

Journal of Materials Chemistry A

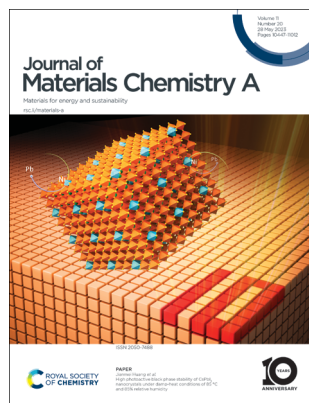
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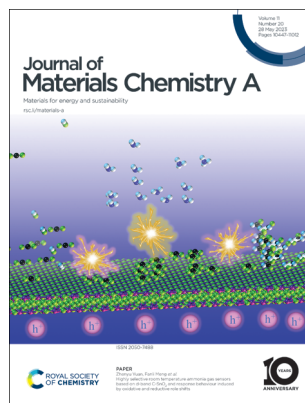
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Inside cover

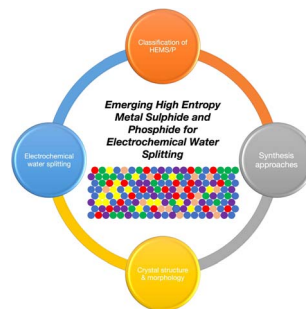
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HIGHLIGHT

10463

Emerging high entropy metal sulphides and phosphides for electrochemical water splitting

Ranjit Mohili, N. R. Hemanth, Haneul Jin, Kwangyeol Lee* and Nitin Chaudhari*

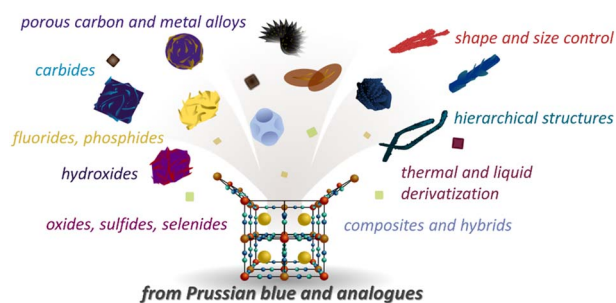


REVIEWS

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Prussian blue and its analogues as functional template materials: control of derived structure compositions and morphologies

Behnoosh Bornamehr, Volker Presser,* Aldo J. G. Zarbin,* Yusuke Yamauchi* and Samantha Husmann*



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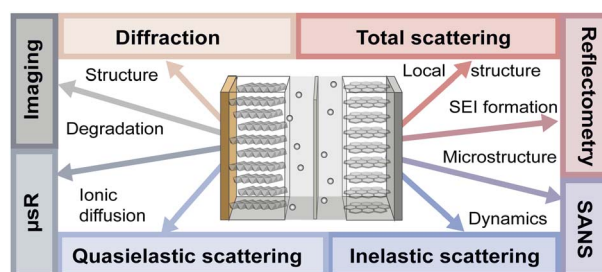


REVIEWS

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Neutron and muon characterisation techniques for battery materials

Gabriel E. Pérez, Jake M. Brittain, Innes McClelland, Stephen Hull, Martin O. Jones, Helen Y. Playford, Serena A. Cussen, Peter J. Baker and Emily M. Reynolds*

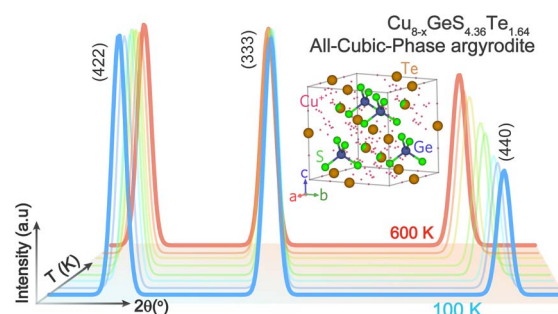


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A Cu-based $\text{Cu}_{8-x}\text{Ge}(\text{S}, \text{Te})_6$ argyrodite: its widespan cubic-phase region and ultralow lattice thermal conductivity

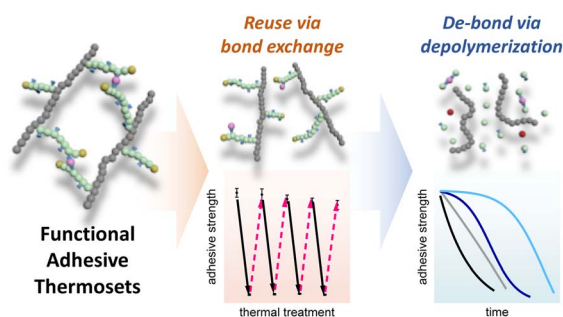
Yi-Fen Tsai, Charlotte L. Stern, Bo-Chia Chen, G. Jeffrey Snyder* and Hsin-Jay Wu*



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Grafting self-immolative poly(benzyl ether)s toward sustainable adhesive thermosets with reversible bonding and triggered de-bonding capabilities

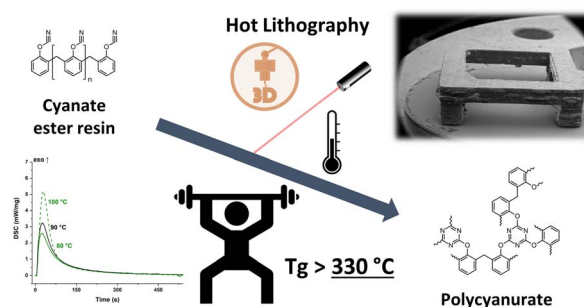
Byeongjun Choi, Ji Woo Kim, Geunyoung Choi, Songah Jeong, Eunpyo Choi and Hyungwoo Kim*



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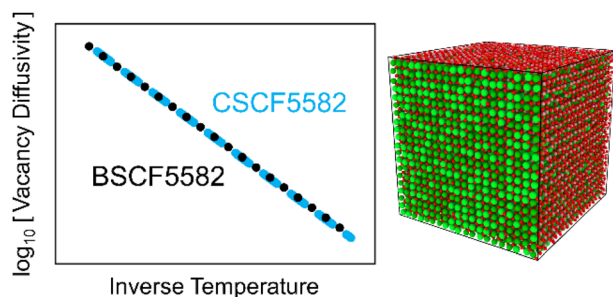
Additive manufacturing of high-performance polycyanurates via photo-induced catalytic poly-trimerization

Raffael Wolff, Patrick Knaack, Konstanze Seidler, Christian Gorsche, Thomas Koch, Jürgen Stampfl and Robert Liska*



COMMUNICATIONS

10551

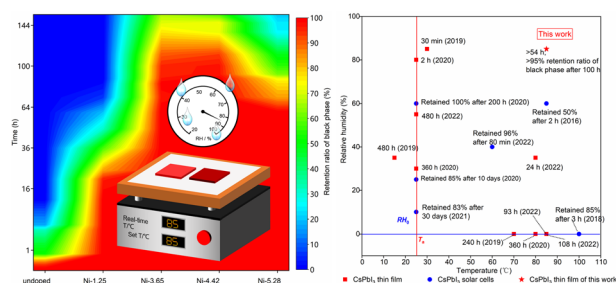


High oxygen-vacancy diffusivity predicted for perovskite oxide $\text{Ca}_{0.5}\text{Sr}_{0.5}\text{Co}_{0.8}\text{Fe}_{0.2}\text{O}_{2.5}$

Alexander Bonkowski, Caitlin Perkampus and Roger A. De Souza*

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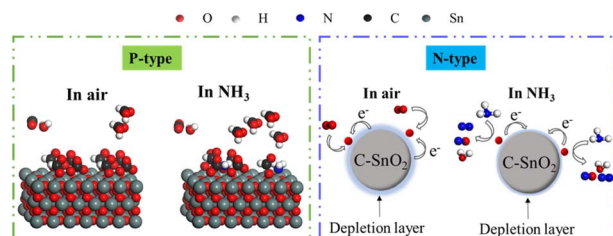
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High photoactive black phase stability of CsPbI_3 nanocrystals under damp-heat conditions of 85 °C and 85% relative humidity

Shengwen Zou, Jun Kang, Yuzheng Zhang, Mingjing Qi, Xiaojun Yan, Xiaoliang Zhang and Jianmei Huang*

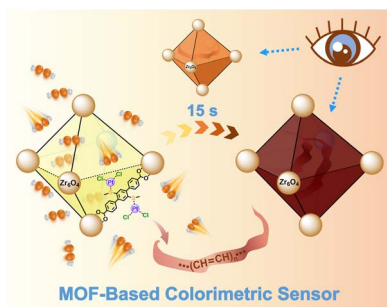
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Highly selective room temperature ammonia gas sensors based on d-band C-SnO_2 and response behavior induced by oxidative and reductive role shifts

Hongmin Zhu, Hanyang Ji, Zhenyu Yuan,* Yanbai Shen, Hongliang Gao and Fanli Meng*

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MOF-based colorimetric sensor for rapid and visual readout of trace acetylene

Jieying Hu, Song Chen, Zhiqing Liu, Jian-Rong Li, Jia-Hong Huang, Zhixin Jiang, Weihui Ou,* Wei-Ming Liao, Jian Lu and Jun He*

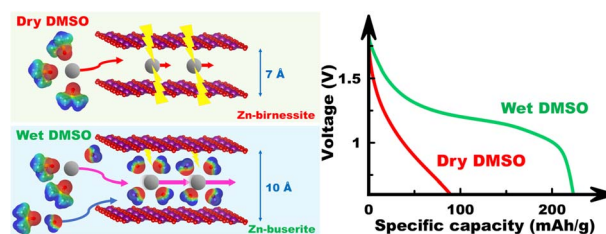


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Unveiling the role of water in enhancing the performance of zinc-ion batteries using dimethyl sulfoxide electrolyte and the manganese dioxide cathode

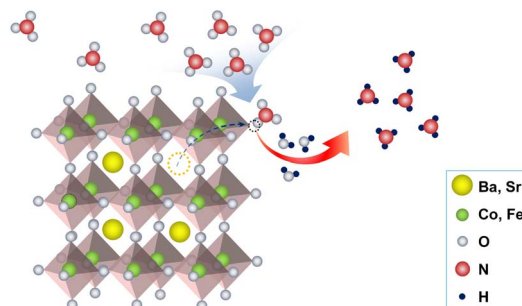
Wathanyu Kao-ian, Jinnawat Sangsawang, Pinit Kidkhunthod, Suttipong Wannapaiboon, Manaswee Suttipong, Amornrat Khampunbut, Prasit Pattanauwat, Mai Thanh Nguyen, Tetsu Yonezawa and Soorathep Kheawhom*



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Promoting nitrate electroreduction to ammonia over A-site deficient cobalt-based perovskite oxides

Fulong Liu, Zhenbao Zhang, Lei Shi, Yu Zhang, Xiaoyu Qiu, Yuming Dong,* Heqing Jiang, Yongfa Zhu* and Jiawei Zhu*



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Zn²⁺ ion doping for structural modulation of lead-free Sn-based perovskite solar cells

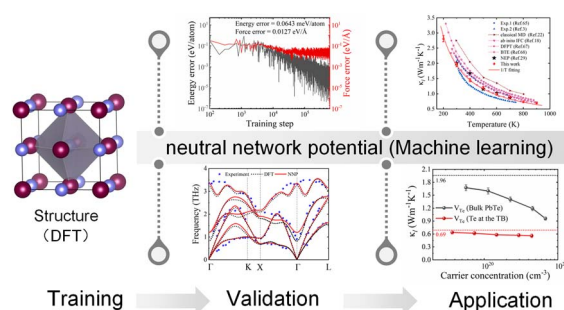
Hyungsu Jang, Hyeong Yong Lim, Chan Beom Park, Jongdeuk Seo, Jung Geon Son, Taehee Song, Jaehwi Lee, Yun Seop Shin, Jina Roe, Sang Kyu Kwak,* Dong Suk Kim* and Jin Young Kim*



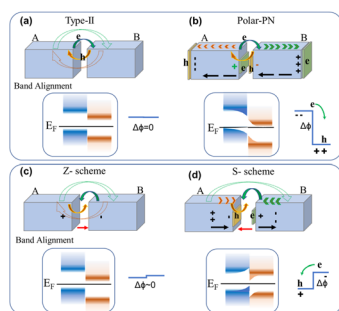
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A machine learning methodology to investigate the lattice thermal conductivity of defected PbTe

Mi Qin, Xuemei Zhang, Jianbo Zhu, Yuming Yang, Zhuoyang Ti, Yaoling Shen, Xianlong Wang, Xiaobing Liu* and Yongsheng Zhang*



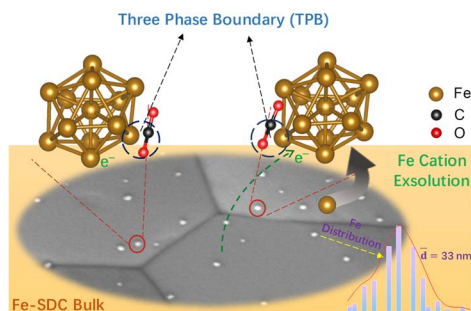
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The tunable interface charge transfer by polarization in two dimensional polar $\text{Al}_2\text{O}_3/\text{MoSO}$ heterostructures

Xinli Wang, Juping Xu, Peng-Fei Liu, Bao-Tian Wang and Wen Yin*

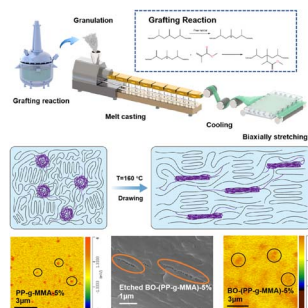
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Carbon dioxide reduction processes on a samarium doped ceria electrocatalyst with exsolved Fe particles

Lujuan Ye, Kang Zhu, Yunan Jiang,* Shaowei Zhang, Ranran Peng and Changrong Xia*

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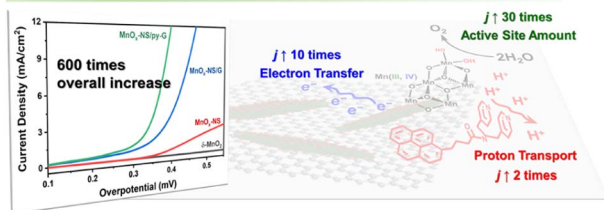


Biaxially oriented films of grafted-polypropylene with giant energy density and high efficiency at 125 °C

Junluo Li, Shaojie Wang, Yujie Zhu, Zhen Luo, Ya-Ru Zhang, Qing Shao, Hui Quan, Mingti Wang, Shixun Hu, Mingcong Yang, Jing Fu, Rui Wang, Jun Hu, Hao Yuan,* Jinliang He* and Qi Li*

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Holistic Functional Biomimetic Catalyst



Holistic functional biomimetics: a key to make an efficient electrocatalyst for water oxidation

Lizhou Fan, Yuxiang Song, Fan Zhang, Brian J. J. Timmer, Alexander Kravberg, Biaobiao Zhang* and Licheng Sun

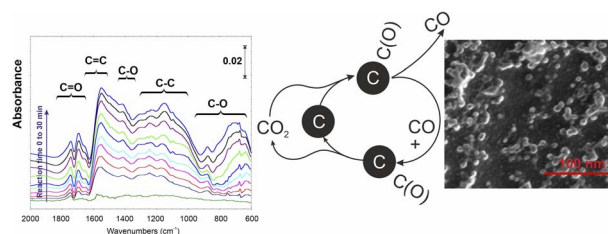


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In situ FTIR study of 2D-carbon materials for CO₂ splitting under non-thermal plasma environment – selective CO production

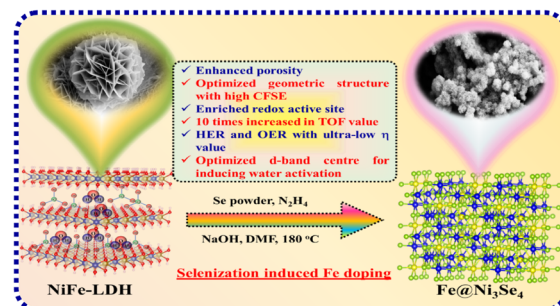
Marek Wiśniewski* and Xinying Liu



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Structural modulation of low-valent iron in LDH-derived Ni₃Se₄ nanosheets: a breakthrough electrocatalyst for the overall water splitting reaction

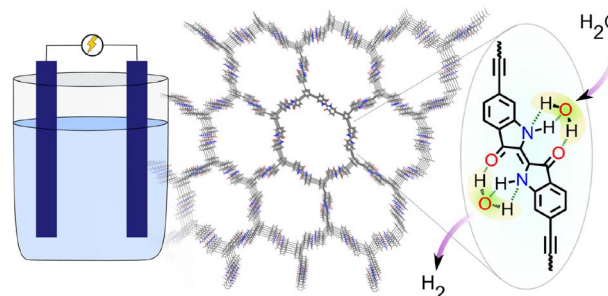
Arun Karmakar, Abhirami V. Krishnan, Rahul Jayan, Ragunath Madhu, Md Mahbubul Islam* and Subrata Kundu*



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Hydrogen bond-mediated pH-universal electrocatalytic hydrogen production by conjugated porous poly-indigo

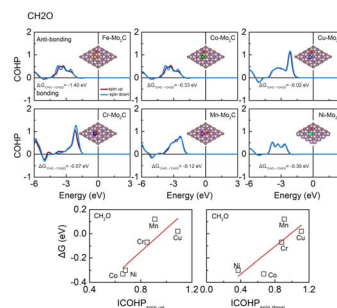
Ipsita Nath, Jeet Chakraborty,* Renaud Lips, Sander Dekyvere, Jiang Min, Rajender S. Varma and Francis Verpoort*



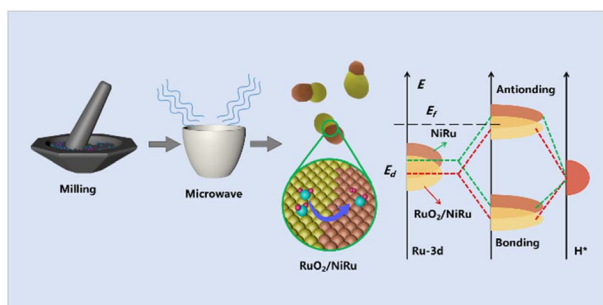
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Decreased spin-resolved anti-bonding states filling to accelerate CHO conversion into CH₂O in transitional metal-doped Mo₂C monolayers during CO₂ reduction

Liu Guo, Rui Li, Jiawei Jiang, Xueping Fan, Ji-Jun Zou and Wenbo Mi*



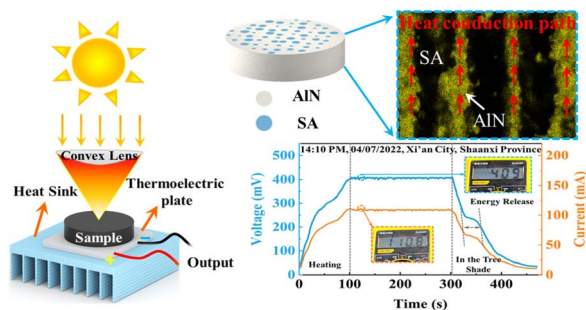
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The RuO₂/NiRu heterogeneous interface optimizes the d-band center of the Ni–Ru catalyst for high-performance alkaline hydrogen evolution reaction

Yitian Zhou, Yifan Liu, Hehua Tang and Bo-Lin Lin*

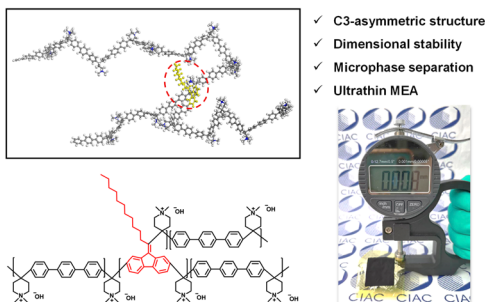
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AlN micro-honeycomb reinforced stearic acid-based phase-change composites with high thermal conductivity for solar-thermal-electric conversion

Jiabin Hu, Zhilei Wei, Bangzhi Ge, Lei Zhao, Kang Peng and Zhongqi Shi*

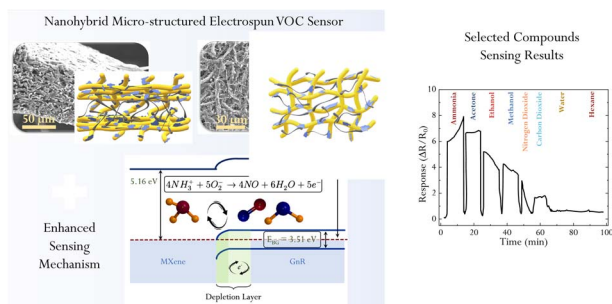
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High-strength, ultra-thin anion exchange membranes with a branched structure toward alkaline membrane fuel cells

Xiaofeng Li, Bin Zhang, Jing Guo, Yaohan Chen, Lei Dai, Jifu Zheng,* Shenghai Li* and Suobo Zhang

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An ultra-sensitive and stable electrochemical sensor with an expanded working range *via in situ* assembly of 3-D structures based on MXene/GnR nanohybrids

Sara Mohseni Taromsari, HaoTian Harvey Shi, Saeed Habibpour, Sophie Kiddell, Aiping Yu, Chul B. Park* and Hani E. Naguib*

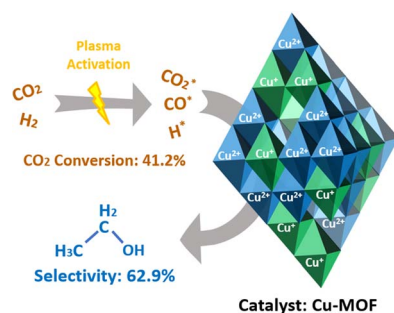


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Direct hydrogenation of CO₂ to ethanol at ambient conditions using Cu(I)-MOF in a dielectric barrier discharge plasma reactor

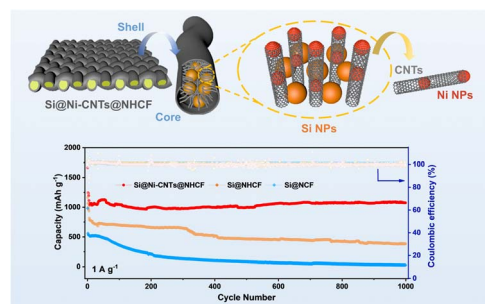
Nan Zou, Jie Chen, Ting Qiu* and Ying Zheng*



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Boosting lithium rocking-chair engineering from the villus cavity and Ni catalytic center of a silicon-carbon anode for high-performance lithium-ion batteries

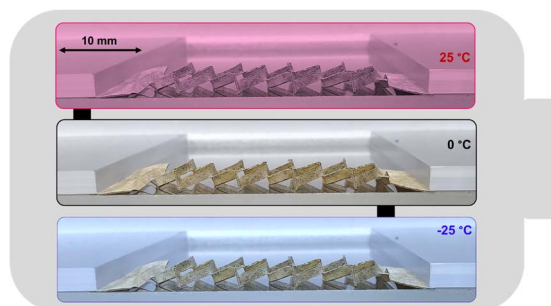
Guizheng Liu, Jiajie Pan, Junhao Li, Zikang Chen, Qilan Chen, Yongxian Lin, Jie Ren, Kaixiang Shi* and Quanbing Liu*



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Fully integrated design of a stretchable kirigami-inspired micro-sized zinc-sulfur battery

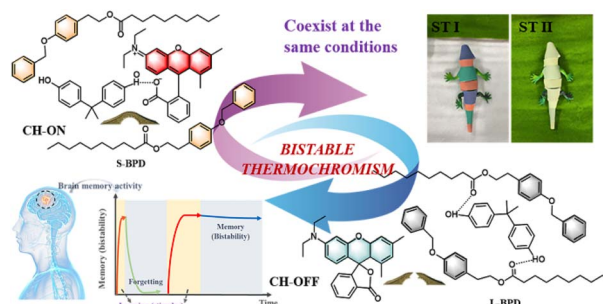
Ahmad Amiri, Kian Bashandeh, Ronald Sellers, Louis Vaught, Mohammad Naraghi and Andreas A. Polycarpou*



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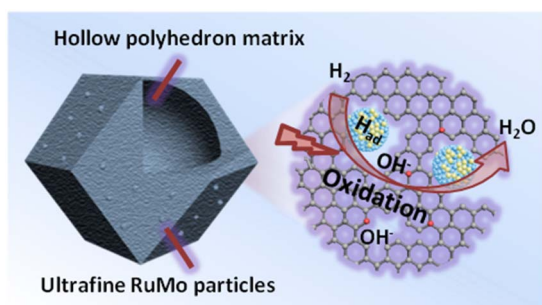
Solar-driven bistable thermochromic textiles based on supercooling and space constraint anchoring electron transfer

Chengcheng Wang, Jingwen Wang, Liping Zhang* and Shaohai Fu



PAPERS

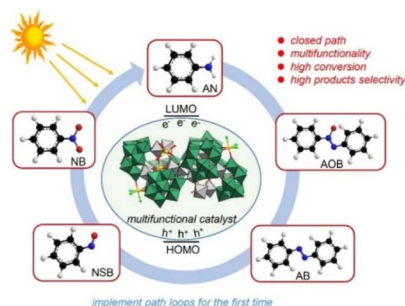
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Mo-modified electronic effect on sub-2 nm Ru catalyst for enhancing hydrogen oxidation catalysis

Min Ma, Chaofan Chen, Xibo Zhang, Hongsheng Zhao, Qiuxiang Wang, Guifen Du, Zhaoxiong Xie and Qin Kuang*

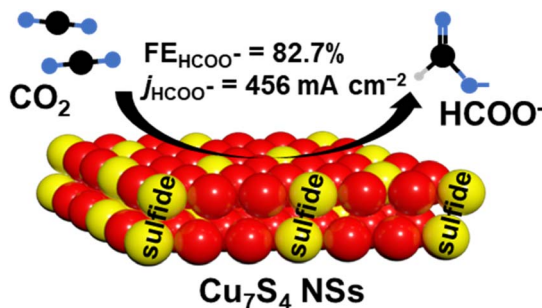
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Controllable redox reaction cycle enabled by multifunctional Ru-containing polyoxometalate-based catalysts

Huafeng Li, Zelong Yuan, Wenjing Chen, Mengnan Yang, Yahao Sun, Shihao Zhang, Pengtao Ma, Jingping Wang* and Jingyang Niu*

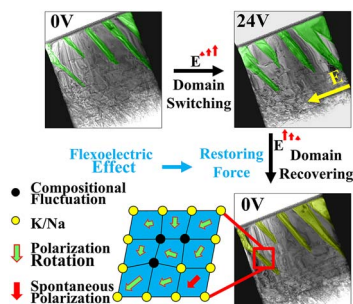
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Cu_7S_4 nanosheets enriched with Cu-S bond for highly active and selective CO_2 electroreduction to formate

Yan Wen, Nan Fang, Wenqiang Liu, Tang Yang, Yong Xu* and Xiaoqing Huang*

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In situ TEM analysis of reversible non-180° domain switching in (K,Na)NbO₃ single crystals

Qinwen Guo, Chengpeng Hu, Xiangfei Li, Ying Meng, Luyao Wang, Haoyu Zhuang, Xi Shen,* Yuan Yao, Hao Tian, Zhongxiang Zhou* and Richeng Yu*

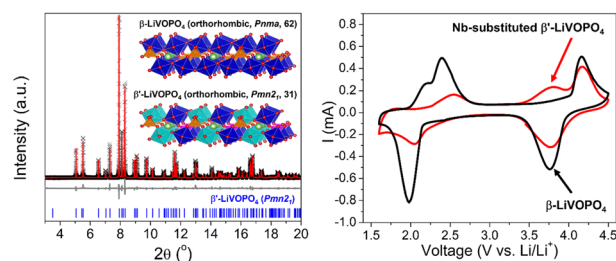


PAPERS

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Complex defect chemistry of hydrothermally-synthesized Nb-substituted β' -LiVOPO₄

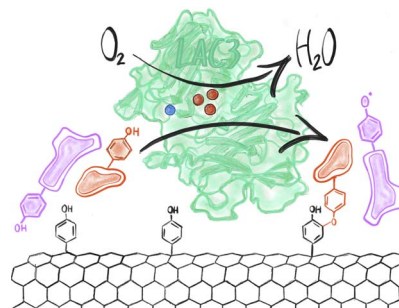
Krystal Lee, Hui Zhou, Mateusz Zuba, Carol Kaplan, Yanxu Zong, Linna Qiao, Guangwen Zhou, Natasha A. Chernova, Hao Liu* and M. Stanley Whittingham*



10850

Laccase-catalyzed functionalization of phenol-modified carbon nanotubes: from grafting of metallopolyphenols to enzyme self-immobilization

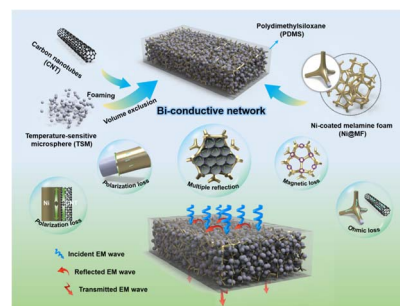
Umberto Contaldo, Solène Gentil, Elise Courvoisier-Dezord, Pierre Rousselot-Pailley, Fabrice Thomas, Thierry Tron* and Alan Le Goff*



10857

Absorption-dominated electromagnetic interference shielding composite foam based on porous and bi-conductive network structures

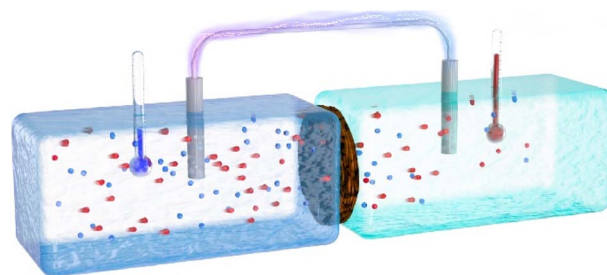
Qiang Peng, Meng Ma,* Qindan Chu, Hao Lin, Wenting Tao, Wenqin Shao, Si Chen, Yanqin Shi, Huiwen He and Xu Wang*



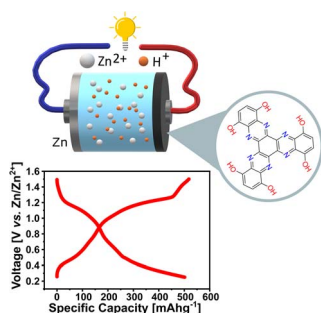
10867

Heat and osmosis cooperatively driven power generation in robust two-dimensional hybrid nanofluidic channels

Tianliang Xiao, Xuejiang Li, Zhaoyue Liu,* Bingxin Lu, Jin Zhai* and Xungang Diao*



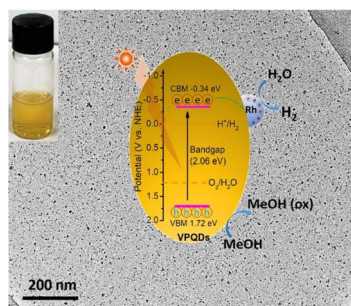
10874



Triquinoxalinediol as organic cathode material for rechargeable aqueous zinc-ion batteries

Svit Menart, Klemen Pirnat,^{*} David Pahovnik and Robert Dominko

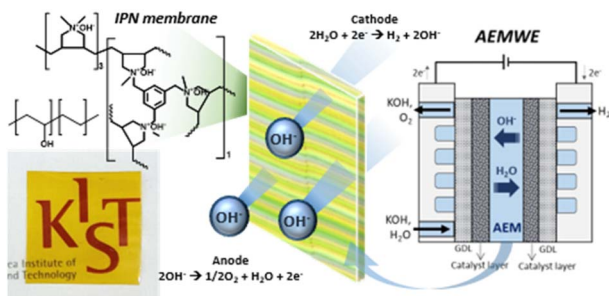
10883



Violet phosphorus quantum dots as an emerging visible light-responsive photocatalyst for an efficient hydrogen evolution reaction

Xin Wang,^{*} Chang Xu, Ziyu Wang, Yan Wang, Xuewen Zhao, Jinying Zhang, Ming Ma, Quansheng Guo and Fuxiang Zhang^{*}

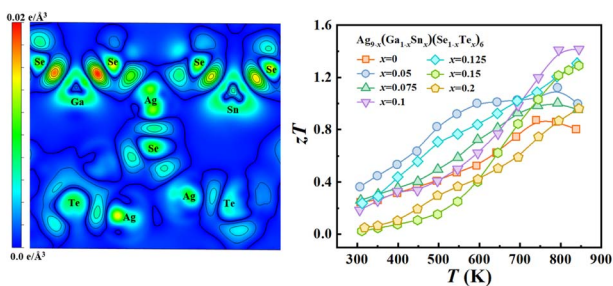
10891



Polydiallylammonium interpenetrating cationic network ion-solvating membranes for anion exchange membrane water electrolyzers

Jiyeon Jung, Young Sang Park, Dong Jun Hwang, Gwan Hyun Choi, Dong Hoon Choi, Hyun Jin Park,^{*} Cheol-Hee Ahn, Seung Sang Hwang and Albert S. Lee^{*}

10901



Co-alloying of Sn and Te enables high thermoelectric performance in Ag₉GaSe₆

Min Li, Hexige Wuliji, Zhengyang Zhou, Pengfei Qiu, Kunpeng Zhao^{*} and Xun Shi^{*}

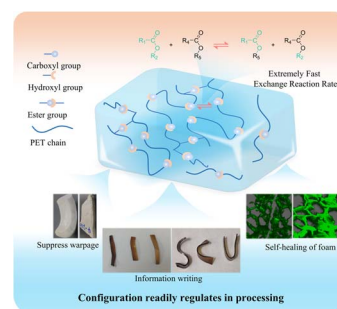


PAPERS

10912

Sustainable polyester vitrimer capable of fast self-healing and multiple shape-programming via efficient synthesis and configuration processing

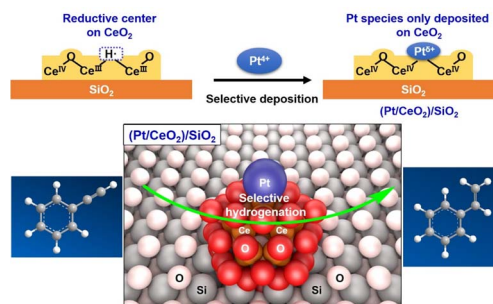
Pengzhi Li, Xutao Zhang, Qi Yang,* Pengjian Gong,* Chul B. Park and Guangxian Li



10927

Bottom-up synthesis of a pyramid-type (Pt/4nmCeO₂)/SiO₂ catalyst via a surface reduction strategy

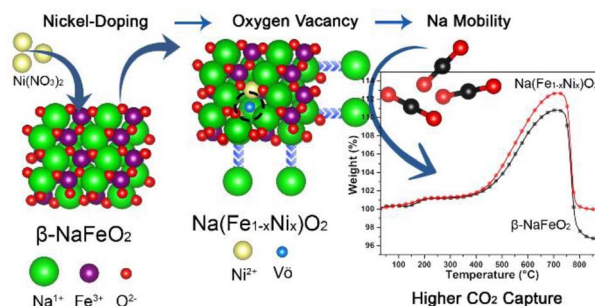
Jianguo Han, Zhixin Zhang, Zhuoran Xu, Lunhua He, Feiran Shen, Yehong Wang, Xuebin Liu, Meiling Guo, Zaihong Guan and Feng Wang*



10938

Unveiling the different physicochemical properties of M-doped β -NaFeO₂ (where M = Ni or Cu) materials evaluated as CO₂ sorbents: a combined experimental and theoretical analysis

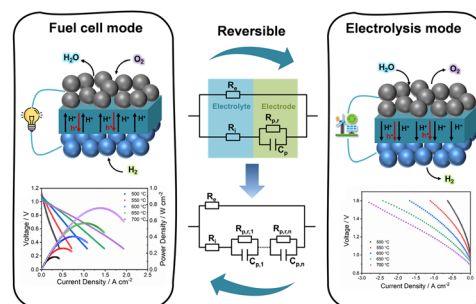
Nayeli Gómez-Garduño, Daniel G. Araiza,* Christian A. Celaya,* Jesús Muñiz and Heriberto Pfeiffer



10955

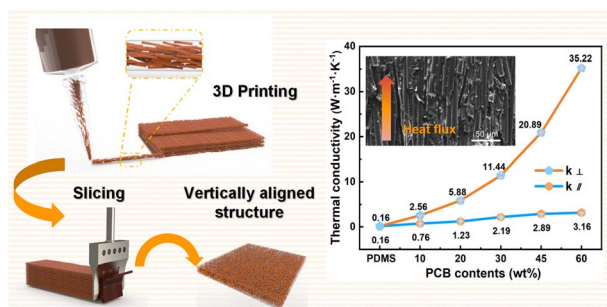
A double perovskite oxygen electrode in Zr-rich proton conducting ceramic cells for efficient electricity generation and hydrogen production

Haoyu Zheng,* Matthias Riegraf, Noriko Sata and Rémi Costa*



PAPERS

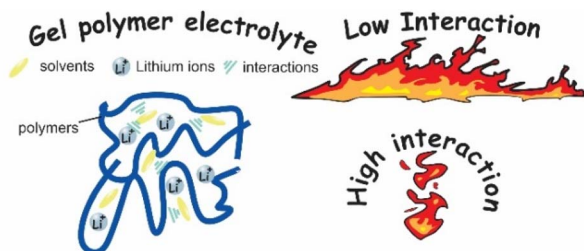
10971



Ultrahigh thermal conductive polymer composites by the 3D printing induced vertical alignment of carbon fiber

Zhenbang Zhang, Maohua Li, Yandong Wang, Wen Dai, Linhong Li, Yapeng Chen, Xiangdong Kong, Kang Xu, Rongjie Yang, Ping Gong, Jianxiang Zhang, Tao Cai, Cheng-Te Lin, Kazuhito Nishimura, Hao Nan Li,* Nan Jiang* and Jinhong Yu*

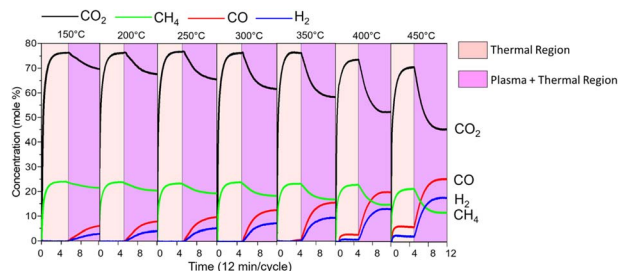
10984



Relationship between the intermolecular interactions of carbonyl (PC) with nitrile (HNBR) functional groups and the flash point of a gel polymer electrolyte

Caroline St-Antoine, David Lepage, Gabrielle Foran, Arnaud Pr  b  , David Aym  -Perrot, Dominic Rochefort and Micka  l Doll  *

10993



Non-equilibrium plasma-assisted dry reforming of methane over shape-controlled CeO₂ supported ruthenium catalysts

Md Robayet Ahasan, Md Monir Hossain, Xiang Ding and Ruigang Wang*

CORRECTION

11010

Correction: Promoting nitrate electroreduction to ammonia over A-site deficient cobalt-based perovskite oxides

Fulong Liu, Zhenbao Zhang, Lei Shi, Yu Zhang, Xiaoyu Qiu, Yuming Dong,* Heqing Jiang, Yongfa Zhu* and Jiawei Zhu*

