

Journal of Materials Chemistry A

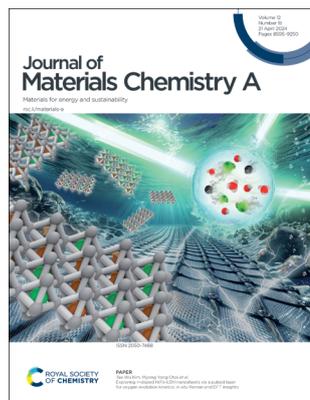
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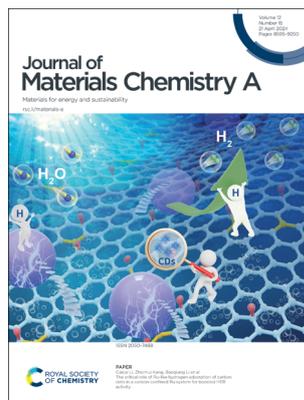
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Cover

See Tae Wu Kim, Myong Yong Choi *et al.*, pp. 8694–8706. Image reproduced by permission of Myong Yong Choi from *J. Mater. Chem. A*, 2024, 12, 8694.



Inside cover

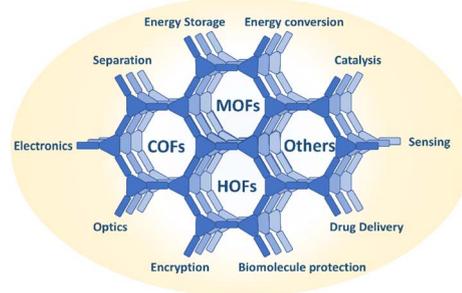
See Caicai Li, Zhenhui Kang, Baoqiang Li *et al.*, pp. 8707–8717. Image reproduced by permission of Baoqiang Li from *J. Mater. Chem. A*, 2024, 12, 8707.

EDITORIAL

8613

Introduction to functional framework materials

Paolo Falcaro,* Patricia Horcajada and Dan Li

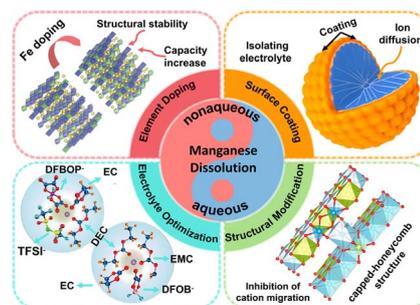


REVIEWS

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Rejuvenating manganese-based rechargeable batteries: fundamentals, status and promise

Weizhai Bao,* Hao Shen, Yangyang Zhang, Chengfei Qian, Dingyu Cui, Jingjie Xia, He Liu, Cong Guo, Feng Yu, Jingfa Li* and Kaiwen Sun*



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Fundamental questions
Elemental answers

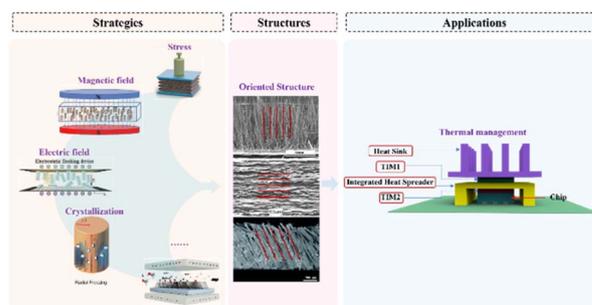


REVIEWS

8640

Enhanced thermal management in electronic devices through control-oriented structures

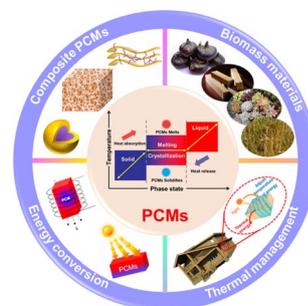
Shujian Cheng, Xiaoxiao Guo, Weiwei Cai,* Yufeng Zhang* and Xue-ao Zhang*



8663

Research progress of biomass materials in the application of organic phase change energy storage materials

Bowen Liu, Guocheng Lv,* Tianming Liu, Meng Liu, Jianhua Bian, Qinda Sun and Libing Liao*

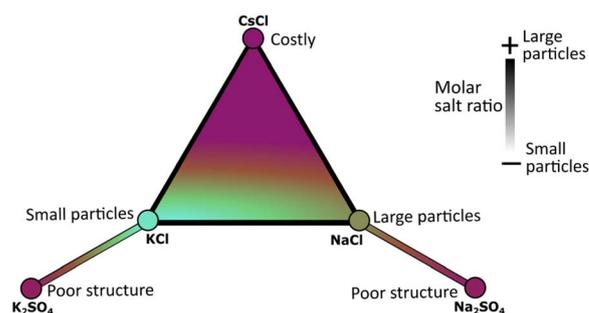


COMMUNICATIONS

8683

Effect of salt selection and molar ratio in molten salt synthesis of single-crystalline LiNiO₂

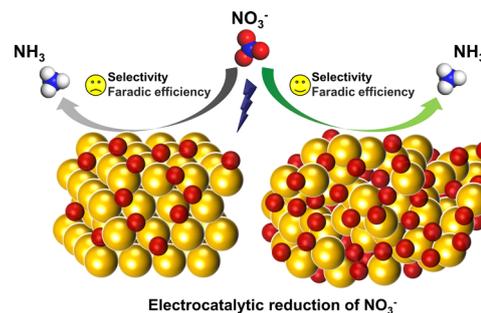
Wessel van den Bergh,* Rui Yao, Ruizhuo Zhang, Aleksandr Kondrakov, Jürgen Janek and Torsten Brezesinski*



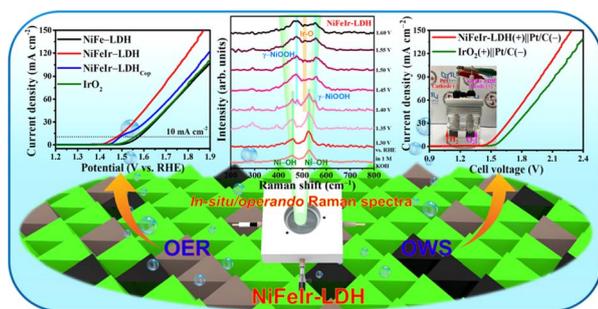
8689

Electrochemical nitrate reduction for ammonia production: amorphous or crystalline oxidized copper catalyst?

Quanxiao Peng, Dandan Xing, Liuqi Dong, Yuhan Fu, Jixue Lu, Xiaoyu Wang,* Changhong Wang* and Chunxian Guo*

Electrocatalytic reduction of NO₃⁻

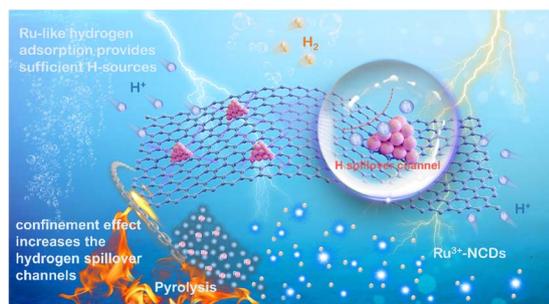
8694



Exploring Ir-doped NiFe-LDH nanosheets via a pulsed laser for oxygen evolution kinetics: *in situ* Raman and DFT insights

Sieon Jung, Raja Arumugam Senthil, Ahreum Min, Anuj Kumar, Cheol Joo Moon, Gyeong Hwa Jeong, Tae Wu Kim* and Myong Yong Choi*

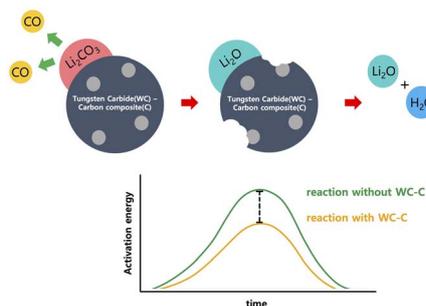
8707



The critical role of Ru-like hydrogen adsorption of carbon dots in a carbon-confined Ru system for boosted HER activity

Zonglin Liu, Honglei Zhang, Dongyue Liu, Yujie Feng, Dechang Jia, Caicai Li,* Qingfeng Sun, Yu Zhou, Zhenhui Kang* and Baoqiang Li*

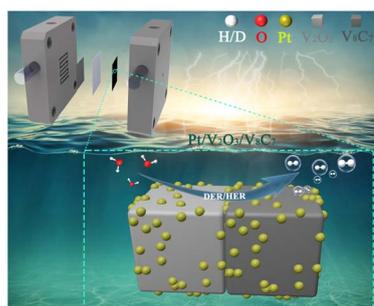
8718



Carbon-metal complex as a functional material that governs the efficient conversion of Li₂CO₃ to LiOH·H₂O

Sehwa Hong, Si-Wan Kim, Songeui Bae, Minsun Kim and Jun Kang*

8724



Synergistic electronic structure modulation of Pt using V₂O₃ and V₈C₇ for enhanced deuterium evolution performance

Yanfeng Li, Yuan Sheng, Liangbin Shao, Yuanan Li, Weiwei Xu, Shijie Zhang, Fangjun Shao* and Jianguo Wang*

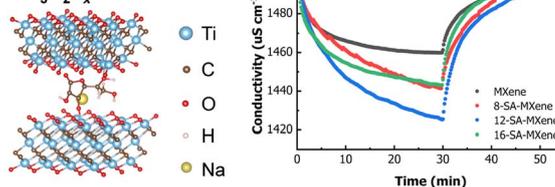


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A "two-birds-one-stone" strategy to enhance capacitive deionization performance of flexible $\text{Ti}_3\text{C}_2\text{T}_x$ MXene film electrodes by surface modification

Chuhan Huang, Tianqin Huang, Xue Liang Li,* Wei Zhou and Meng Ding*

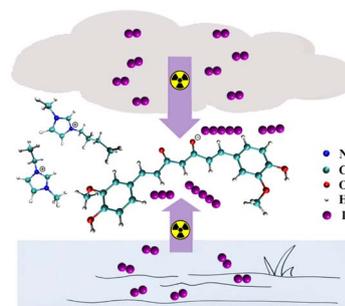
Sodium Ascorbate-modified $\text{Ti}_3\text{C}_2\text{T}_x$ MXene



8747

Enhanced iodine capture by the hydrogen bond reconstruction strategy

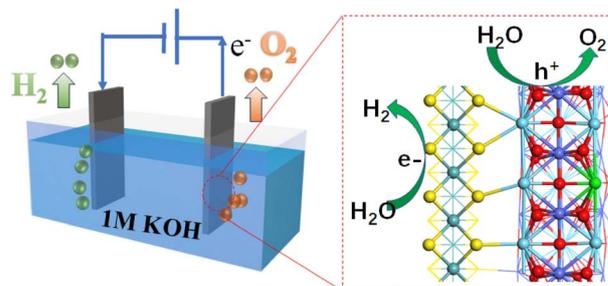
Ling-Qiong Gou, Yuan-Hao Wang, Shuang-Long Wang, Jia-Ying Liu, Xin Xin, Xin-Hong Xu, Song Qin, Ling He* and Guo-Hong Tao*



8757

An interface engineering strategy of MoS_2 /perovskite oxide as a bifunctional catalyst to boost overall water splitting

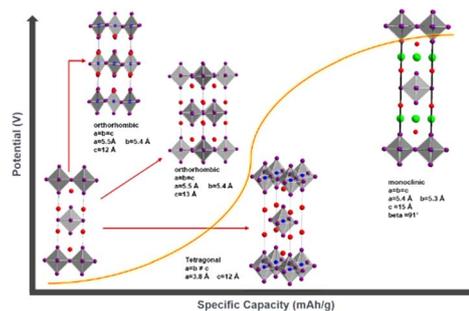
Ya-Nan Zhao, Ning Sun, Siqi Xu, Shengkang Min, Huilong Dong,* Jun Li, Changhai Liu* and Zhidong Chen*



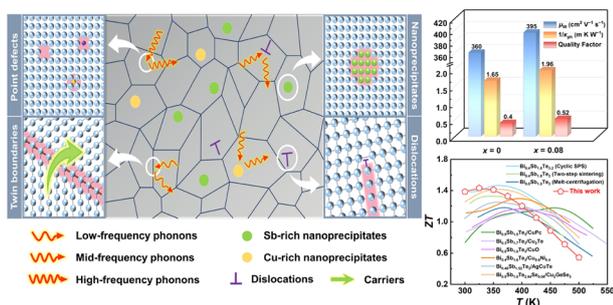
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Insights into the first multi-transition-metal containing Ruddlesden–Popper-type cathode for all-solid-state fluoride ion batteries

Vanita Vanita, Aamir Iqbal Waidha, Sami Vasala, Pascal Puphal, Roland Schoch, Pieter Glatzel, Matthias Bauer and Oliver Clemens*



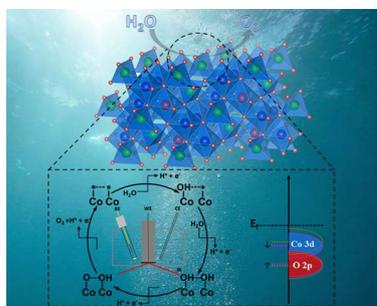
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Leveraging the Cu_2SnTe_3 additive for an improved thermoelectric figure of merit and module efficiency in $\text{Bi}_{0.5}\text{Sb}_{1.5}\text{Te}_3$ -based composites

Qiaoyan Pan, Kaikai Pang, Qiang Zhang,* Yan Liu, Huilie Shi, Jingsong Li, Wenjie Zhou, Qianqian Sun, Yuyou Zhang, Xiaojian Tan, Peng Sun, Jiehua Wu,* Guo-Qiang Liu and Jun Jiang*

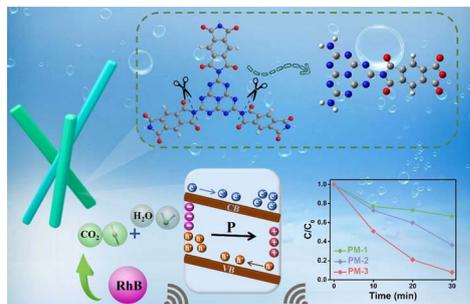
8796



Constructing oxygen vacancies by doping Mo into spinel Co_3O_4 to trigger a fast oxide path mechanism for acidic oxygen evolution reaction

Lang Sun, Min Feng, Yang Peng, Xu Zhao, Yiqun Shao, Xin Yue* and Shaoming Huang*

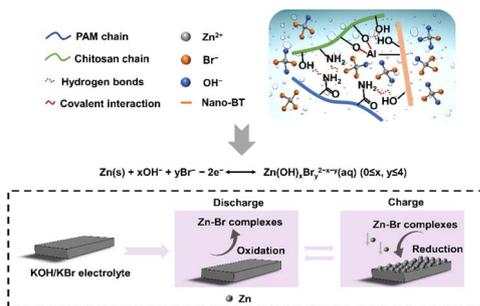
8805



Organic piezocatalyst polyimide: molecular structure tailoring and robust built-in electric field

Yan Zhang, Jingang Liu,* Cheng Hu, Xinxin Zhi, Zhen Pan, Hongjian Yu,* Jie Han and Hongwei Huang*

8815



Enhanced zinc reversibility enabled by zinc-bromide complexation of a quasi-solid electrolyte for high-performance flexible zinc-air batteries

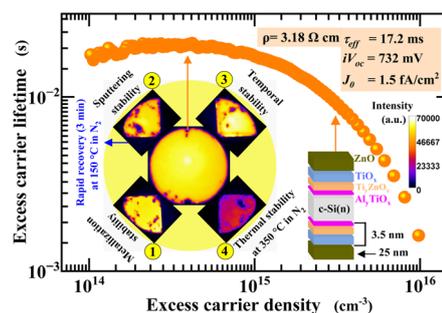
Zunhong Chen, Junhong Jin, Shenglin Yang, Guang Li* and Jingjing Zhang*



8826

Addressing the stability challenges of TiO_x-based passivating contacts for high-efficiency c-Si solar cells

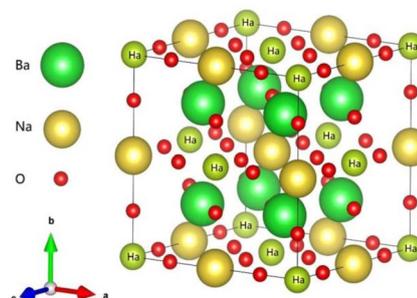
Mohamed M. Shehata,^{*} Thien N. Truong, Gabriel Bartholazzi, Daniel H. Macdonald and Lachlan E. Black^{*}



8846

First-principles investigation of the structural stability, electronic, and thermodynamic properties of Ba₂NaHaO₆ (Ha = Cl, Br, I) periodate double perovskites

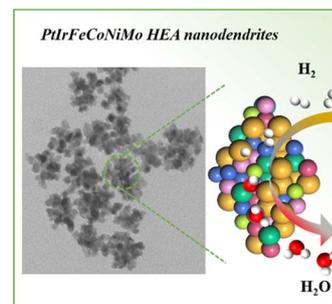
Zia Ur Rehman^{*} and Zijiang Lin^{*}



8862

PtIrFeCoNiMo high-entropy alloy nanodendrites for boosting the alkaline hydrogen oxidation performance

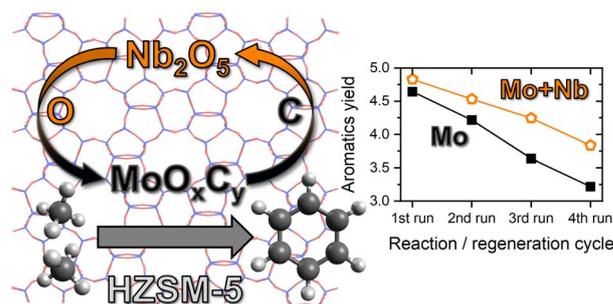
Xiaolong Ma, Shuang Zhang, Yaojiang Zhou, Wenli Lei, Yueming Zhai, Yuanmeng Zhao^{*} and Changsheng Shan^{*}



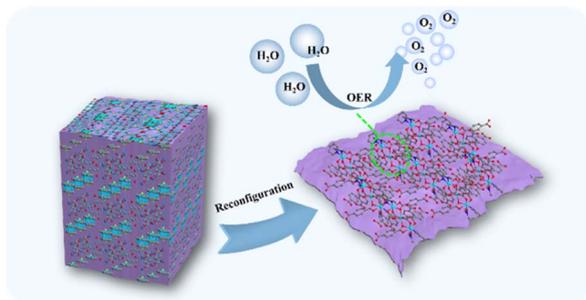
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Stabilization of intermediate Mo oxidation states by Nb doping enhancing methane aromatization on Mo/HZSM-5 catalysts

Stefan Peters, Stephan Bartling, Magdalena Parlinska-Wojtan, Alexander Wotzka, Ana Guilherme Buzanich, Sebastian Wohlrab and Ali M. Abdel-Mageed^{*}



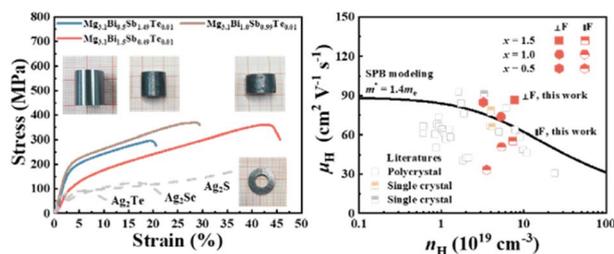
8885



Pyridine-induced caused structural reconfiguration forming ultrathin 2D metal–organic frameworks for the oxygen evolution reaction

Yang Liu,* Shuwei Deng, Shihui Fu, Xiaoteng Wang, Gang Liu and Haidong Yang*

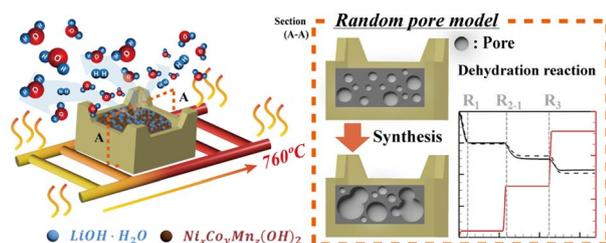
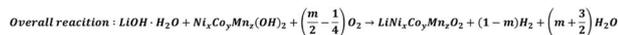
8893



Plastic $\text{Mg}_3(\text{Sb,Bi})_2$ -based thermoelectric compounds with enhanced texture *via* cold-deformation

Ziming Zhang, Zhiqiang Gao, Tingting Deng, Qingfeng Song,* Lidong Chen and Shengqiang Bai*

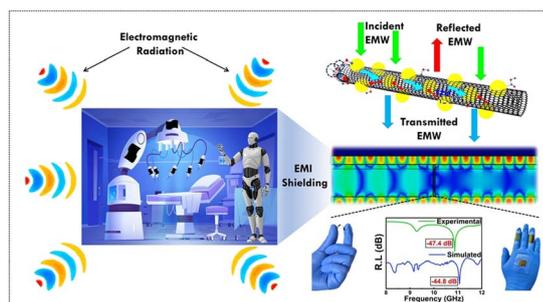
8900



Dehydration kinetics of the synthesis of high-nickel cathode materials used in lithium ion batteries

Jaeyoung Jeon, Minuk Kim, Min Young Hwang, Choongmo Yang and Jongsup Hong*

8914



Flexible and rigid spinel ferrite carboneous composite as a future of tunable absorption dominant cmWave shielding materials

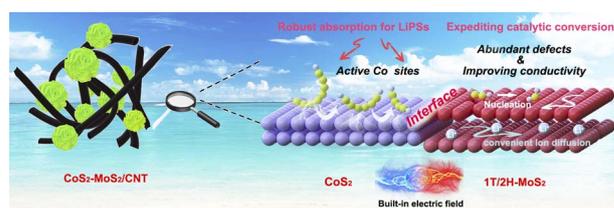
Vaishnavi Khade, Avanish Babu Thirumalasetty, Asmita Ajay Rathod, Yogesh Kumar Chaoukiker and Madhuri Wuppuluri*



8927

Interfacial engineering design induces enriched-defects expediting catalytic conversion kinetics of polysulfides

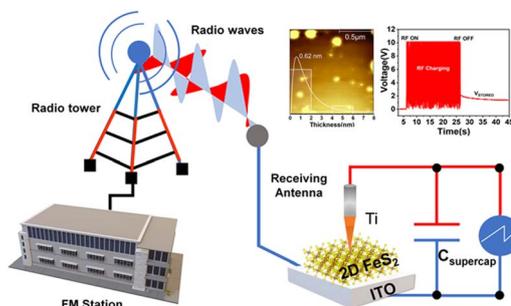
Guixin Zhang, Xiaorong Chen, Xinmeng Yu, Qingyu Li, Hongqiang Wang, Sijiang Hu, Juantao Jiang, Youguo Huang* and Zhaoling Ma*



8940

Giant Stark effect assisted radio frequency energy harvesting using atomically thin earth-abundant iron sulphide (FeS₂)

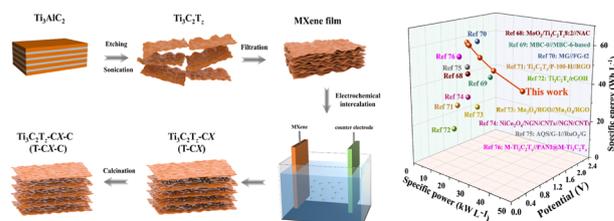
Karthik R., Appu Kumar Singh, Shreyasi Das, Suman Sarkar, Tarun Kumar Kundu, Swastik Kar, P. R. Sreeram* and Chandra Sekhar Tiwary*



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Enhancing ion storage and transport in Ti₃C₂T_z MXene via a "sacrificial cations" strategy

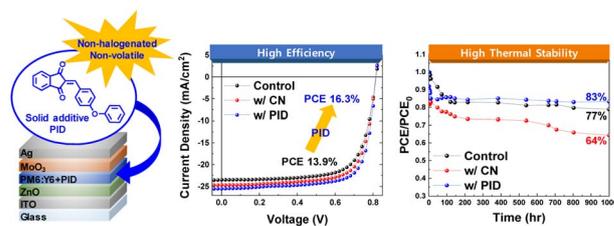
Xiaodan Yin, Wei Zheng,* Haifeng Tang, Li Yang, Peigen Zhang* and ZhengMing Sun*



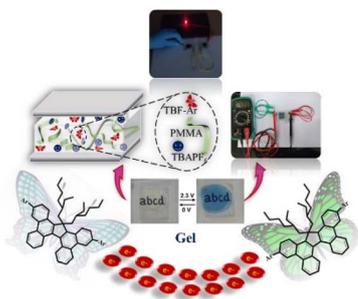
8963

Non-halogenated and non-volatile solid additive for improving the efficiency and stability of organic solar cells

Mi Choi, Hyeon-Seok Jeong, Jinho Lee, Yeonsu Choi, In-Bok Kim, Dong-Yu Kim, Hongkyu Kang* and Soo-Young Jang*



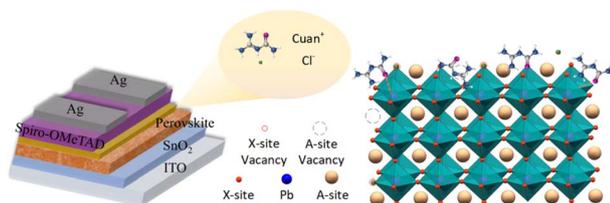
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Energy-efficient UV-to-NIR active smart electrochromic tetrabenzofluorene molecules

Panichiyil V. Navya and Srinivasan Sampath*

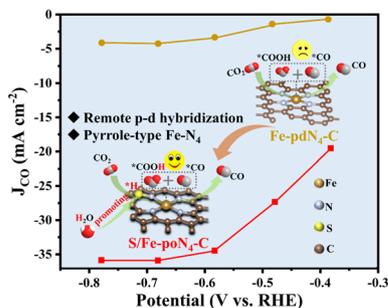
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Molecular engineering with CuanCl for effective optimization of a defective interface for wide-bandgap perovskite solar cells

Maoxia Xu, Rui Liu, Haoran Ye, Haorong Ren, Jinyu Li, Chen Deng, Zetan Zhang, Chengbin Yang, Kexin Hu, Xiaoran Sun* and Hua Yu*

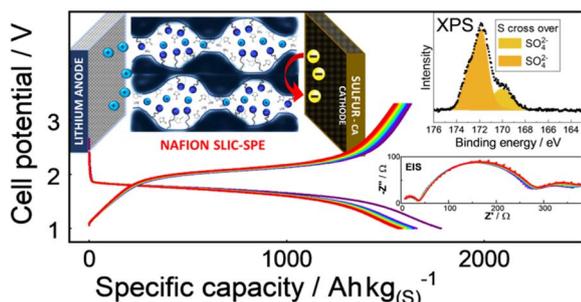
8991



Remote p-d orbital hybridization via first/second-layer coordination of Fe single atoms with heteroatoms for enhanced electrochemical CO₂-to-CO reduction

Ying Yang, Lizhen Chen, Zhenyan Guo, Shengqi Liu, Pei-dong Wu, Zhen Fang,* Kai Zhang and Hu Li*

9002



Carbonate swollen lithiated Nafion electrolyte for quasi-solid-state lithium-sulfur batteries

Brigitta Sievert,* Ernestino Lufrano, Martina Gerle, Mariarosaria Tuccillo, Indro Biswas, Cataldo Simari, Sergio Brutti, Maryam Nojabaei, Isabella Nicotera* and K. Andreas Friedrich



9017

Single-step synthesis of titanium nitride-oxide composite and Al-driven aging forecast for lithium-sulfur batteries

Ka Chun Li, Xuanming Chen, Aghil Sabbaghi, Chi Ho Wong,* Chak-yin Tang,* Frank Leung-Yuk Lam* and Xijun Hu*



9031

Anti-poisoned oxygen reduction reaction by rice-like Pd-Sb nanoparticles

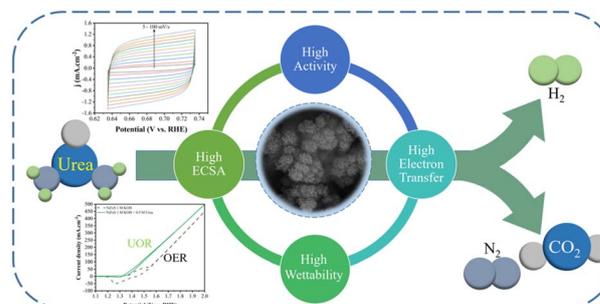
Hui Fu, Yao Chen, Shuanglong Lu, Zhe Zhang, Ting Zhu, Hanjun Li, Feili Lai,* Nan Zhang* and Tianxi Liu*



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Modulation of active surface sites on Ni-Fe-S by the dynamic hydrogen bubble template method for energy-saving hydrogen production

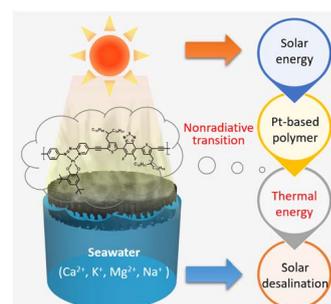
Amirreza Fathollahi, Taghi Shahrabi* and Ghasem Barati Darband*



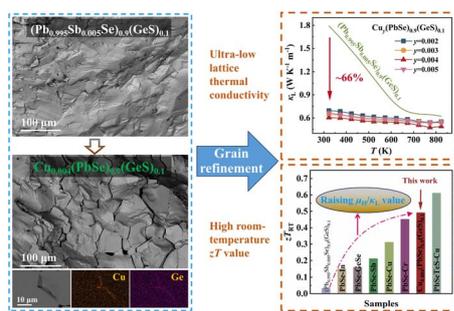
9055

A platinum-based photothermal polymer with intermolecular/ligand-to-ligand charge transfer for efficient and sustainable solar-powered desalination

Miao Zhang,* Md. Nahian Al Subri Ivan, Yingjie Sun, Zikang Li, Shuvra Saha, Safayet Ahmed, Huiying Liu, Yidi Wang, Yuen Hong Tsang* and Wai-Yeung Wong*



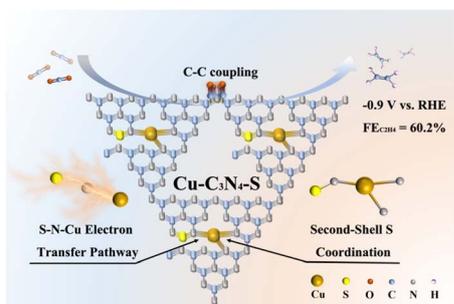
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Doping-induced grain refinement contributes to enhanced thermoelectric performance of n-type PbSe at room temperature

Canyang Zhao, Qian Deng, Wei Yuan, Xiang An, Wenjun Su, Zhengmin He, Yin Xie, Zhilong Zhao and Ran Ang*

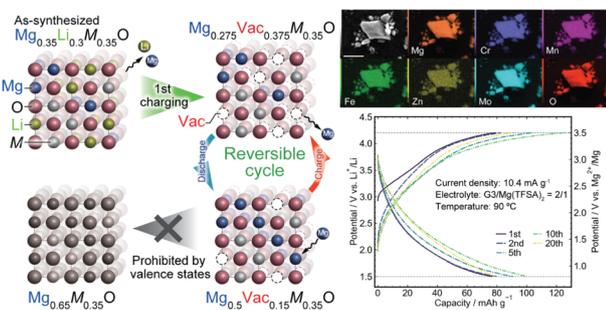
9075



Enhanced electrochemical CO₂-to-ethylene conversion through second-shell coordination on a Cu single-atom catalyst

Yi Shen,* Yongliang Pan, Huanyong Xiao, Haizhong Zhang, Chao Zhu,* Qile Fang, Yungui Li, Lun Lu, Liqun Ye and Shuang Song

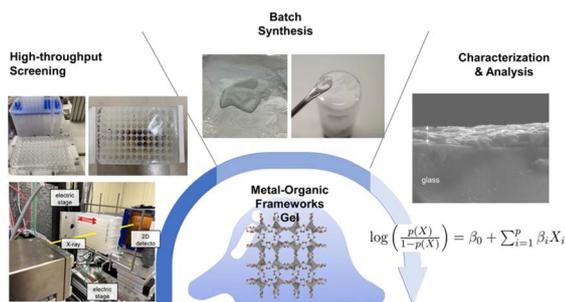
9088



Securing cation vacancies to enable reversible Mg insertion/extraction in rocksalt oxides

Tomoya Kawaguchi,* Masaya Yasuda, Natsumi Nemoto, Kohei Shimokawa, Hongyi Li, Norihiko L. Okamoto and Tetsu Ichitsuho

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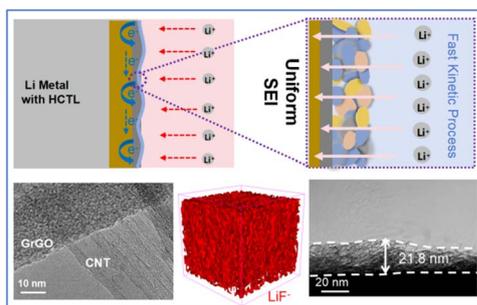


High-throughput screening and characterization of novel zeolitic imidazolate framework gels

Izuru Miyazaki, Yumi Masuoka, Keiichiro Oh-Ishi, Norihiko Setoyama and Mitsutaro Umehara*



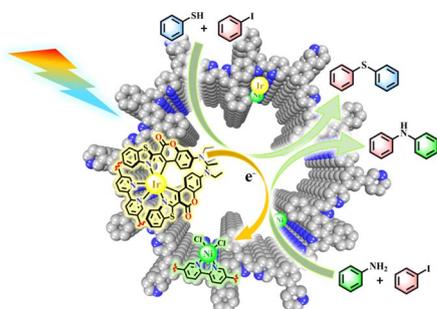
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High-flux charge transfer layer confers a solid electrolyte interphase with uniform and rich LiF for stable lithium metal batteries

Haijie Zhao, Yumeng Peng, Xianbin Liu,* Shibo Du, Yiyao Yu, Ting Liu, Yanhong Yin, Sayed Y. Attia, Yesheng Li and Ziping Wu*

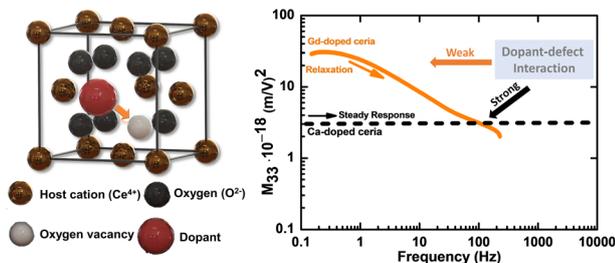
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Incorporation of Ir(C[^]N)₂(N[^]N)-NiCl₂ in a (N[^]N)-covalent organic framework for transcendent dual catalysis in photochemical cross-coupling synthesis

Yan-Lin Li, Fuke Wang, Jagadese J. Vittal, Peng Jin, Sheng-Li Huang* and Guo-Yu Yang*

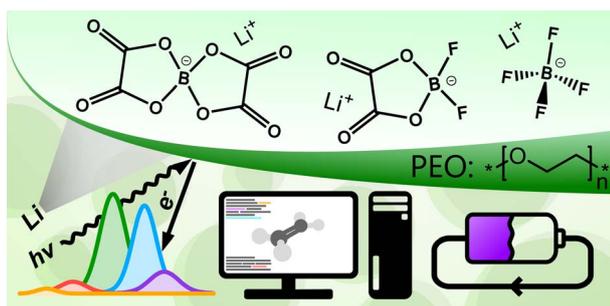
9173



Non-classical electrostriction in calcium-doped cerium oxide ceramics

Ahsanul Kabir, Victor Buratto Tinti, Simone Santucci, Maxim Varenik, Samuel Griffiths, Sebastian Molin, Igor Lubomirsky and Vincenzo Esposito

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Initial SEI formation in LiBOB-, LiDFOB- and LiBF₄-containing PEO electrolytes

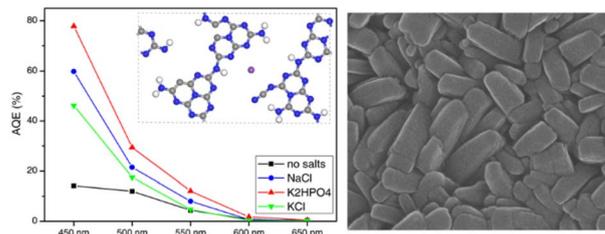
Edvin K. W. Andersson, Liang-Ting Wu, Luca Bertoli, Yi-Chen Weng, Daniel Friesen, Kenza Elbouazzaoui, Sophia Bloch, Ruslan Ovsyannikov, Erika Giangrisostomi, Daniel Brandell, Jonas Mindemark, Jyh-Chiang Jiang and Maria Hahlin*



9200

Molecular engineering of polymeric carbon nitride for photocatalytic hydrogen production with ultrahigh apparent quantum efficiency

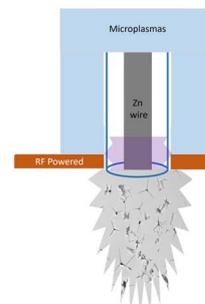
Haiyang Liu, Xiaolu Liu, Chengqun Xu,* Dongyu Wang, Dezhi Li, Jingyao Huang, Shengquan Wu, Zhichun Wang and Hui Pan*



9212

Non-equilibrium defect chemistry in oxygen-rich zinc oxide nano-tetrapods synthesized using atmospheric pressure microplasma

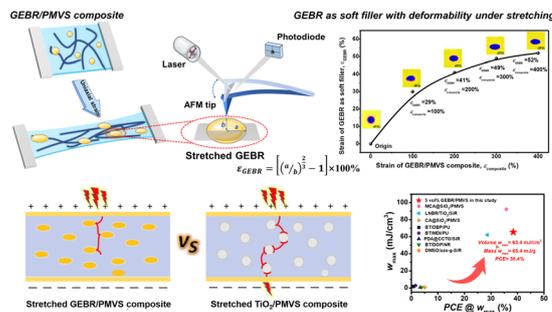
Dilli babu Padmanaban, Paul Maguire and Davide Mariotti*



9232

Largely enhanced energy harvesting performances of DEGs by constructing all-organic dielectric composites with a soft and deformable filler

Xueying Liu, Weibo Li, Yingjie Jiang, Nanying Ning* and Ming Tian*



CORRECTIONS

9241

Correction: Superhydrophobic and mechanical properties enhanced the electrospinning film with a multiscale micro-nano structure for high-efficiency radiation cooling

Lijing Kong, Puqing Sun, Jincheng Liu, Yongxing Lin, Chao Xiao, Chao Bao, Kang Zheng, Meng Xue, Xian Zhang, Xianglan Liu* and Xingyou Tian*



CORRECTIONS

9242

Correction: Super-adsorbent hydrogel for removal of methylene blue dye from aqueous solution

Xiao-Sai Hu, Rui Liang and Guoxing Sun*

RETRACTION

9247

Retraction: Nickel nanoparticles immobilized on three-dimensional nitrogen-doped graphene as a superb catalyst for the generation of hydrogen from the hydrolysis of ammonia borane

Mojtaba Mahyari and Ahmad Shaabani*

