

Journal of Materials Chemistry A

Materials for energy and sustainability

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See Yang Song, Ping Wang, Jong-Beom Baek *et al.*, pp. 12726–12734. Image reproduced by permission of Xianglong Zhao from *J. Mater. Chem. A*, 2023, 11, 12726.

EDITORIAL

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Introducing the tenth anniversary issues of *Journal of Materials Chemistry A, B and C*

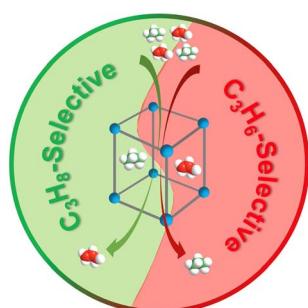


HIGHLIGHT

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Microporous metal–organic frameworks for the purification of propylene

Feng Xie, Hao Wang* and Jing Li*



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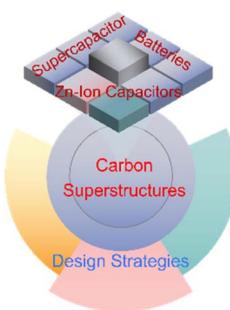
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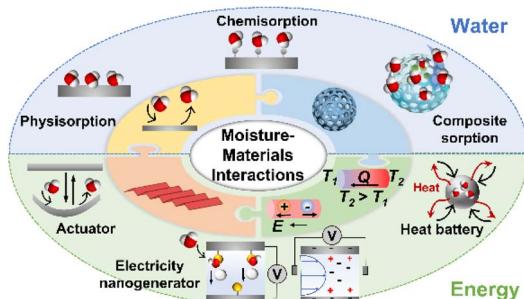
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Versatile carbon superstructures for energy storageZiyang Song, Ling Miao, Yaokang Lv, Lihua Gan*
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Advances in harvesting water and energy from ubiquitous atmospheric moisture

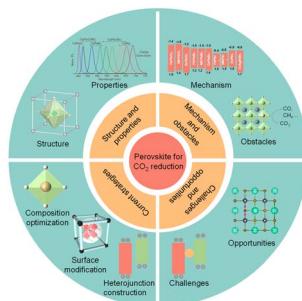
Wanheng Lu, Wei Li Ong and Ghim Wei Ho*



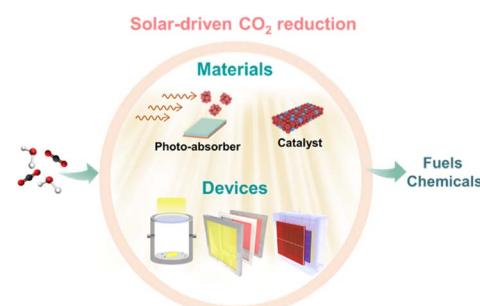
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Halide perovskite quantum dots for photocatalytic CO₂ reduction

Wentao Song, Guobin Qi and Bin Liu*

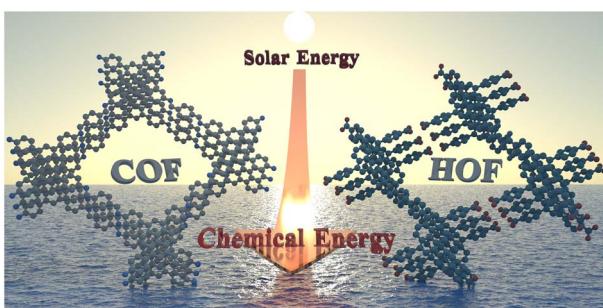


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Solar driven CO₂ reduction: from materials to devicesLili Wan, Rong Chen, Daniel Wun Fung Cheung,
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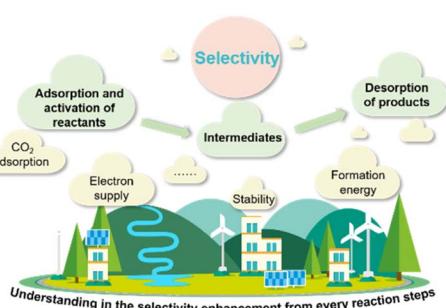
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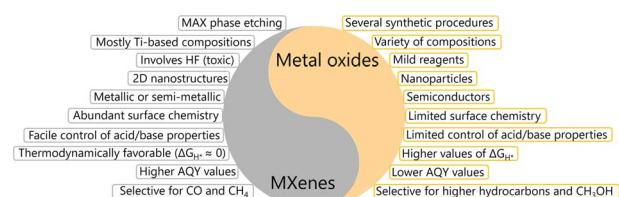
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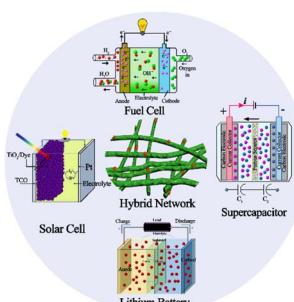
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Mahesh M. Nair, Alexandra C. Iacoban, Florentina Neațu, Mihaela Florea* and Ștefan Neațu*

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Arun K. Nandi* and Dhruba P. Chatterjee

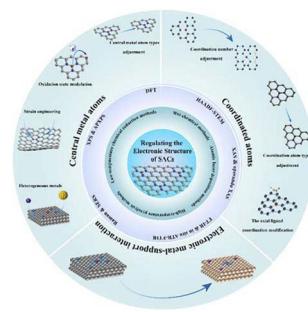


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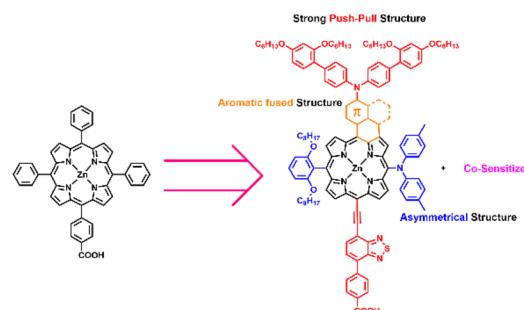
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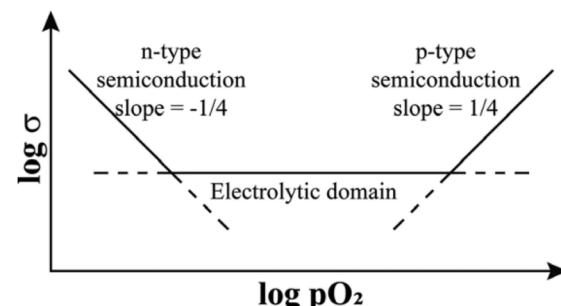
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Redox-active oxygen in oxides: emergent applications, including field-induced resistive switching, flash luminescence, p-n junctions and high capacity battery cathodes

Anthony R. West*

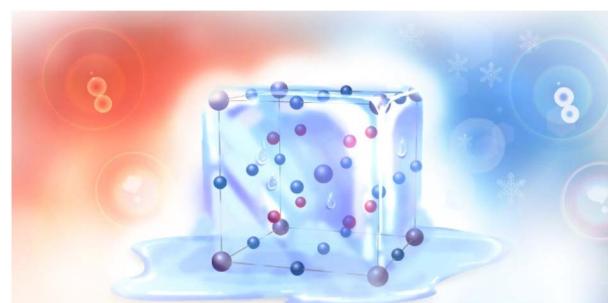


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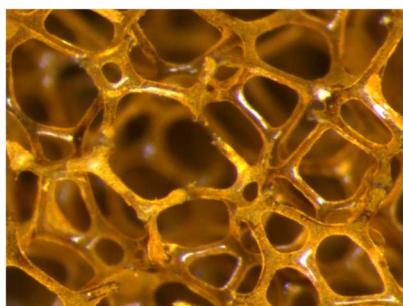
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Yuichi Shimakawa* and Yoshihisa Kosugi

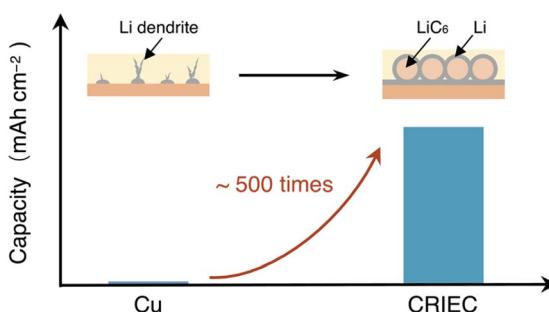


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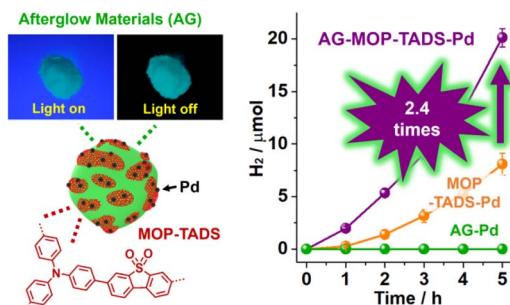
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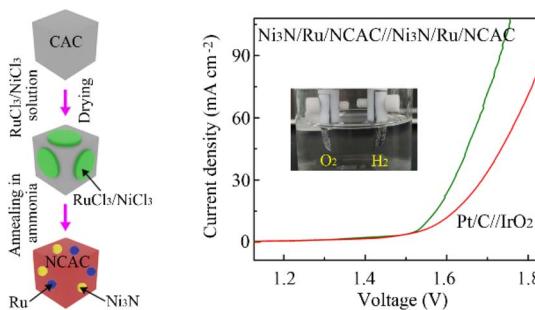


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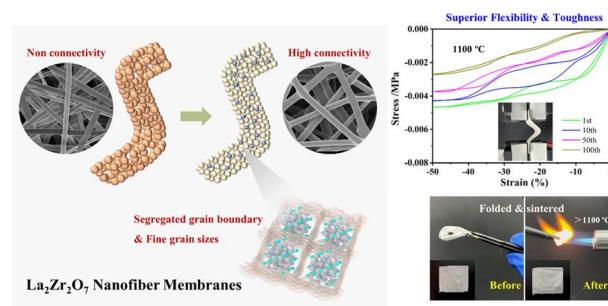
Xianglong Zhao, Xinghua Yong, Qizhe Ji, Zhenghua Yang, Yang Song,* Yiqiang Sun, Zhengyang Cai, Jingcheng Xu, Luyan Li, Shuhua Shi, Feiyong Chen, Cuncheng Li, Ping Wang* and Jong-Beom Baek*

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

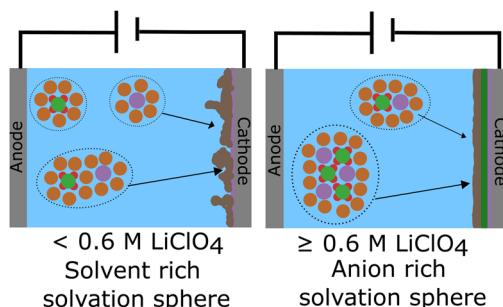
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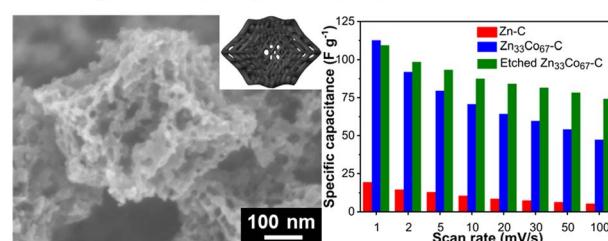


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Enlarging the porosity of metal–organic framework-derived carbons for supercapacitor applications by a template-free ethylene glycol etching method

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

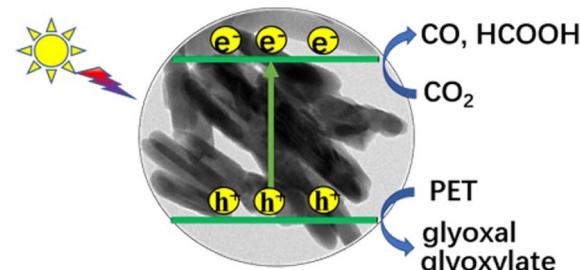
Co, N doped hierarchical porous carbon



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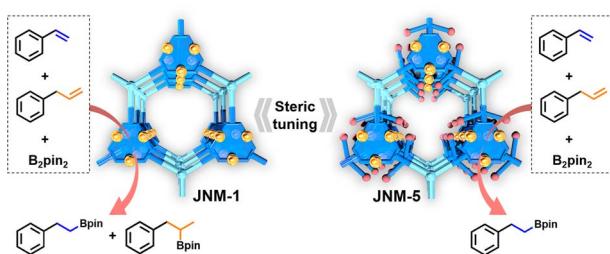
Modulating oxygen vacancy concentration on Bi₄V₂O₁₁ nanorods for synergistic photo-driven plastic waste oxidation and CO₂ reduction

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



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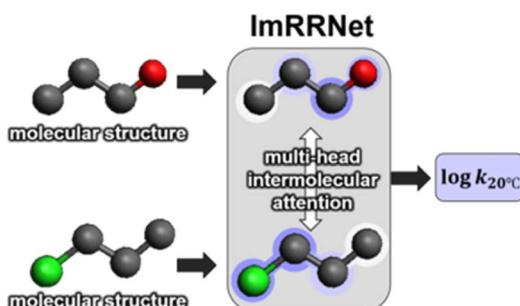
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Tailoring stability, catalytic activity and selectivity of covalent metal–organic frameworks *via* steric modification of metal nodes

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

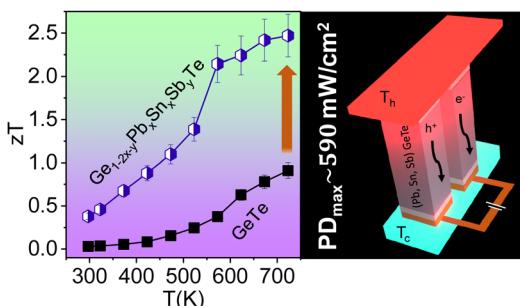
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An artificial neural network using multi-head intermolecular attention for predicting chemical reactivity of organic materials

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

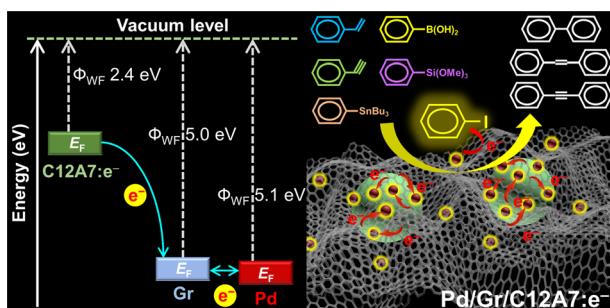
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High thermoelectric performance in entropy-driven $\text{Ge}_{1-2x-y}\text{Pb}_x\text{Sn}_x\text{Sb}_y\text{Te}$

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*

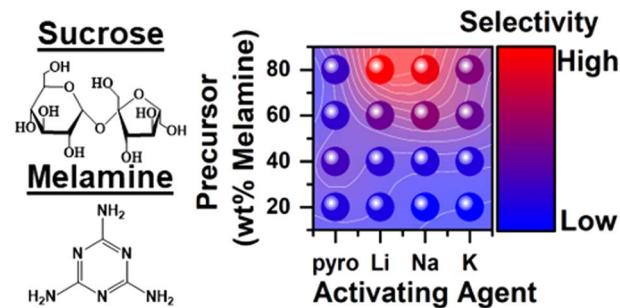


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Modulation of CO_2 adsorption thermodynamics and selectivity in alkali-carbonate activated N-rich porous carbons

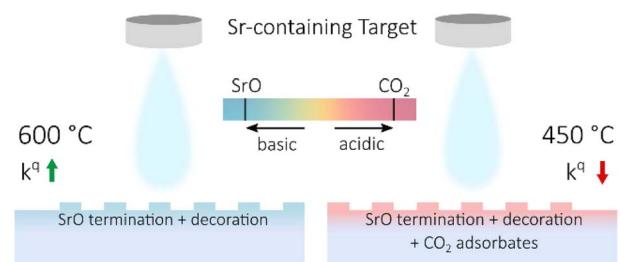
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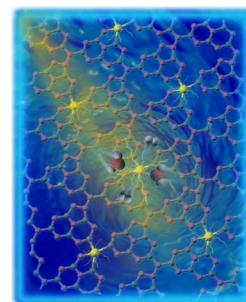
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S-doped C_3N_5 derived from thiadiazole for efficient photocatalytic hydrogen evolution

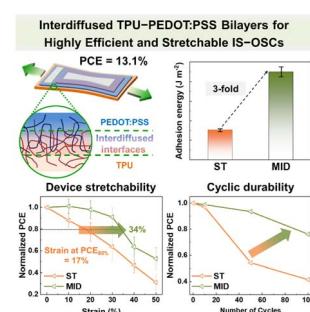
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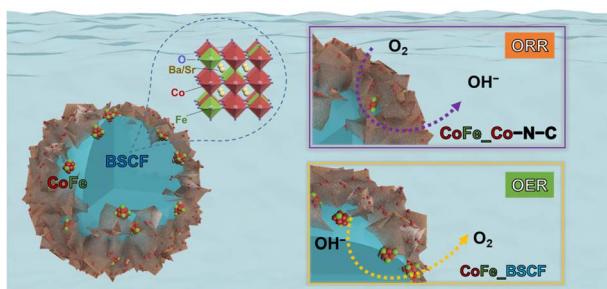
Interdiffused thermoplastic urethane-PEDOT:PSS bilayers with superior adhesion properties for high-performance and intrinsically-stretchable organic solar cells

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



PAPERS

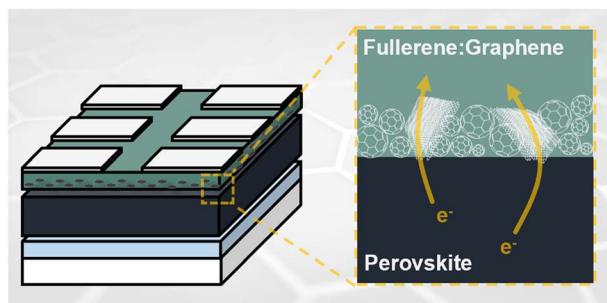
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Organic ligand-facilitated *in situ* exsolution of CoFe alloys over $\text{Ba}_{0.5}\text{Sr}_{0.5}\text{Co}_{0.8}\text{Fe}_{0.2}\text{O}_{3-\delta}$ perovskite toward enhanced oxygen electrocatalysis for rechargeable Zn-air batteries

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

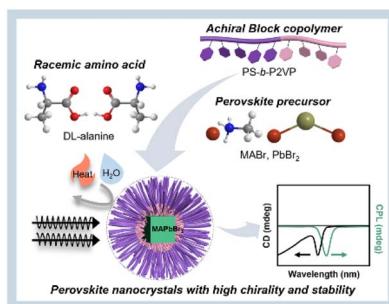
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Enhancing charge extraction in inverted perovskite solar cells contacts via ultrathin graphene:fullerene composite interlayers

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

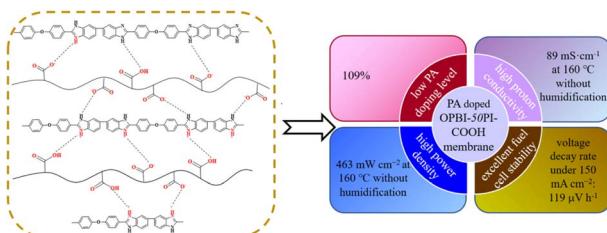
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Simultaneously achieving room-temperature circularly polarized luminescence and high stability in chiral perovskite nanocrystals via block copolymer micellar nanoreactors

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*

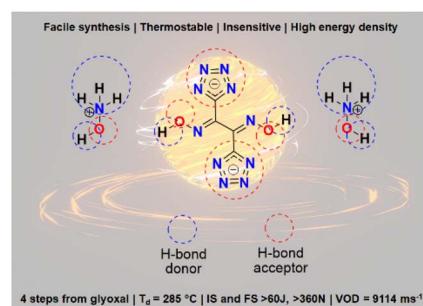


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Increasing the limits of energy and safety in tetrazoles: dioximes as unusual precursors to very thermostable and insensitive energetic materials

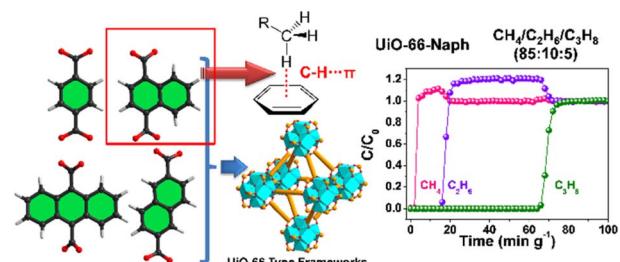
Jatinder Singh, Richard J. Staples and Jeanne M. Shreeve*



12902

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

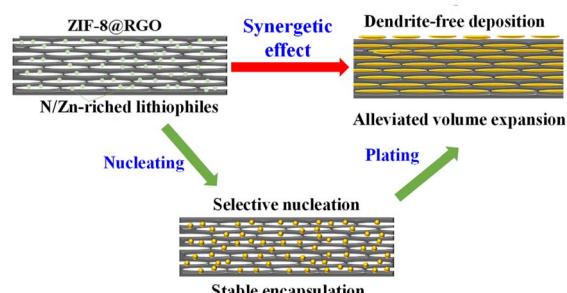
Liang Zhang, Xiao-Hong Xiong, Liu-Li Meng, Lu-Zhu Qin, Cheng-Xia Chen, Zhang-Wen Wei* and Cheng-Yong Su*



12910

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

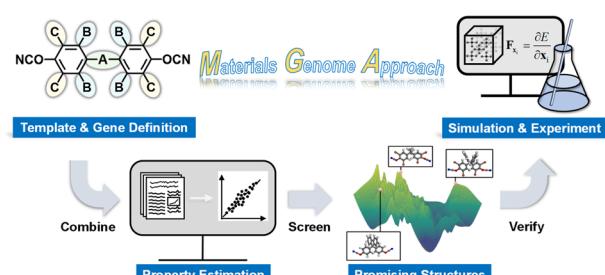
Qi Liu, Rilei Wang, Zhenfang Liu, Xianshu Wang,* Cuiping Han, Hongbo Liu* and Baohua Li*



12918

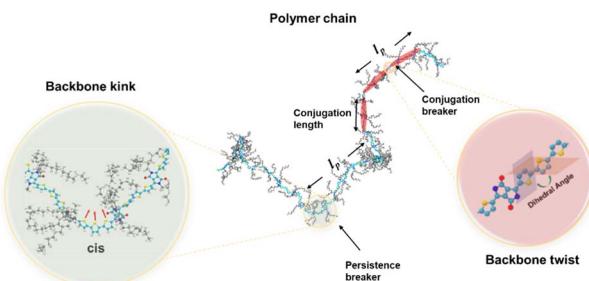
Discovery of thermosetting polymers with low hygroscopicity, low thermal expansivity, and high modulus by machine learning

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



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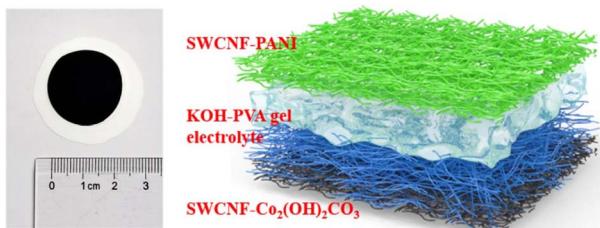
12928



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*

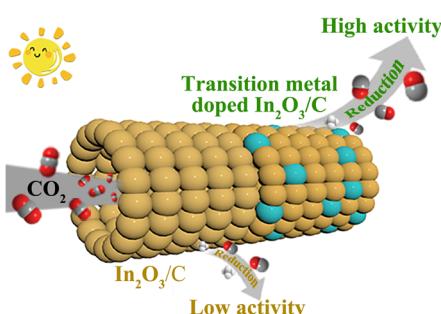
12941



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*

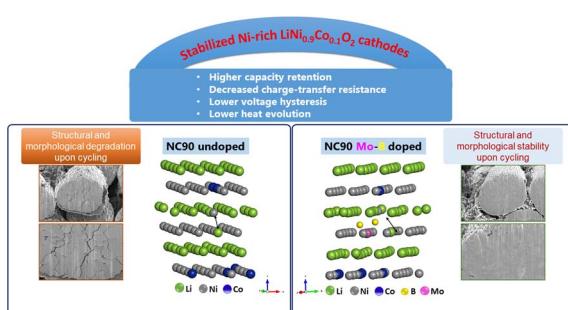
12950



Tailoring the electronic structure of In₂O₃/C photocatalysts for enhanced CO₂ 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}O₂

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*

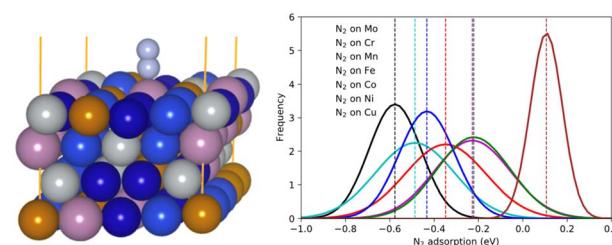


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12973

N₂ adsorption on high-entropy alloy surfaces: unveiling the role of local environments

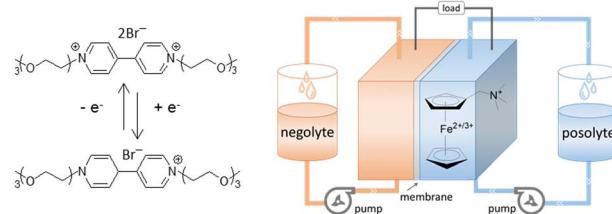
Rafael B. Araujo* and Tomas Edvinsson*



12984

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

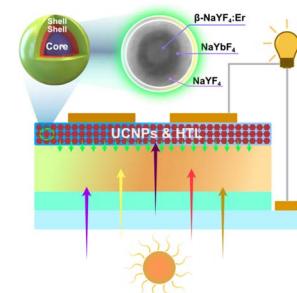
Yanxin Yao, Wanzenh Ma, Jiafeng Lei, Zengyue Wang, Yi-Chun Lu* and Lei Liu*



12992

Highly controllable and reproducible one-step synthesis of β -NaYF₄:Er³⁺@NaYbF₄@NaYF₄ upconversion nanoparticles for Sb₂(S,Se)₃ solar cells with enhanced efficiency

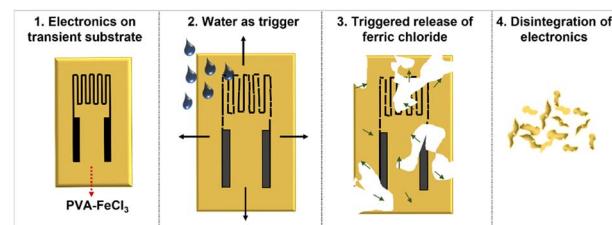
Xin Jin, Shin Woei Leow, Yanan Fang and Lydia Helena Wong*



12999

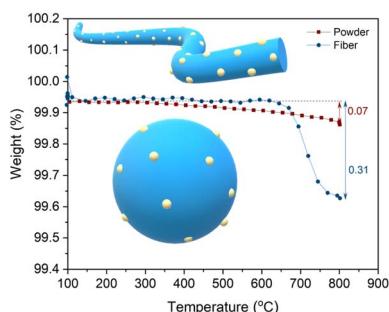
PVA-FeCl₃ composites as substrate and packaging materials for the controlled degradation of non-degradable metals in transient electronics

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



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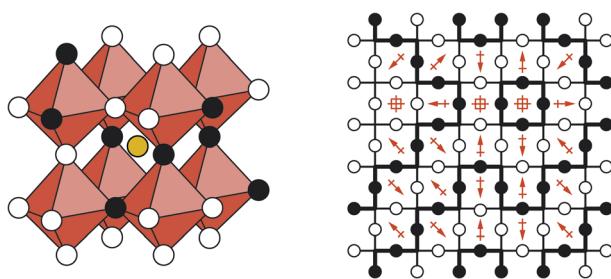
13007



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*

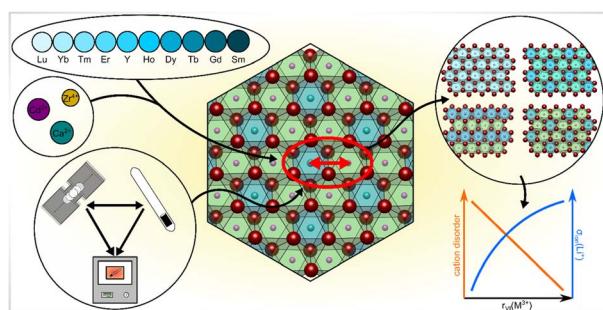
13016



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*

