion-polarisation-directed short-range-order in antiperovskite Li_2FeSO

Samuel W. Coles,* Viktoria Falkowski, Harry S. Geddes, Gabriel E. Pérez, Samuel G. Booth, Alexander G. Squires, Conn O'Rourke, Kit McColl, Andrew L. Goodwin, Serena A. Cussen, Simon J. Clarke, M. Saiful Islam and Benjamin J. Morgan*

13027



Influence of synthesis and substitution on the structure and ionic transport properties of lithium rare earth metal halides

Maximilian A. Plass, Sebastian Bette, Nina Philipp, Igor Moundrakovski, Kathrin Küster, Robert E. Dinnebier and Bettina V. Lotsch*

CORRECTION

13039

Correction: The role of ion solvation in lithium mediated nitrogen reduction

O. Westhead, M. Spry, A. Bagger, Z. Shen, H. Yadegari, S. Favero, R. Tort, M. Titirici, M. P. Ryan, R. Jervis, Y. Katayama, A. Aguadero, A. Regoutz, A. Grimaud* and I. E. L. Stephens*