

Journal of Materials Chemistry A

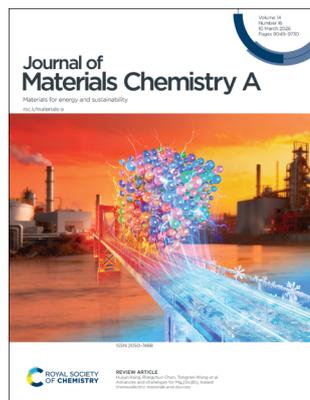
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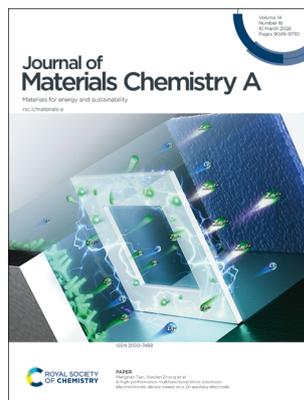
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See Huijun Kang, Rongchun Chen, Tongmin Wang *et al.*, pp. 9065–9087. Image reproduced by permission of Huijun Kang from *J. Mater. Chem. A*, 2026, 14, 9065.



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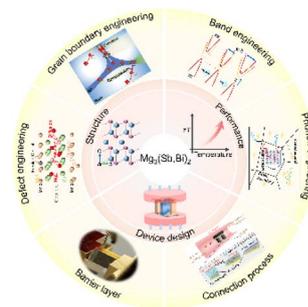
See Menghan Tian, Xiaolan Zhong *et al.*, pp. 9207–9214. Image reproduced by permission of Xiaolan Zhong from *J. Mater. Chem. A*, 2026, 14, 9207.

REVIEWS

9065

Advances and challenges for $Mg_3(Sb,Bi)_2$ -based thermoelectric materials and devices

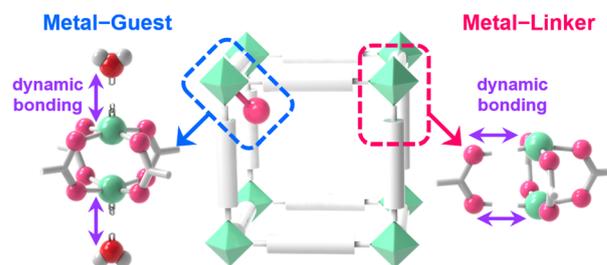
Yu Yan, Wen Zhang, Huijun Kang,* Zongning Chen, Enyu Guo, Rongchun Chen* and Tongmin Wang*



9088

Dynamic coordination bonding in metal–organic frameworks: fundamental concepts and emerging applications

Sun Ho Park, Byong June Kim, Jaehyeuk Choi, Inhoo Kim and Nak Cheon Jeong*



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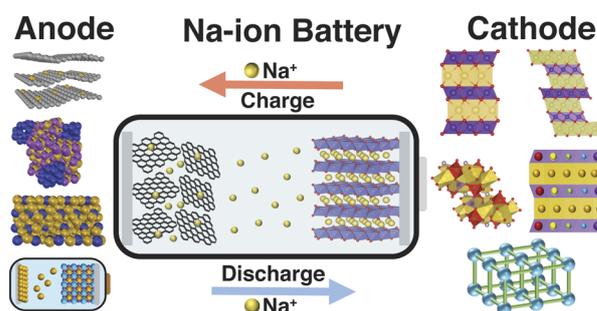
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REVIEWS

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Sodium-ion battery development since 2020 with future perspectives

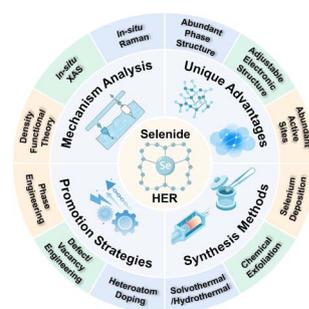
Abu Faizal Abdul Salam, Xiaoran Zheng, Zhao Chen, Yi Liao, Do Kyung Kim, Sajjad Seifi Mofarah, Pramod Koshy, Neeraj Sharma* and Dong Jun Kim*



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Tao Wen, Yi Zheng, Jing Zou and Haitao Wang*



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Smart self-healing polymers: innovations in material design and applications for electronic skin and energy devices

Sundararajan Ashok Kumar, Manoj Singh Yadav, Subrata Karmakar, Aniruddha Kundu, Vinodkumar Etacheri, Satyajit Ratha, Vijay Kumar Pal* and Surjit Sahoo*

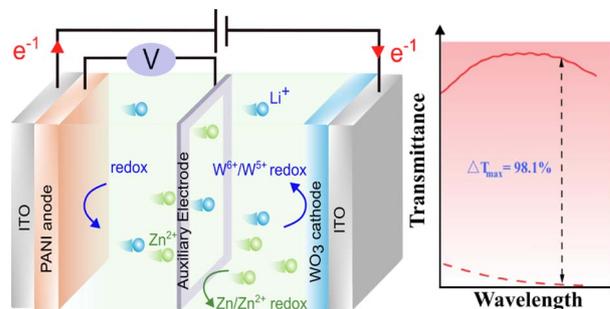


PAPERS

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A high-performance multifunctional three-electrode electrochromic device based on a Zn auxiliary electrode

Zinan Zhao, Menghan Tian,* Yue Wang, Zelin Lu, Menghao Ma, Fan Wang and Xiaolan Zhong*



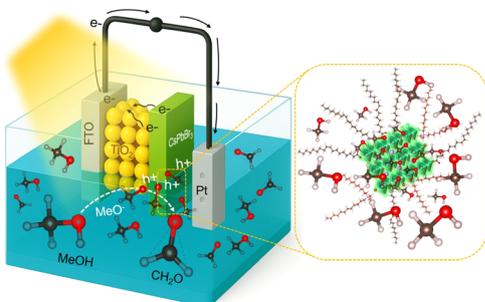
9215



B-site engineered medium-entropy perovskite as a dual-purpose material enabling piezoelectric energy harvester and supercapacitor electrode applications

Ezhilarasan Murugesan, Sanath Kumar and Yen-Pei Fu*

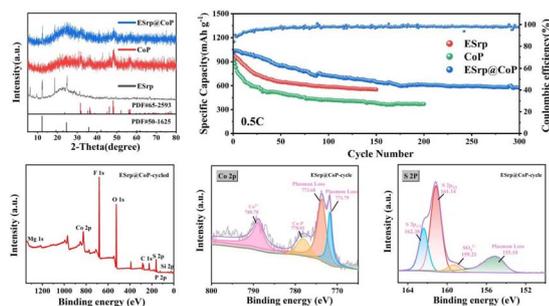
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Electrophoretic fabrication of alcohol-stable CsPbBr₃ nanocrystalline photoelectrodes for formaldehyde production

Andrés F. Gualdrón-Reyes,* Camilo A. Mesa,* Seul-Yi Lee, Roser Fernández-Climent, Sofia Masi, Federica Aiello, Federica Balzano, Gloria Uccello-Barretta, Ignacio Utreras-Asenjo, Jeevan Torres, Samiksha Mukesh Jain, Carina Pareja-Rivera, Hyo Joong Lee, Jhonatan Rodríguez-Pereira, Sixto Giménez* and Iván Mora-Seró*

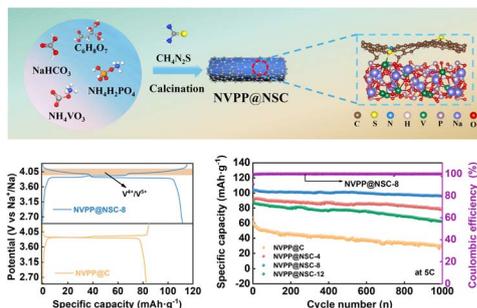
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Integrating polysulfide adsorption and electrocatalysis on a mineral-based separator for high-rate and long-life Li-S batteries

Yong Wang, Li Sun,* Jiawen Cui, Jiayang Li, Hanqi Sun, Wenjing Li and Libing Liao

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Creating multi-electron reactions in a NASICON-type Na₇V₄(P₂O₇)₄(PO₄) cathode for sodium-ion batteries by activating reversible V⁴⁺/V⁵⁺ redox reactions

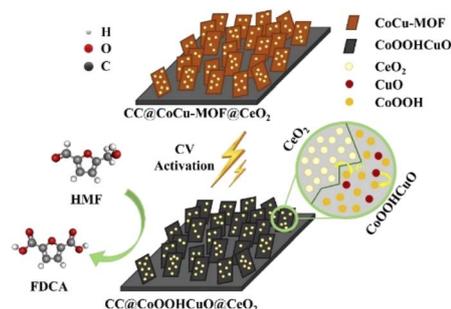
Haohang Fan, Hualing Tian, Yanjun Cai, Yanhui Zhang, Qingrong Kong, Yuanyuan Che, Jiayao Zhu, Yang Zhang, Yingbo Wang, Xiang Yao* and Zhi Su*



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Interfacial electronic modulation in electrochemically reconstructed CoOOHCuO@CeO_2 for efficient electrooxidation of 5-hydroxymethylfurfural

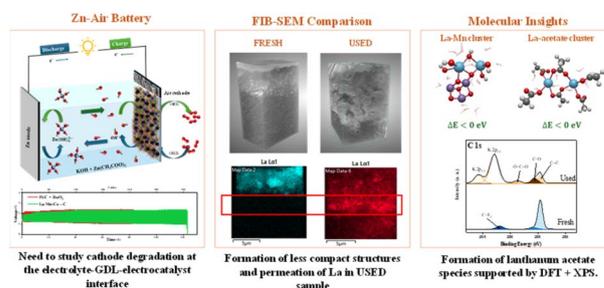
Haokun Pan, Yifei Ye, Yetong Liu, Cheng Zhang and Xiubing Huang*



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Unraveling the interfacial degradation mechanism of a metal oxide electrocatalyst/gas diffusion layer in Zn-air batteries through FIB-SEM analysis

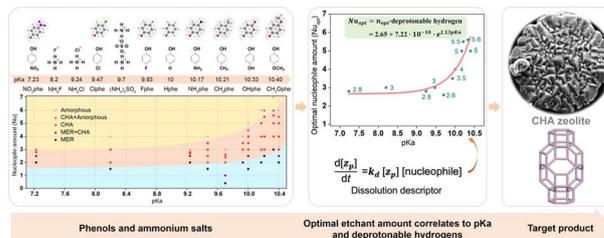
M. García-Rodríguez, L. González-Souto, J. Hernández-Saz, J. Juan-Juan, J. J. Calvino, D. Cazorla-Amorós and E. Morallón*



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Convergent modulation of CHA zeolites using substituted phenols and ammonium salts

Yanpeng Chen, Mei Hong,* Rongshu Zhu* and Shihe Yang*



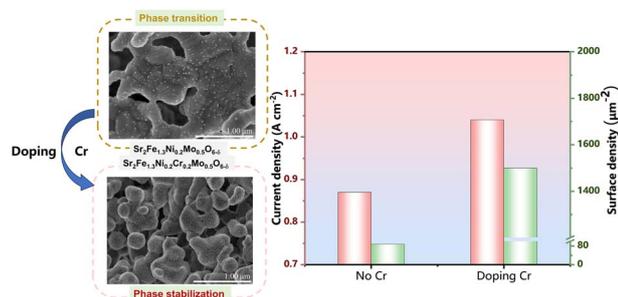
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A 3D polymorphic Cu-based ultramicroporous MOF capable of CO_2 Uptake and Conversion

Mariangela Oggianu, Fabio Manna, Valentina Mameli, Carla Cannas, Virginia Guiotto, Valentina Crocellà, Santiago Quesada, Daniele Sassone, Adriano Sacco, Irene I. Gallo Stampino, Raiana Tomazini de Oliveira, Santiago Capelo, Jose Ramon Galan-Mascaros, Norberto Masciocchi* and Maria Laura Mercuri*



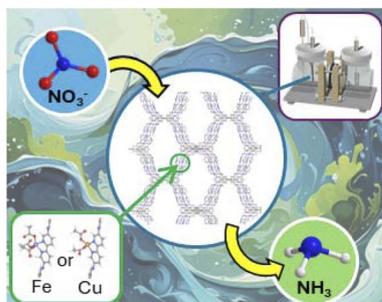
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Cr doping regulates FeNi alloy nanoparticle exsolution on Sr₂Fe_{1.1}Ni_{0.2}Cr_{0.2}Mo_{0.5}O_{6-δ} cathode to facilitate CO₂ electrolysis

Yongshu Wang, Yujia Han, Zuwei Luo, Xiaohui Hu, Wendian Shi, Minghao Ma, Yuxiang Shen, Houfu Lv,* Guoxiong Wang* and Xinhe Bao

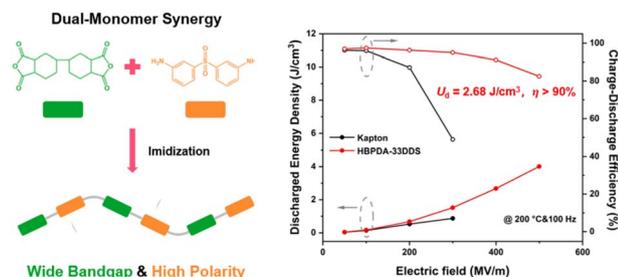
9324



Efficient ammonia synthesis via electrocatalytic nitrate reduction over a [8 + 2]-connected three-dimensional metal-bipyridine covalent organic framework

Tsukasa Irie, Ayumu Kondo, Kai Sun, Kohki Sasaki, Mika Nozaki, Shiho Tomihari, Kotaro Sato, Tokuhisa Kawawaki, Yu Zhao,* Saikat Das* and Yuichi Negishi*

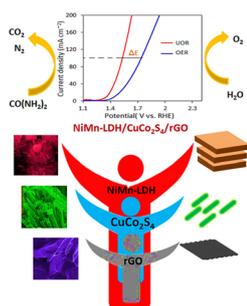
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Synergistic regulation of dual monomers for constructing high bandgap and high-polarity polyimide with high-temperature capacitive energy storage performance

Chuanjia Jiao, Jiayan Li, Caixia Wan, Jiawei Zou* and Shifang Luan*

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Trifunctional noble-metal-free multi-site electrocatalysts based on NiMn-LDH/CuCo₂S₄/rGO for energy-saving hydrogen generation via the UOR/HER/OER

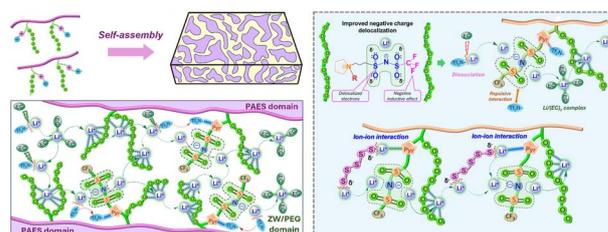
Reza Abazari,* Joanna Goscianska, Malek Naderi,* Min Liu* and Soheila Sanati*



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Engineering of Li⁺-selective quasi-solid electrolytes via zwitterion and poly(ethylene glycol) co-grafting on poly(arylene ether sulfone) for high-performance lithium–sulfur batteries

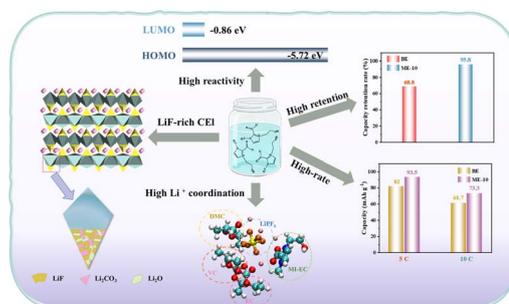
Anh Le Mong, Jong Chan Shin, Minjae Lee and Dukjoon Kim*



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Boosting lithium-ion battery performance: the role of a novel carbonate-based ionic liquid electrolyte additive

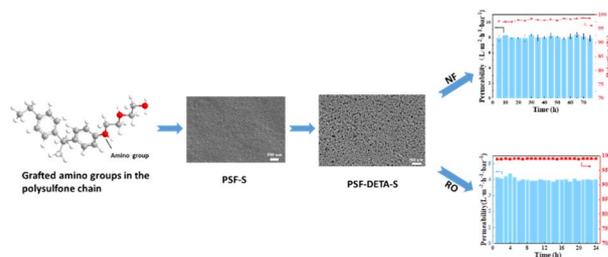
Boyun Wang, Na Ju, Zhigang Zhang, Dongxiang Li, Chen Yang, Suyan Niu, You Fu, Wenlong Zhang, Zilong Liu, Lei Shi,* Guangwen Xu* and Hongbin Sun*



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Thermally stable polysulfone nanofiltration/reverse osmosis membranes via amino grafting

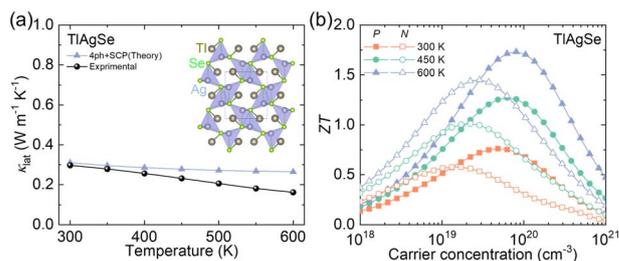
Ze-Min Hou, Hao Tang, Hasan Ali Hayder, Dai-Feng Song, Min Li, Hao-Ran Zuo* and Ming Duan*



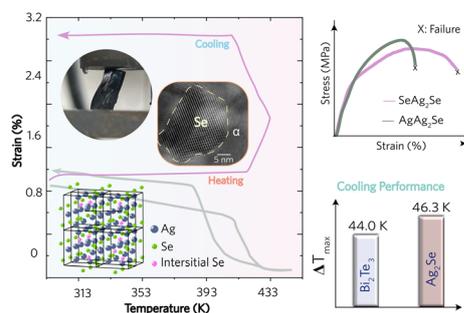
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Four-phonon scattering and multi-valley characteristics induce high thermoelectric performance in TlAgSe: a first-principles investigation

Zhaoying Wang,* Shaoshuai Guo, Yinsheng Li, Maixia Fu, Guangtao Wang and Zhenghao Hou*



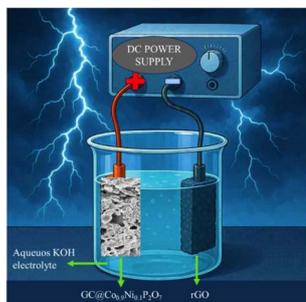
9420



Self-doping enables flexible Ag_2Se bulk materials for room-temperature thermoelectric generators and coolers

I.-Lun Jen,^{*} Wan-Ting Chiu,^{*} Li-Yan Lee, Kuang-Kuo Wang, Masaki Tahara, Hideki Hosoda and Hsin-Jay Wu^{*}

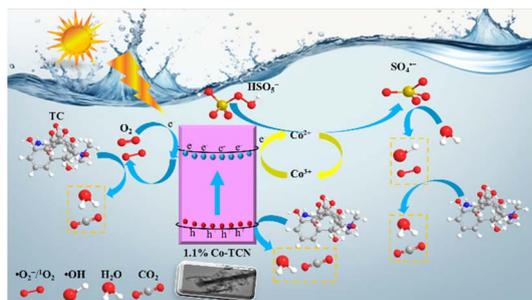
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Tuning surface redox chemistry through trace Ni doping in cobalt pyrophosphate ($\text{Co}_2\text{P}_2\text{O}_7$) for high-performance supercapacitors: experimental and theoretical insights

Kismat K. Sahoo, Abhisek Padhy, Ashutosh Sahoo and J. N. Behera^{*}

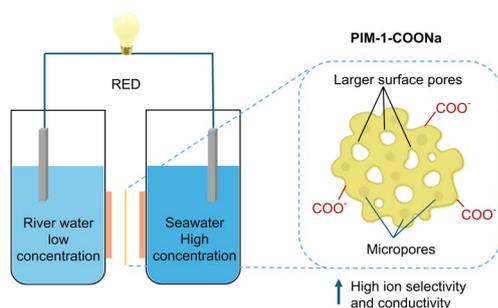
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Architecting an 'electron highway': cobalt-doped tubular carbon nitride for superior photocatalytic PMS activation

Jiani Qin,^{*} Minna Duan, Jianping Zhang, Wen Chen, Tingjiang Yan, Chuanyi Wang^{*} and Bao Pan^{*}

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Carboxylate-functionalized polymers of intrinsic microporosity for high-performance osmotic power conversion

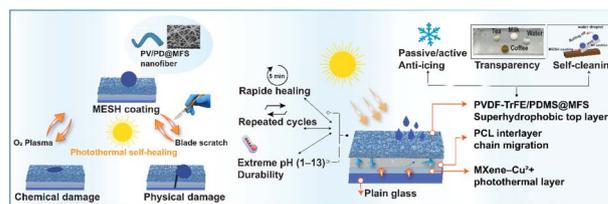
Changhao Li, Xianxian Mei, Hanwen Yang, Minghui Cheng, Xin Zhou, Zipei Zhang, Mi Lu and Jianping Lin^{*}



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Multifunctional self-healing superhydrophobic coating with rapid sunlight-induced recovery and photothermal anti-icing capability

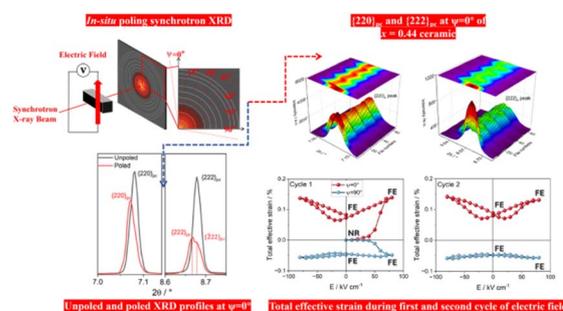
Alix Marcelle Sansi Seukep, Damas Rossel Pandzou, Xuan Zhou, Syeda Andleeb Zahra Naqvi, Dhandapani Kuzhandaivel, Abilash Rosario Arockiyasamy, Md Salman Farsee, Zixiang Weng, Xiaohong Ding* and Lixin Wu*



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Irreversible phase transitions in BiFeO₃-SrTiO₃ lead-free piezoceramics

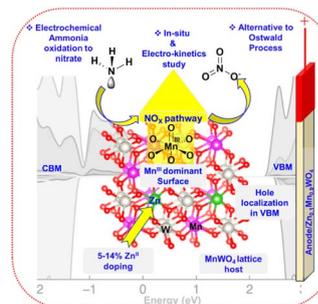
Songhao Fu, Muhammad Wasim, Hareem Zubairi, Xiaojiao Liu, Annette K. Kleppe, Xinzhen Wang, Antonio Feteira, Ge Wang* and Zhilun Lu*



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Enhancing valence-band charge localization via zinc doping into MnWO₄ to promote selective ammonia electrooxidation

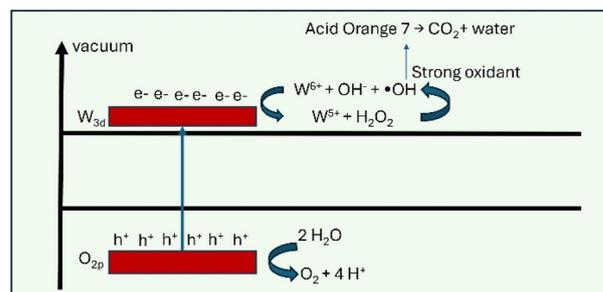
Hirak Kumar Basak, Bhawna Kamboj, Jayanta Patra, Dibyajyoti Ghosh and Biswarup Chakraborty*



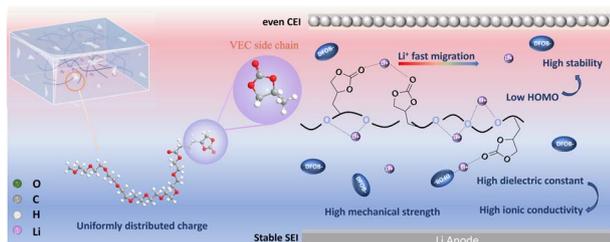
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In situ photo-Fenton-like reaction and oxygen evolution through polaron-mediated WO₃

Ardiansyah Taufik,* Akira Yoko,* Chunli Han, Wahyudiono, Satoshi Ohara and Tadafumi Adschiri*



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Tailored charge distribution modulated by cyclic carbonates enabling the development of high-performance PEO-based solid electrolytes

Qiuying Xu, Zunxiang Hu, Yanning Shangguan, Lina Liu, Rongmin Lu, Lijuan Zhang,* Xuehui Shangguan,* Lijun Gao,* Mengmeng Liu, Haixin Zhang, Huanqi Yao, Qinglei Wang* and Faqiang Li*

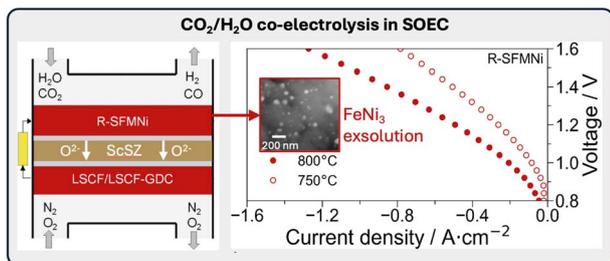
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Highly conductive ester-based solid electrolyte exhibiting remarkable stability for safe, sustainable, and high-performance lithium metal batteries

Yunfan Shao, Wanlin Chen and Cristina Iojoiu*

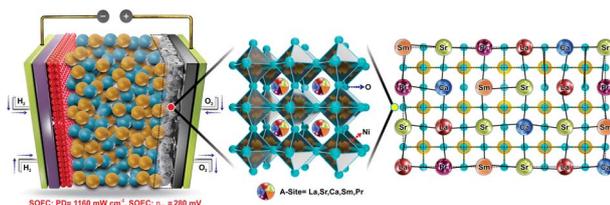
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Boosting solid oxide H₂O and CO₂ co-electrolysis on Sr_{2-x}Fe_{1.5-y}Mo_{0.5}Ni_yO_{6±δ} by *in situ* exsolution of FeNi alloy nanoparticles

J. Roelf F. Maring, Wisse M. Hersbach, Spyridon Zafeiratos, Marc C. A. Stuart, Aayan Banerjee, Paolo P. Pescarmona and Vasileios Kyriakou*

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Entropy-mediated lattice strain in a Ruddlesden-Popper perovskite oxide for highly active and bifunctional oxygen electrocatalysis

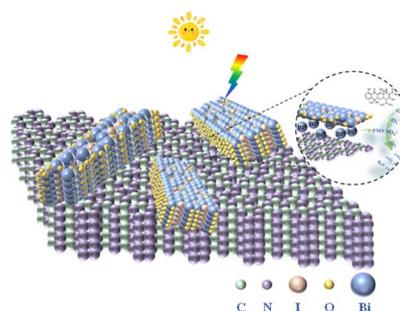
Taimoor Raza, Sining Yun,* Naveed Mushtaq, Muhammad Akbar, Abdullah Nasir, Yanbei Liu, Muhammad Qadeer and Rizwan Raza



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Switching peroxomonosulfate activation to a non-radical dominant pathway by a photo-driven Bi⁰ mediator in an S-scheme heterojunction

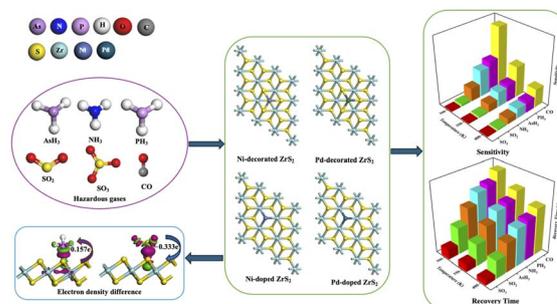
Chenyu Fan, Chaofan Yuan, Lu Gao, Pengwei Jia, Yihe Zhang, Hongwei Huang and Na Tian*



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Tailoring the gas sensing properties of ZrS₂ monolayers through Ni and Pd modifications: a DFT study

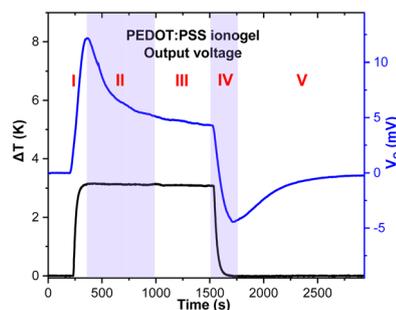
Jahirul Islam and Md. Tawabur Rahman*



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Continuous heat harvesting by an ionogel mixed with PEDOT:PSS under both fluctuated and steady temperature gradients

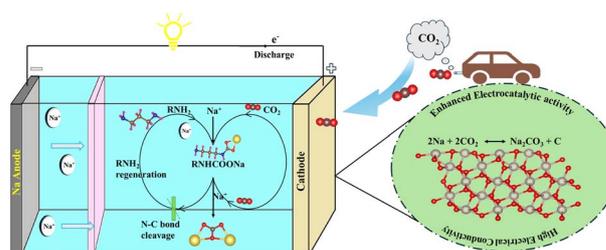
Yu Wu, Qi Qian, Cheng Xu, Zhijun Chen, Kun Zhang, Xinran Du and Jianyong Ouyang*



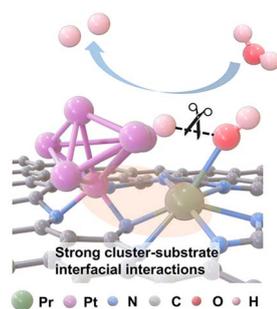
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Mechanistic insights into CO₂ capture and electrochemical conversion in nonaqueous Na–CO₂ batteries

Rahul Jayan, Satheesh Mani and Md Mahbulul Islam*



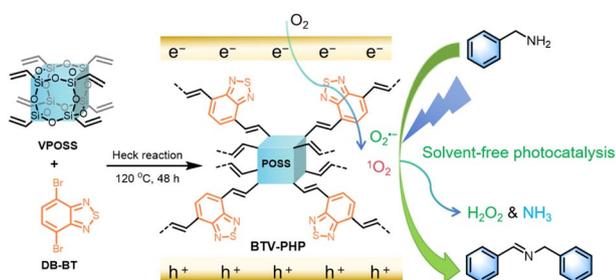
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Synergy of rare earth single atoms and Pt nanoclusters@N-doped carbon for improved alkaline hydrogen evolution

Peng Wang, Ping Bai, Xiao Han, Jiarong Mu, Min Li, Yihua Zhao, Jing Xu, Xudong Liu, Zhinan Xie, Yilin Wang, Fenghua Bai,* Jinlu He,* Yiguo Su* and Ling Huang*

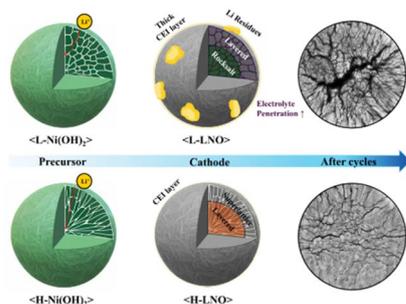
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A benzothiadiazole-vinyl-linked POSS porous hybrid polymer enables photocatalytic oxidative coupling of amines in air

Yunjie Mao, Jinfeng Yu, Qing Shi, Xiaomeng Bai, Yulong Lin, Yifan Chen, Zhouyang Long* and Guojian Chen*

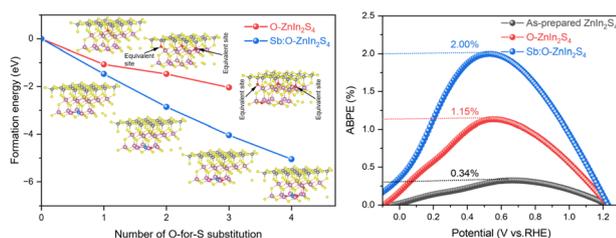
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Modulating (001) plane growth in $\beta\text{-Ni(OH)}_2$ precursors: a pathway to controlling lithiation kinetics and enhancing the structural integrity of LiNiO_2

Chan Hwi Kim, Yu Bin Choi, Doo Seok Kwon, JinHa Shim and Jin Ho Bang*

9657



Boosting the photoelectrochemical performance of ZnIn_2S_4 photoanodes via antimony-induced defect and surface homojunction engineering

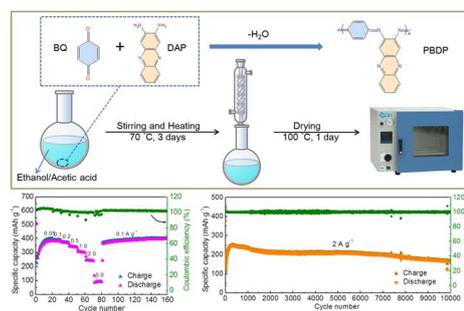
Yequan Xiao, Niu Wang, Ziyi Zhang, Yujie Zou, Bowen Li, Zeyu Fan, Ronghua Li, Yulong Qiao, Ting Xiao, Lihua Jiang, Haijiao Xie, Jingfu He, Xiaobo Chen, Yanbo Li, Changli Li* and Xinyu Tan*



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A phenazine-based organic polymer for long-life sodium storage

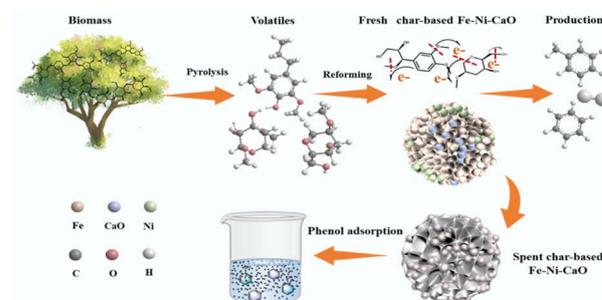
Cuicui Li and Qiyun Pan*



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Biomass pyrolysis with a Fe-Ni-CaO char-based catalyst for efficient green hydrogen generation and bio-oil upgrading via coupled $-H/O-H$ activation

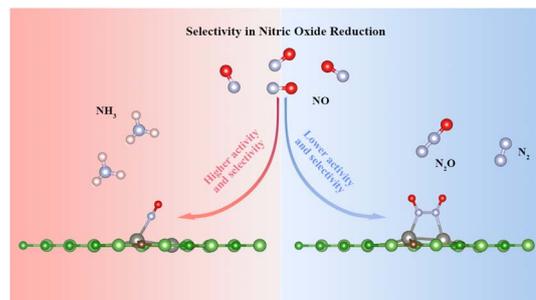
Qiuxiang Lu, Yao Wang, Qi Cao, Gang Wu and Huiyan Zhang*



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First-principles study on screening diatomic catalysts for electrocatalytic NO reduction on single-layer BAs

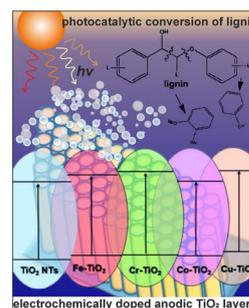
Pei Shi, Long Lin,* Xiangyu Guo* and Shengli Zhang*

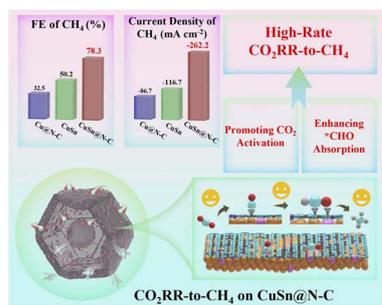


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Selective photocatalytic conversion of lignin via metal-doped anodic TiO₂ nanotubes

Sabiha Sultana,* Krzysztof Szczubiatka, Marcin Pisarek, Grzegorz D. Sulka and Karolina Syrek*





Synergistic tuning of CO₂ activation and *CHO adsorption enables high-rate electrocatalytic CO₂ reduction to CH₄ on a CuSn@N-C catalyst

Chengyu Qin, Qiuqi Zhou, Wenjing Li, Siyi Sun, Li-Xia Liu,*
Changwei Pan,* Qingyu Gao and Xiguang Han*

