

Journal of Materials Chemistry A

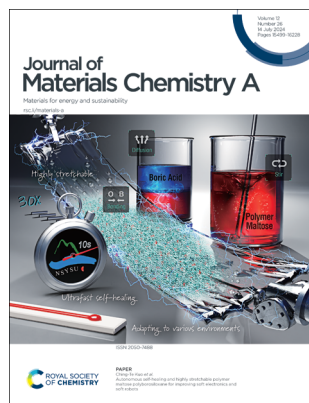
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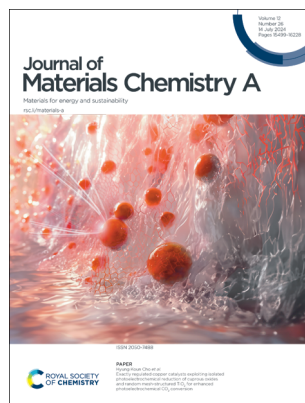
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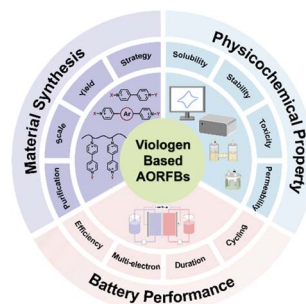
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REVIEWS

15519

Viologen-based aqueous organic redox flow batteries: materials synthesis, properties, and cell performance

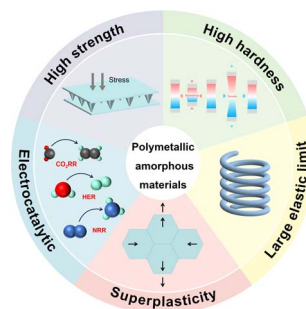
Tongxin Yin, Jiarui Duanmu and Lei Liu*



15541

Polymetallic amorphous materials: research progress in synthetic strategies and electrocatalytic applications

Meng Cao, Wenyang Li, Tianxiang Li, Fulong Zhu and Xin Wang*



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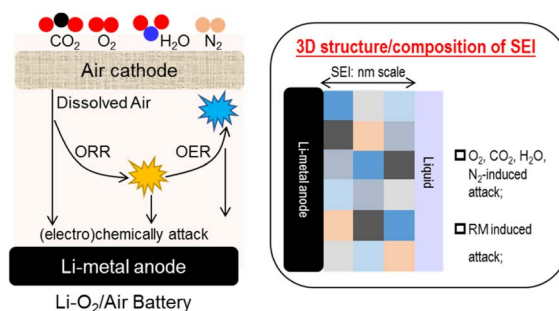
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REVIEWS

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An overview of the unstable and irreversible lithium metal anode-related issues in nonaqueous Li–O₂/air batteries

Zhengang Li, Xiaohong Wu,* Junhao Wang, Haitang Zhang, Yaru Qin,* Yu Qiao* and Shi-Gang Sun

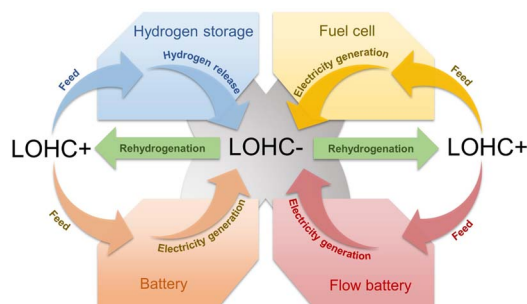


PERSPECTIVE

15580

Recent progress and perspectives of liquid organic hydrogen carrier electrochemistry for energy applications

Jinyao Tang, Rongxuan Xie, Parsa Pishva, Xiaochen Shen, Yanlin Zhu and Zhenmeng Peng*

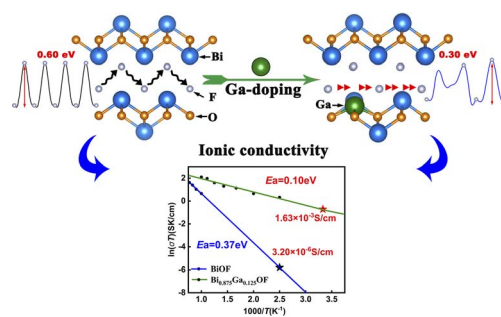


COMMUNICATIONS

15592

Structure design of a BiOF solid electrolyte with remarkably outstanding fluoride ion diffusion performance induced by Ga doping

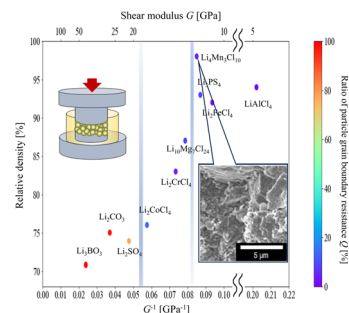
Jiyu Ning, Weijia Meng, Chuang Wang, Huangkai Wang, Chao Wu, Lidong You, Xianyou Wang, Yong Pei, Haibo Wang and Zhenhua Yang*



15601

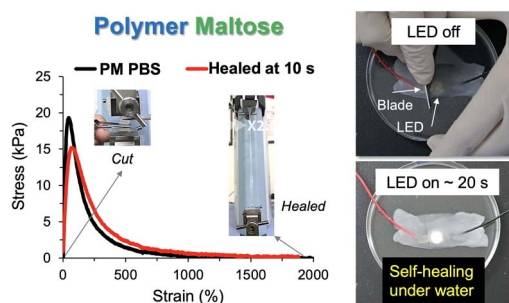
Guidelines for designing high-deformability materials for all-solid-state lithium-ion batteries

Naoto Tanibata,* Shin Aizu, Misato Koga, Hayami Takeda, Ryo Kobayashi and Masanobu Nakayama



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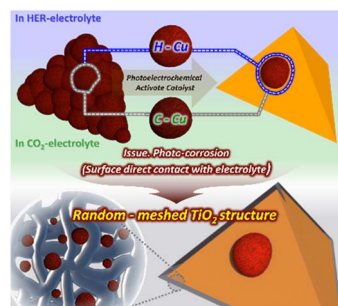
15608



Autonomous self-healing and highly stretchable polymer maltose polyborosiloxane for improving soft electronics and soft robots

Ching-Te Kuo,* Yu-Chia Lin, Kuan-Yu Tu and Lung-Hao Hu

15619

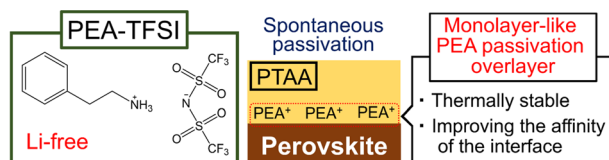


Exactly regulated copper catalysts exploiting isolated photoelectrochemical reduction of cuprous oxides and random mesh-structured TiO₂ for enhanced photoelectrochemical CO₂ conversion

Shin Young Oh, Dong Su Kim, Hak Hyeon Lee, Kun Woong Lee, Ji Hoon Choi, Won Seok Yang, Young Su Choi, Dong Wook Kim, Jee Won Byeon, Ho Seong Lee and Hyung Koun Cho*

15631

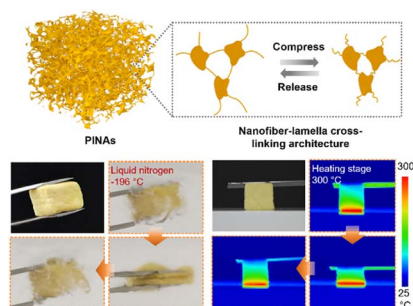
Perovskite passivation effectively combined with thermally stable PTAA-based *n-i-p* cells



Thermally stable phenylethylammonium-based perovskite passivation: spontaneous passivation with phenylethylammonium bis(trifluoromethylsulfonyl) imide during deposition of PTAA for enhancing photovoltaic performance of perovskite solar cells

Naoyuki Nishimura,* Hiroyuki Kanda, Ryuzi Katoh, Atsushi Kogo and Takuro N. Murakami

15641



Fatigue-resistant and thermal insulating polyimide nanofibrous aerogels with temperature-invariant flexibility and nanofiber–lamella crosslinking architecture

Tiantian Xue, Xingyu Zhao, Fan Yang, Jing Tian, Yong Qin, Xiaogang Guo, Wei Fan* and Tianxi Liu

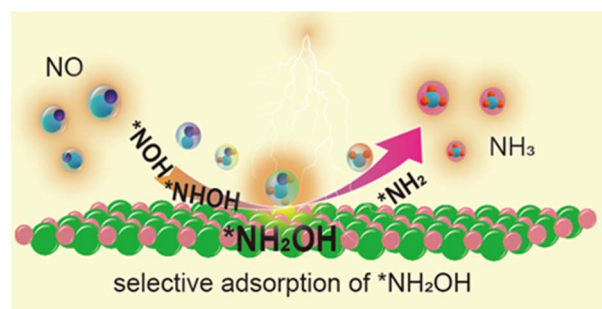


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Copper rhodium nanosheet alloy for electrochemical NO reduction reaction *via* selective intermediate adsorption

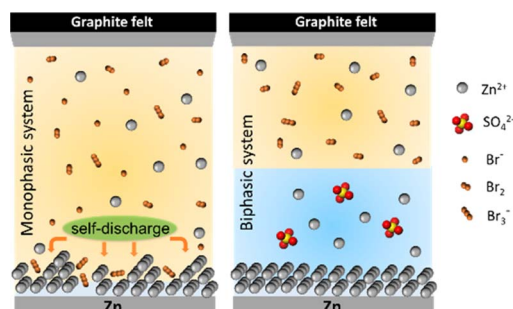
Yechuan Zhang, Jiachen Zhang, Fang Peng,*
Huajun Yang, Zhengxiang Gu* and Hanjun Sun*



15658

A hybrid-aqueous biphasic electrolyte for suppressed shuttle effects and self-discharge of zinc bromide batteries

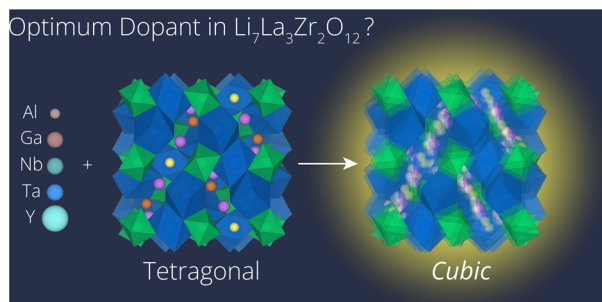
Qijun Wang, Qingyun Dou,* Guangyang Deng,
Guosheng Li, Yihui Ma, Pei Tang, Yidan Cui, Chao Yang,
Limin Zang* and Xingbin Yan



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Doping implications of Li solid state electrolyte $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$

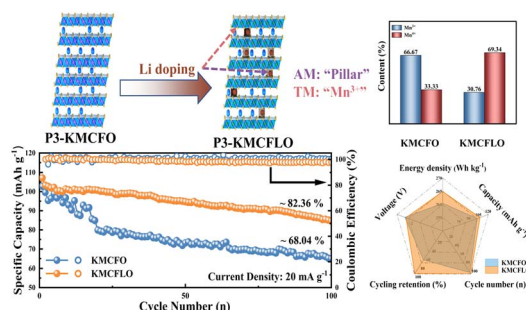
Kristoffer Eggestad, Sverre M. Selbach
and Benjamin A. D. Williamson*



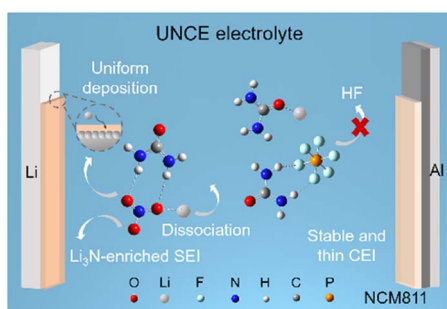
15676

A synergistic pinning effect in a layer-structured oxide cathode for enhancing stability towards potassium-ion batteries

Xuan-Wen Gao, Shuai-Shuai Wang, Qi Li, Rui Yang,
Zhaomeng Liu and Wen-Bin Luo*



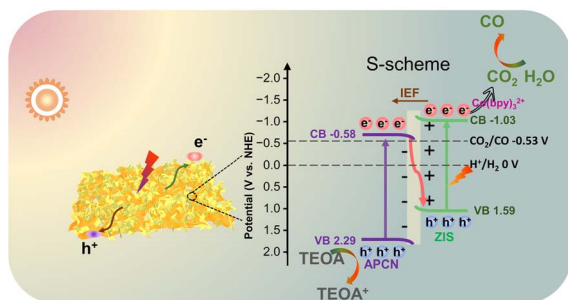
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Tailoring solvation chemistry by hydrogen bonds in carbonate electrolytes for highly stable lithium-metal batteries

Jiayang Wu, Bing Zhong, Qiaoli Zhang, Shuping Zhang, Xinxiang Zhang, Zhanjun Zhang,* Mingyue Zhou,* Wen Liu* and Henghui Zhou*

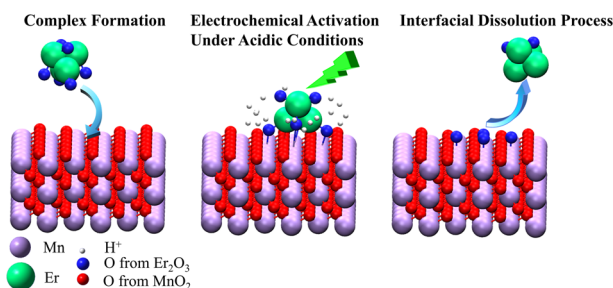
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A band structure modulated 2D/2D ZnIn₂S₄@amorphous polymeric g-C₃N₄ S-scheme heterojunction for efficient photocatalytic reduction of CO₂

Hang Zhao, Dechao Wang, Xiaoling Xue, Xun Zhu, Dingding Ye, Yang Yang, Hong Wang, Rong Chen* and Qiang Liao

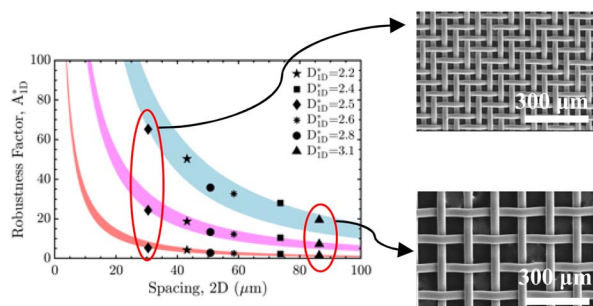
15705



Optimizing the active interface structure of MnO₂ to achieve sustainable water oxidation in an acidic medium

Sanjiang Pan,* Shenao Wang, Yu Wang, Hang Li, Deng Zhao, Yang Fu, Hua Liu, Jiajing Kou, Nan Li* and Desong Wang*

15716



Sustainable design of non-fluorinated yet oleophobic fibrous surfaces

Sadaf Shabanian, Xiaoxiao Zhao, Samuel Au, Nicole T. Furtak and Kevin Golovin*

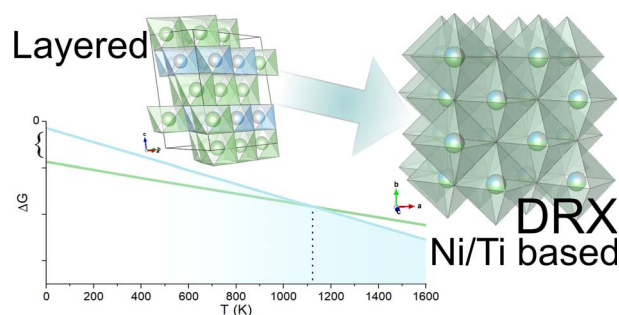


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Phase stability and charge compensation in disordered rock salt compounds based on nickel and titanium

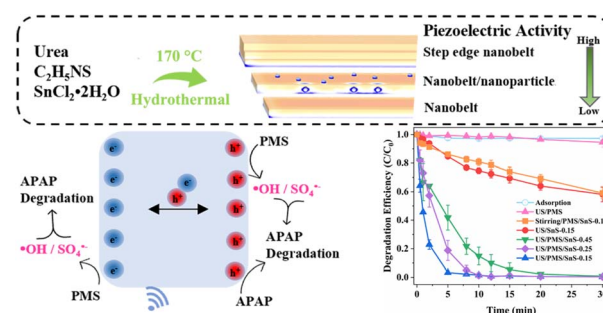
Agnese Reitano, Sylvia Kunz, Mingfeng Xu, Emmanuelle Suard and Matteo Bianchini*



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Morphology-enhanced piezoelectric performance of SnS nanobelts for acetaminophen degradation

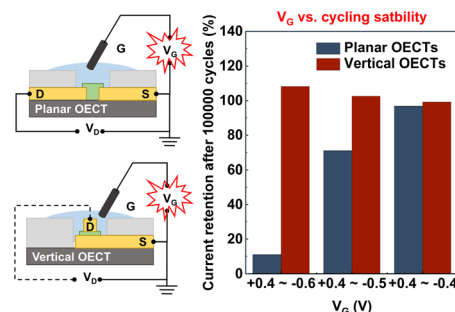
Shuhui Liu, Huayang Zhang, Yantao Wang, Hongqi Sun, Shaobin Wang* and Wenjie Tian*



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Gate bias modulation towards organic electrochemical transistors with ultra-high cycling stability

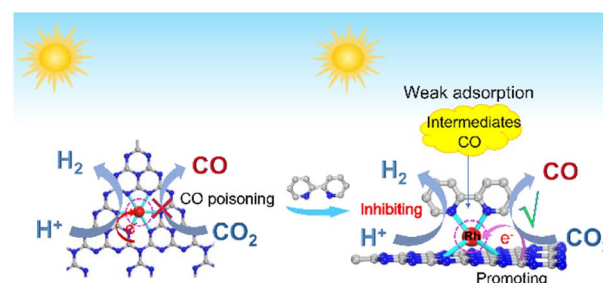
Miao Xie, Yueping Lai, Meisi Li, Dan Zhao, Chenggeng Huang, Libing Bai, Yuhua Cheng, Jianhua Chen,* Liang-Wen Feng* and Wei Huang*



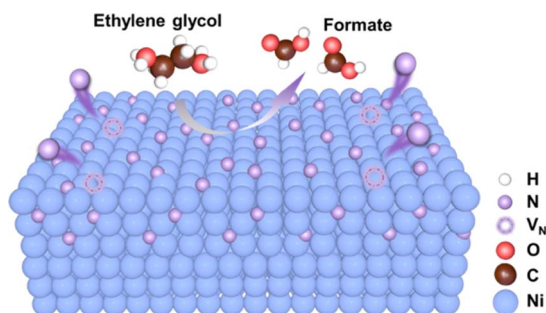
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Grafting a Rh–bipyridine complex on carbon nitride through coordination: ligand modification of single-atom Rh for enhanced CO₂ reduction and inhibited H⁺ reduction

Ling Li, Yulu Mao, Jiwu Zhao, Yuxuan Zhang, Han Wu and Quan Gu*



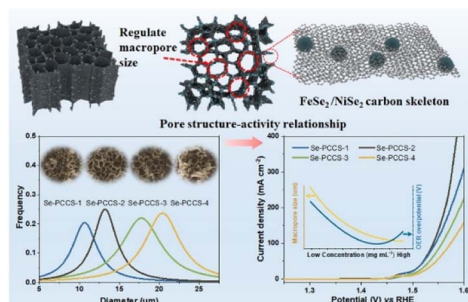
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Self-supported Ni/Ni₃N_{1-x} heterostructures with abundant nitrogen vacancies as efficient electrocatalysts for ethylene glycol oxidation

Chenyu Zhou, Chenghao Jia, Xuepeng Xiang, Luolan Wang, Shiyong Wu, Nian Zhang, Shijun Zhao, Gaixiu Yang and Yan Chen*

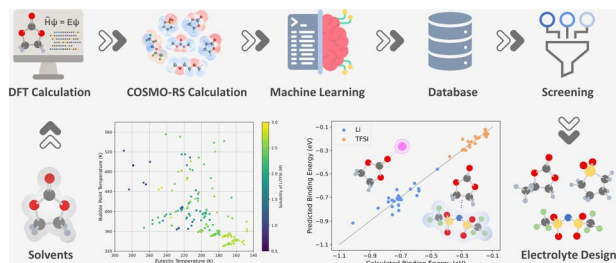
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Engineering modulated microscale assembly of MOF derived iron/nickel selenide for optimizing the oxygen evolution reaction

Wenhao Guo, HuaiPeng Pang, Xinyu Yang, Lin Li, Jinxiang Peng, Meiqi Zhao, Chunchao Hou, Yunhai Zhu* and Fanlu Meng*

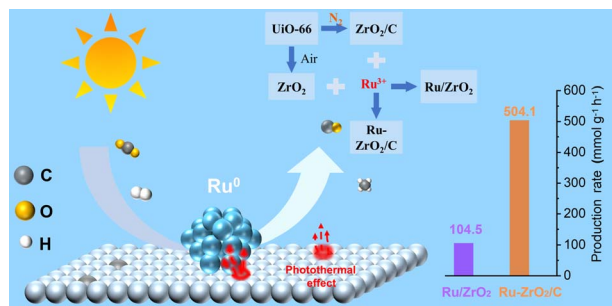
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Rational electrolyte design for Li-metal batteries operated under extreme conditions: a combined DFT, COSMO-RS, and machine learning study

Liang-Ting Wu, Yu-Ting Zhan, Zhong-Lun Li, Po-Ting Chen, Bing Joe Hwang and Jyh-Chiang Jiang*

15803



Ruthenium supported on zirconia-carbon nanocomposites derived by using UiO-66 for efficient photothermal catalytic CO₂ reduction

Huiling Wang, Qiang Li, Jing Chen* and Hongpeng Jia*

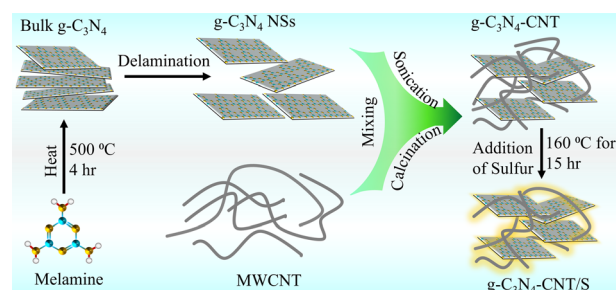


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Synergistic design of g-C₃N₄-supported CNTs: experimental and DFT insights for enhanced electrochemical performance in flexible Li–S batteries

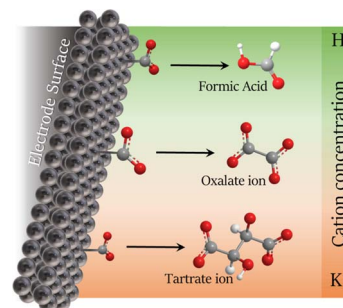
Vijay K. Tomer,* Rameshwar L. Kumawat, Otavio Augusto Tilton Dias, Ritu Malik,* George C. Schatz and Mohini Sain



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K⁺ selectivity modulation in non-aqueous CO₂ electroreduction on lead catalysts: from oxalic to tartaric acid production

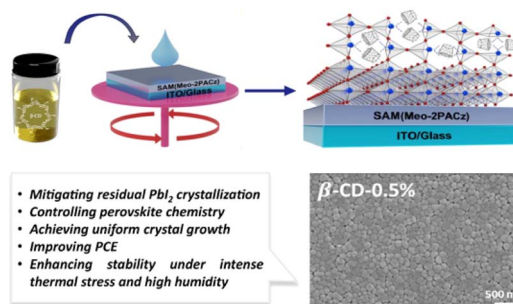
Eduardo Arizono dos Reis, Gelson T. S. T. da Silva and Caue Ribeiro*



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Supramolecular interactions using β -cyclodextrin in controlling perovskite solar cell performance

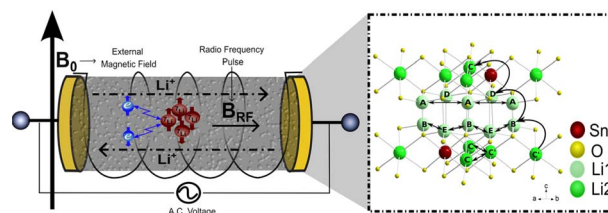
Parnian Ferdowsi, Sun-Ju Kim, Thanh-Danh Nguyen, Ji-Youn Seo, Jun-Ho Yum* and Kevin Sivula



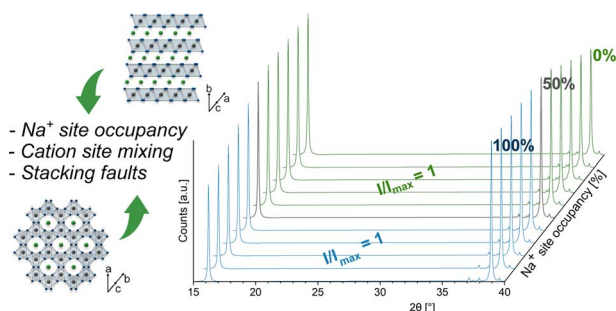
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Combining NMR and impedance spectroscopy *in situ* to study the dynamics of solid ion conductors

Sheyi Clement Adediwura, Neeshma Mathew and Jörn Schmedt auf der Günne*



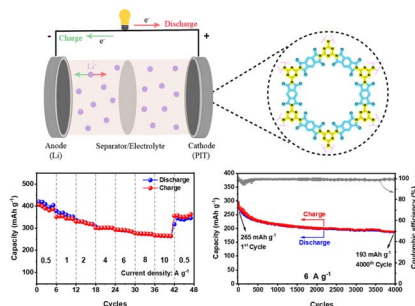
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Rethinking the existence of hexagonal sodium zirconate CO₂ sorbent

Ribooga Chang, Ashok S. Menon, Erik Svensson Grape, Peter Broqvist, A. Ken Inge and Ocean Cheung*

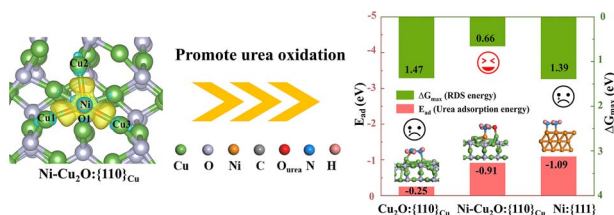
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A redox-active porous polymer based on poly(imide-triazine) as a high-performance cathode for lithium-ion batteries

Refka El Oueslati, Badr Jismy,* Benjamin Flamme, Nicolas Leclerc, Fouad Ghamouss* and Mohamed Abarbri*

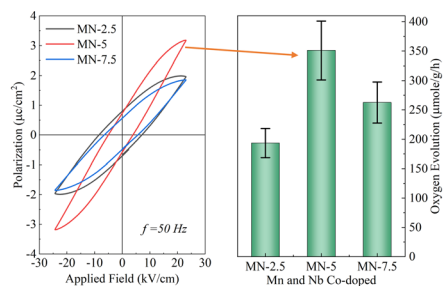
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Enhanced urea oxidation catalysis through Ni single-atom doping on Cu₂O surfaces: a computational study

Xiaoqing Li, Haiping Lin, Wenjing Huang,* Shiyun Xiong* and Shaoming Huang*

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Ferroelectric polarization influences oxygen evolution

Visible-light-driven oxygen evolution by a BaTiO₃ based ferroelectric photocatalyst via water splitting

Areef Billah,* Anjuman Nesa Anju, Fumihiko Hirose and Bashir Ahmmad*

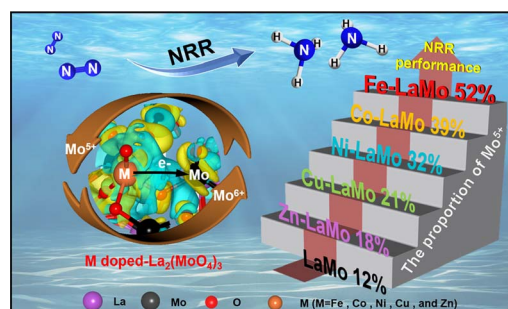


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Increasing Mo⁵⁺ in M-doped La₂(MoO₄)₃ (M = Fe, Co, Ni, Cu, and Zn) toward efficient electrocatalytic nitrogen fixation

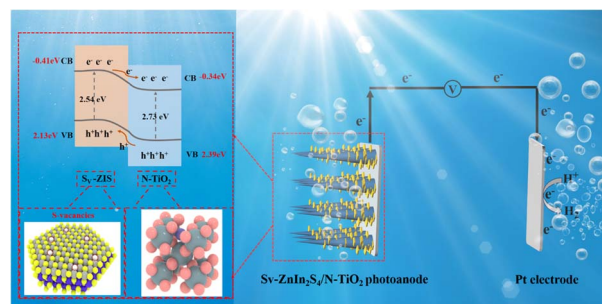
Liangqing Hu, Yanming Guo, Jin Chang,* Yinpeng Lu, Xiaojiang Su, Xinyi Zhang, Di Geng, Yueming Ren, Tong Wei, Hexin Zhang* and Jing Feng*



15902

Visible-light-responsive S-vacancy ZnIn₂S₄/N-doped TiO₂ nanoarray heterojunctions for high-performance photoelectrochemical water splitting

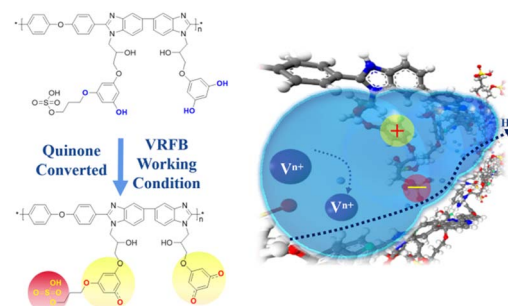
Zhiyong Bao, Yu Jiang, Zhihong Zhang, Jun Lv,* Wangqiang Shen, Jiyan Dai,* Jiaheng Wang, Jing Cai and Yucheng Wu*



15914

Quinone convertible sulfated ion conductive side chain for highly selective vanadium redox flow batteries

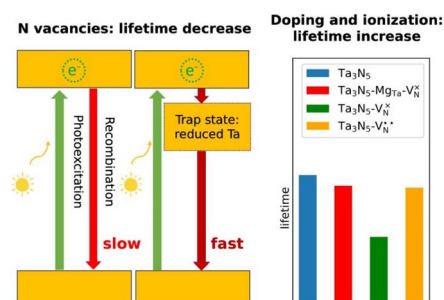
Bo Pang, Wanting Chen, Weiming Yu, Yujie Guo, Xuemei Wu,* Xiaoming Yan, Fujun Cui, Shouhai Zhang and Gaohong He*



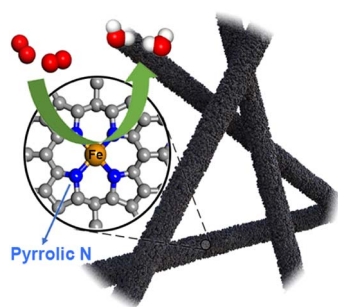
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Suppression of charge carrier recombination in a Ta₃N₅ photoanode via defect regulation: a theoretical investigation

Guozheng Fan, Zhaobo Zhou,* Yu Jing* and Thomas Frauenheim



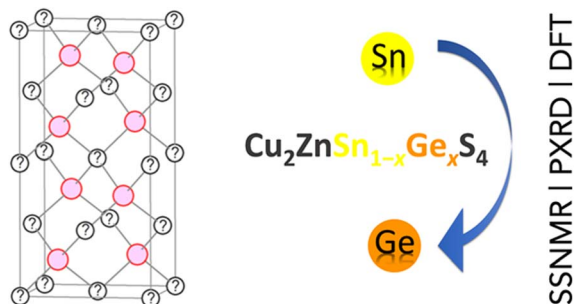
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Sulfur-assisted ammonia treatment of a fibrous carbon matrix to fabricate a high-content pyrrole-type Fe–N–C catalyst for superior oxygen reduction

Hongyin Hu, Rui Qiao, Runyang Miao, Huimin Sun, Fang Duan, Han Zhu, Mingliang Du and Shuanglong Lu*

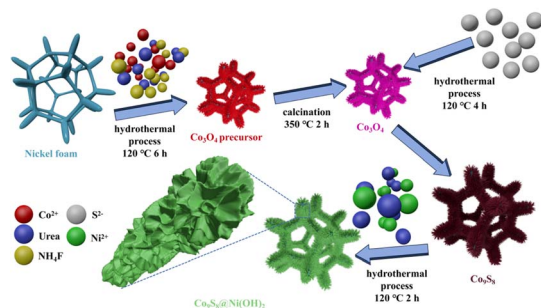
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Influence of Ge substitution on the structure and optical properties of $\text{Cu}_2\text{ZnSn}_{1-x}\text{Ge}_x\text{S}_4$ photovoltaic materials

Amit Bhattacharya, Vidyanshu Mishra, Victor V. Tersikh, Arthur Mar* and Vladimir K. Michaelis*

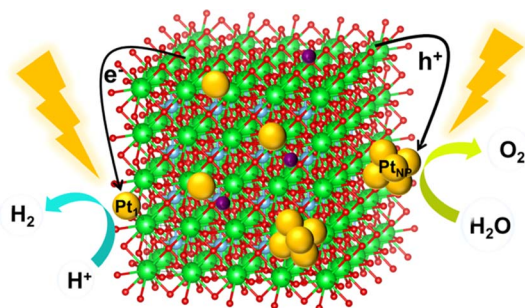
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Constructing high-performance supercapacitors and electrochemical water splitting electrode materials through core–shell structured $\text{Co}_9\text{S}_8@\text{Ni}(\text{OH})_2$ nanosheets

Song-Lin Xu, Rong-Da Zhao,* Rui-Yu Li, Jia Li, Jun Xiang, Fang-Yu Guo,* Jingang Qi, Liang Liu and Fu-Fa Wu*

15966



Accurate fabrication and orientation of electron acceptor and donor active sites for enhancing photocatalytic overall water splitting

Yan Wu, Qingqing Chen, Jiaping Liu, Kai Fang, Man Zhang, Tao Jing,* Zhuji Li* and Gang Wang*

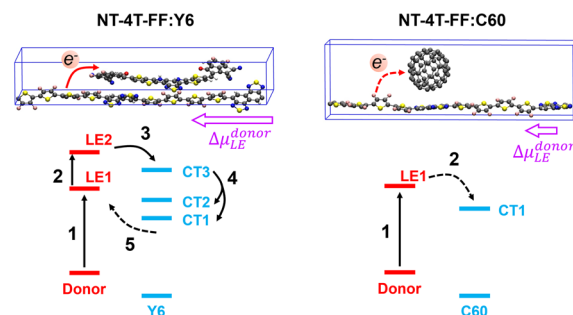


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Polarized local excitons assist charge dissociation in Y6-based nonfullerene organic solar cells: a nonadiabatic molecular dynamics study

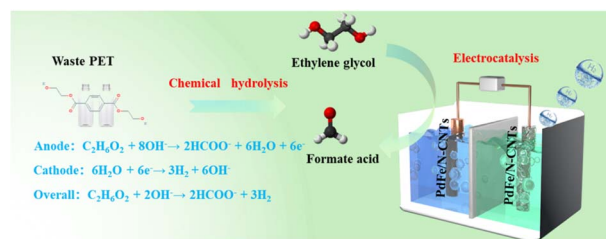
Bin Liu,* Philip C. Y. Chow, Junzhi Liu and Ding Pan*



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PdFe alloy nanoparticles supported on nitrogen-doped carbon nanotubes for electrocatalytic upcycling of poly(ethylene terephthalate) plastics into formate coupled with hydrogen evolution

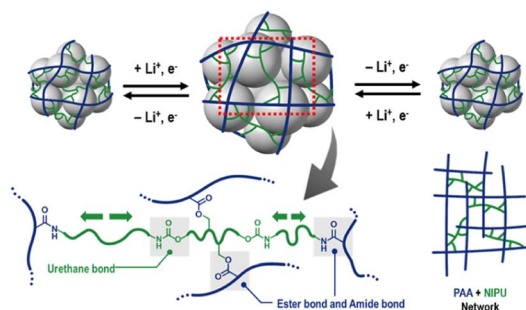
Heng Zhang, Zhenzhen Liu, Huaimeng Li, Zhen Fu, Guofeng Zhang, Haimin Zhang, Guozhong Wang and Yunxia Zhang*



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Assembling a dense grid structure with green polyhydroxyurethane and a high-capacity Si-based anode for lithium ion batteries

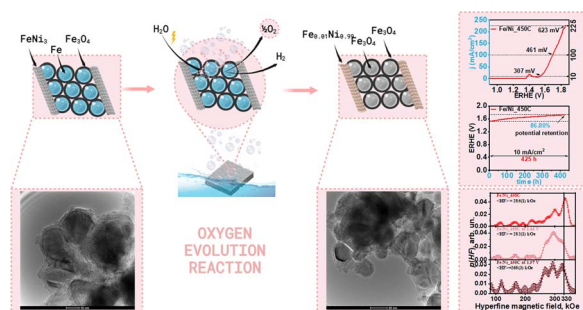
Jin Yong Kwon, Jihong Lyu, Eunhui Kim, Hyungmin Park, Ji-Eun Jeong, Jin Chul Kim* and Jaegeon Ryu*



16007

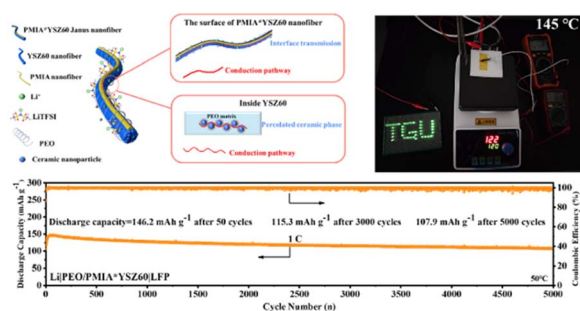
Green reaction engineering towards an iron-based nanostructured hybrid as an electrocatalyst for oxygen evolution reaction

Anna G. Dymerska,* Karolina Wenelska, Farit Vagizov, Almaz L. Zinnatullin, Rustem Zairov and Ewa Mijowska*



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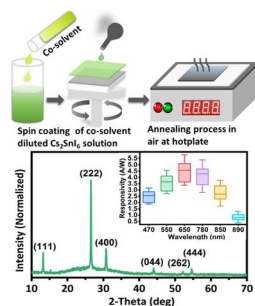
16022



Janus nanofibers with multiple Li⁺ transport channels and outstanding thermal stability for all-solid-state composite polymer electrolytes

Hengying Xiang, Nanping Deng,^{*} Lu Gao, Bowen Cheng^{*} and Weimin Kang^{*}

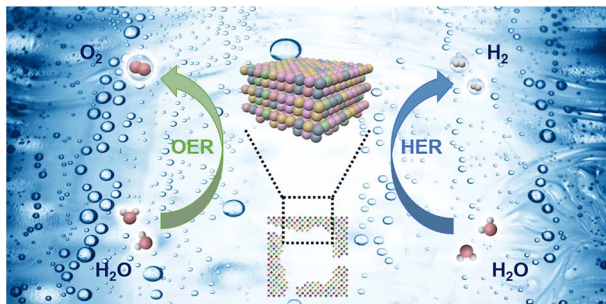
16034



Tuning solvent co-ordination in Cs₂SnI₆ perovskite solution via the co-solvent dilution strategy for energy-efficient broadband photodetector arrays

Saqib Nawaz Khan, Huili Liang,^{*} Yan Wang, Xiaolong Du and Zengxia Mei^{*}

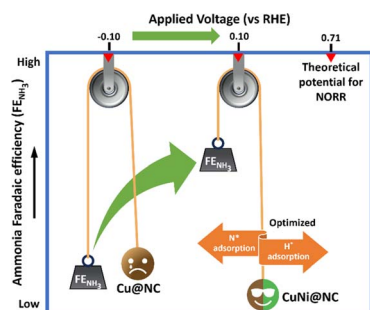
16043



High-entropy alloy nanocages with highly ordered {100} facets and ultrathin features for water splitting in an acidic medium

Keying Su, Shan Yang, Yulu Zhu, Yujia Liang, Yawen Tang^{*} and Xiaoyu Qiu^{*}

16052



Tuning the electrocatalytic nitric oxide reduction activity of copper through alloying with nickel for NH₃ production at low overpotentials

Harish Reddy Inta, Dinesh Dhanabal, Yuyeon Song and Sangaraju Shanmugam^{*}

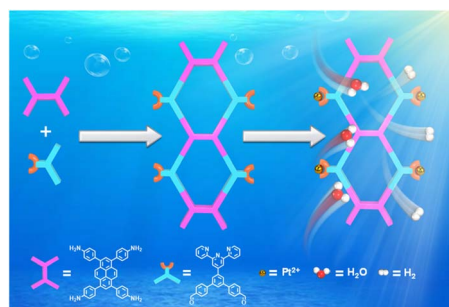


PAPERS

16063

Lateral functionalization of a one-dimensional covalent organic framework for efficient photocatalytic hydrogen evolution from water

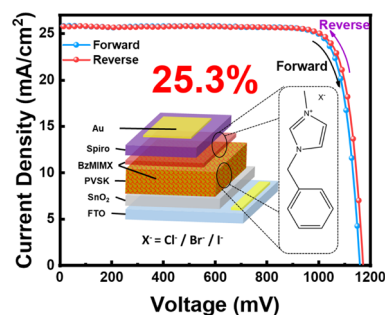
Chao Liu, De-Li Ma, Peng-Ju Tian, Chao Jia, Qiao-Yan Qi, Guo-Fang Jiang* and Xin Zhao*



16070

Interfacial defect passivation via imidazolium bromide for efficient, stable perovskite solar cells

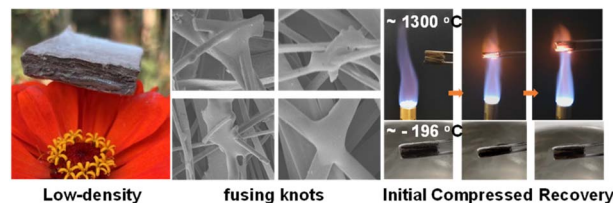
Zijing Chen, Shiyu Jiang, Zhenghao Liu, Yiming Li,* Jiangjian Shi, Huijue Wu, Yanhong Luo, Dongmei Li* and Qingbo Meng*



16079

Thermal-insulating ceramic fiber aerogels reinforced by fusing knots of overlapping fibers for superelasticity and high compression resistance

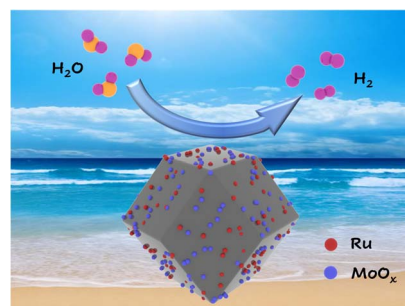
Xiaolin Meng, Cui Liu, Jixiang Zhang,* Wei Guo,* Nian Li, Yang Chen, Huan Xu, Min Xi, Shudong Zhang* and Zhenyang Wang*



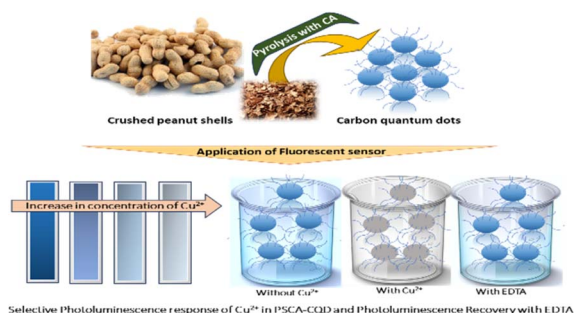
16087

Ultrafast preparation of ruthenium nanoparticle/molybdenum oxide/nitrogen-doped carbon nanocomposites by magnetic induction heating for efficient hydrogen evolution reaction

Bingzhe Yu, Qiming Liu, Dingjie Pan, Kevin Singewald, Davida DuBois, John Tressel, Bryan Hou, Glenn L. Millhauser, Frank Bridges and Shaowei Chen*



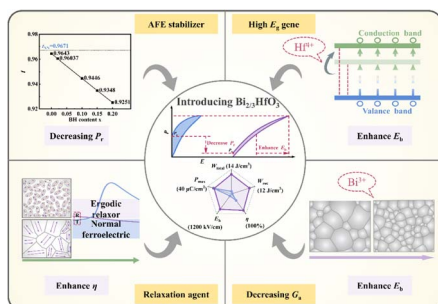
16098



Peanut shell carbon quantum dots modified with citric acid: amplifying visual detection of fluorescence sensitivity for Cu^{2+}

Huma Javeria, Muhammad Qamer Abbas, Shu-Huan Chen and Zhen-xia Du*

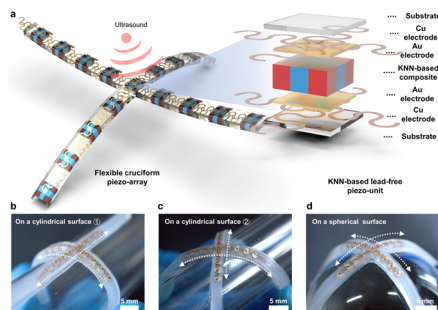
16108



Multistep synergistic modified NaNbO_3 -based ceramics for high-performance electrostatic capacitors

Ling Lv, Zhongbin Pan,* Jiawen Hu, Zhixin Zhou, Huanhuan Li, Xiqi Chen, Jinjun Liu,* Peng Li and Jiwei Zhai*

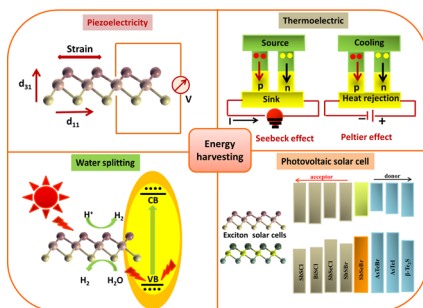
16116



Flexible lead-free cruciform piezo-arrays for implantable wireless energy harvesting on complex surfaces

Chong Zhu, Haoyue Xue, Qin Zhou, Laiming Jiang* and Jiagang Wu*

16129



Two-dimensional Janus antimony chalcogenides for efficient energy conversion applications

Poonam Chauhan, Jaspreet Singh and Ashok Kumar*

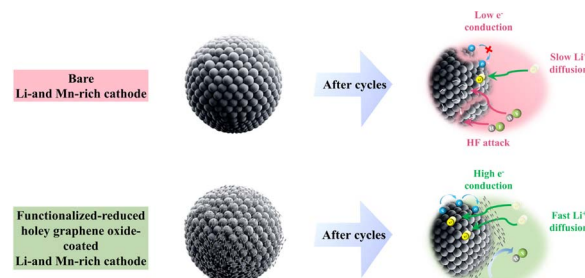


PAPERS

16143

Minimizing ion/electron pathways through ultrathin conformal holey graphene encapsulation in Li- and Mn-rich layered oxide cathodes for high-performance lithium-ion batteries

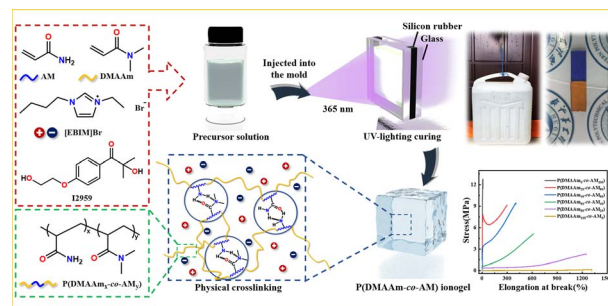
Sungwook Kim, Jeonguk Hwang, Youngseok Jo, Changyong Park, Neetu Bansal, Rahul R. Salunkhe* and Heejoon Ahn*



16160

A transparent and robust ionogel prepared via phase separation for sensitive strain sensing

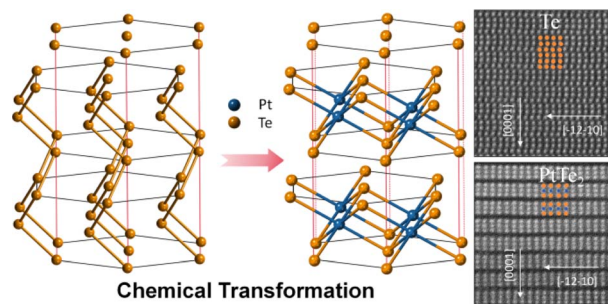
Jinliang Xie, Xiaoqian Li, Jiayu Liu, Fangfang Su, Ruiqi Gao, Changming Zhang, Jiahe Liang, Gang Ji,* Dongdong Yao* and Yaping Zheng



16174

The spontaneous directional transformations of the layers and chemical bonds: a study combining first-principles calculations and experiments

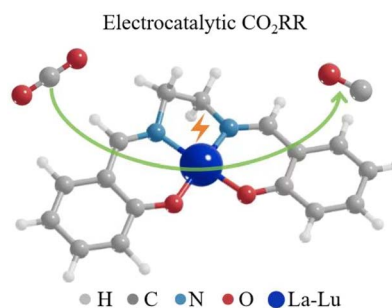
Liang Zhang, Yuan Xiang,* Xiang Fu,* Xiangyu Zeng, Yang Liu, Xuegang Chen, Yulu Liu, Yixiu Wang,* Yongsheng Leng and Xiaozhi Wang*



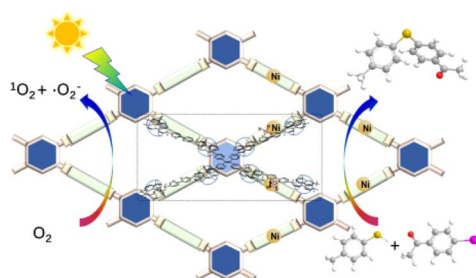
16183

Theoretical insights into lanthanide rare earth single-atom catalysts for electrochemical CO₂ reduction

Jing Liu, Lei Sun,* Yuying Sun, Jikai Sun, Yuwei Pan, Mengqian Xu, Yunjie Lang, Dong Zhai, Weiqiao Deng, Yamin Li* and Li Yang*



16190

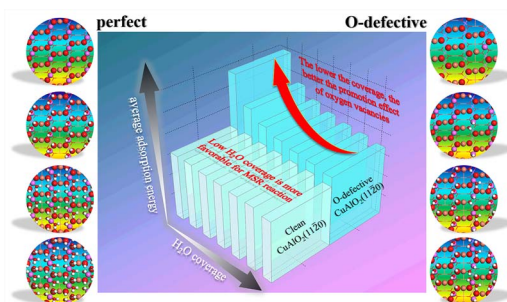


Tetraphenylethylene-based SOFs for Photocatalytic Oxidation Reactions

Tetraphenylethylene-based photoresponsive supramolecular organic framework and its metallization for photocatalytic redox reactions

Fa-Dong Wang, Kai-Kai Niu, Xian-Ya Yao, Shengsheng Yu, Hui Liu, Ling-Bao Xing* and Pei-Zhou Li*

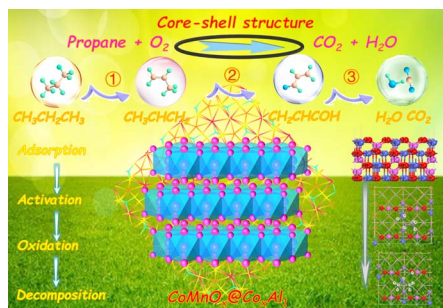
16200



Theoretical insights into H₂O adsorption on CuAlO₂(1120) surfaces: from low to high coverage

Chunyan Sun, Shuwei Xiao, Chengkai Jin, Runping Ye, Rongbin Zhang, Lihong Cheng,* Qiang Li* and Gang Feng*

16210



Engineering a CoMnO_x nanocube core catalyst through epitaxial growth of CoAlO_x hydrotalcite shell nanosheets for efficient elimination of propane

Shixing Wu, Shilin Wu, Fang Dong, Siyi Ma, Yu Meng,* Haitao Zhang and Zhicheng Tang*

