

# Energy & Environmental Science

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## IN THIS ISSUE

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### Inside cover

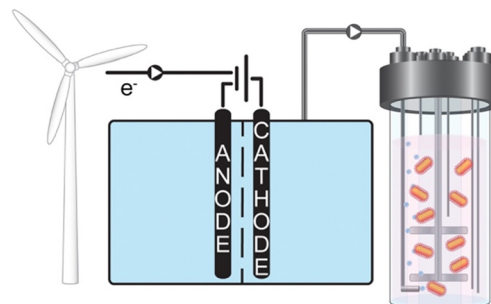
See Largus T. Angenent *et al.*, pp. 3682–3699. Image reproduced by permission of Largus T. Angenent from *Energy Environ. Sci.*, 2024, 17, 3682.

## REVIEWS

3682

### Electrical-energy storage into chemical-energy carriers by combining or integrating electrochemistry and biology

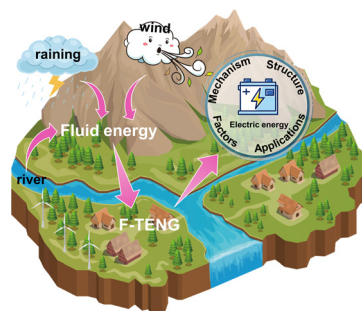
Largus T. Angenent,\* Isabella Casini, Uwe Schröder, Falk Harnisch and Bastian Molitor



3700

### Fluid-based triboelectric nanogenerators: unveiling the prolific landscape of renewable energy harvesting and beyond

Lihong Jiang, Xinlin Liu, Junling Lv, Gaojie Li, Peiyuan Yang, Yumeng Ma, Haiyang Zou\* and Zhong Lin Wang\*



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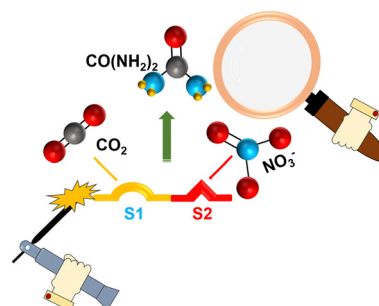


## MINIREVIEW

3739

## Electrochemical urea production using carbon dioxide and nitrate: state of the art and perspectives

Mohsin Muhyuddin, Giovanni Zuccante, Piercarlo Mustarelli, Jonathan Filippi, Alessandro Lavacchi, Lior Elbaz, Yu-Han Chen, Plamen Atanassov and Carlo Santoro\*

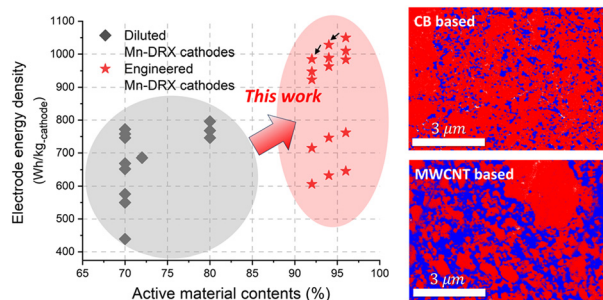


## PAPERS

3753

## Nearly all-active-material cathodes free of nickel and cobalt for Li-ion batteries

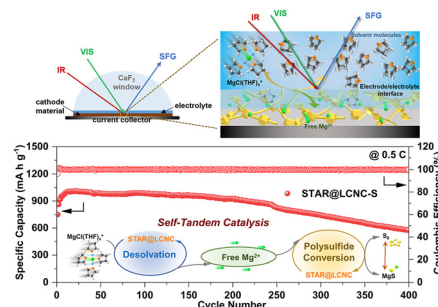
Eunryeol Lee, Dae-Hyung Lee, Stéphanie Besette, Sang-Wook Park, Nicolas Brodusch, Gregory Lazaris, Hojoon Kim, Rahul Malik, Raynald Gauvin, Dong-Hwa Seo\* and Jinhyuk Lee\*



3765

## Self-tandem catalysis of fast Mg<sup>2+</sup> desolvation and sulfur conversions for ultrahigh-performance Mg–S batteries via serially-assembled atomic reactors

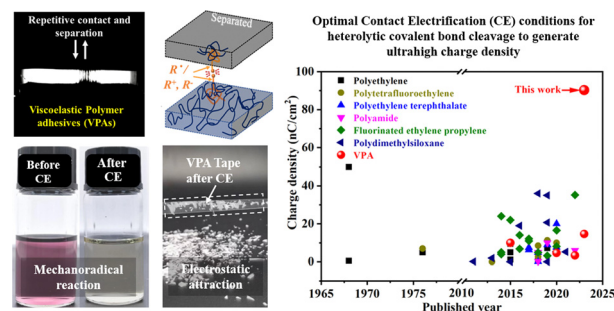
Qinghua Guan, Jian Wang,\* Quan Zhuang, Jing Zhang, Linge Li, Lujie Jia, Yongzheng Zhang, Hongfei Hu, Huijin Hu, Shuang Cheng, Huang Zhang, Huihua Li, Meinan Liu, Shuangyin Wang\* and Hongzhen Lin\*



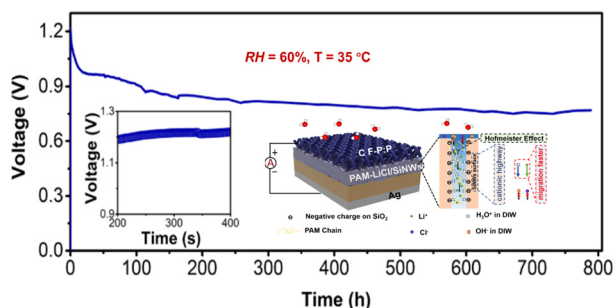
3776

## Understanding contact electrification via direct covalent bond cleavage of polymer chains for ultrahigh electrostatic charge density

Haiyan Fu, Jianliang Gong,\* Junhao Cao, Zehua Zhang, Zuchang Long, Bao Yang, Jianzhuang Chen, Yiwang Chen\* and Xiaoming Tao



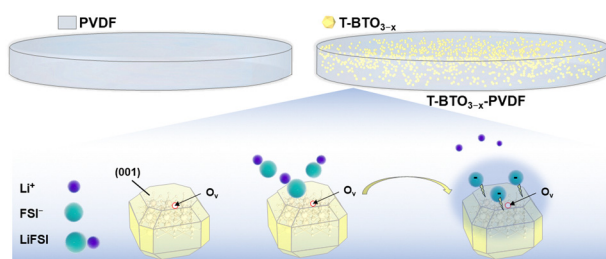
3788



### Silicon nanowire/ionic hydrogel-based hybrid moist-electric generators with enhanced voltage output and operational stability

Wenjing Duan, Beibei Shao, Zhiqi Wang, Kun Ni, Shanfei Liu, Xianrong Yuan, Yusheng Wang, Baoquan Sun, Xiaohong Zhang and Ruiyuan Liu\*

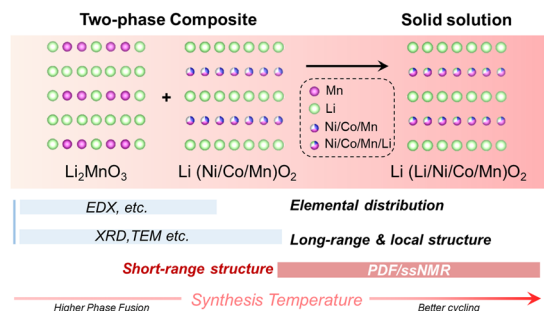
3797



### Dissociation mechanism of lithium salt by BaTiO<sub>3</sub> with spontaneous polarization

Shaoke Guo, Shendong Tan, Jiabin Ma, Likun Chen, Ke Yang, Qiannan Zhu, Yuetao Ma, Peiran Shi, Yingping Wei, Xufei An, Qingkang Ren, Yanfei Huang, Yingman Zhu, Ye Cheng, Wei Lv, Tingzheng Hou,\* Ming Liu,\* Yan-Bing He,\* Quan-Hong Yang and Feiyu Kang\*

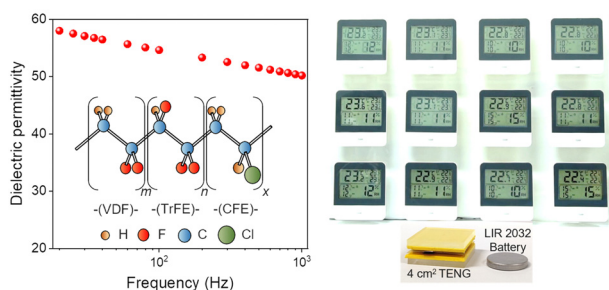
3807



### Multi-angle tracking synthetic kinetics of phase evolution in Li-rich Mn-based cathodes

Shenyang Xu, Zhefeng Chen, Wenguang Zhao, Wenju Ren, Chenxin Hou, Jiajie Liu, Wu Wang, Chong Yin, Xinghua Tan, Xiaobing Lou, Xiangming Yao, Zhihai Gao, Hao Liu, Lu Wang, Zuwei Yin, Bao Qiu, Bingwen Hu,\* Tianyi Li,\* Cheng Dong, Feng Pan\* and Mingjian Zhang\*

3819



### Triboelectric nanogenerators exhibiting ultrahigh charge density and energy density

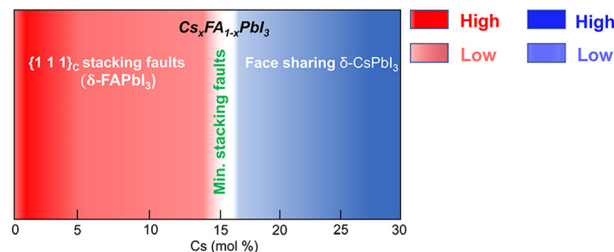
Xiaoru Liu, Zhihao Zhao,\* Yikui Gao, Yang Nan, Yuexiao Hu, Ziting Guo, Wenyan Qiao, Jing Wang, Linglin Zhou, Zhong Lin Wang\* and Jie Wang\*



3832

## Alleviating nanostructural phase impurities enhances the optoelectronic properties, device performance and stability of cesium-formamidinium metal–halide perovskites

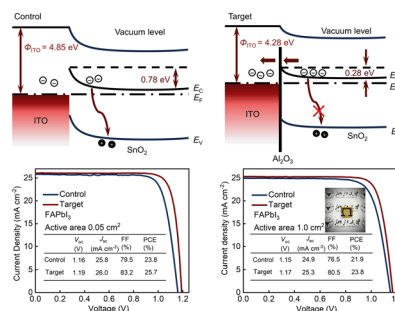
Mostafa Othman,\* Quentin Jeangros, Daniel A. Jacobs, Moritz H. Futscher, Stefan Zeiske, Ardalan Armin, Anaël Jaffrès, Austin G. Kuba, Dmitry Chernyshov, Sandra Jenatsch, Simon Züfle, Beat Ruhstaller, Saba Tabean, Tom Wirtz, Santhana Eswara, Jiashang Zhao, Tom J. Savenije, Christophe Ballif, Christian M. Wolff\* and Aicha Hessler-Wyser\*



3848

## Mitigated front contact energy barrier for efficient and stable perovskite solar cells

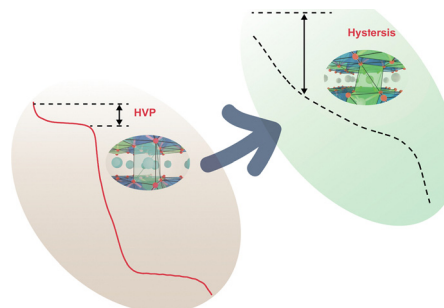
Daoyong Zhang, Biao Li, Pengjie Hang, Jiangsheng Xie, Yuxin Yao, Chenxia Kan, Xuegong Yu,\* Yiqiang Zhang and Deren Yang\*



3855

## A prismatic alkali-ion environment suppresses plateau hysteresis in lattice oxygen redox reactions

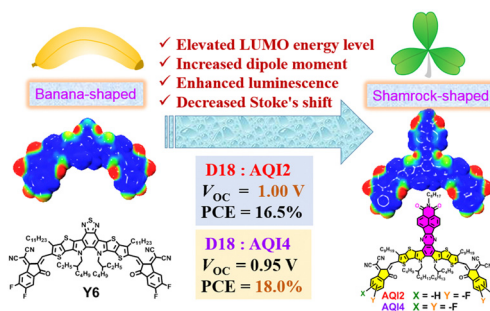
Hao Yu, Ang Gao, Xiaohui Rong,\* Shipeng Shen, Xinqi Zheng, Liqin Yan, Haibo Wang, Dan Su, Zilin Hu, Wang Hay Kan, Huaican Chen, Wen Yin, Yaxiang Lu, Qinghua Zhang,\* Lin Gu, Claude Delmas, Liqian Chen, Shouguo Wang\* and Yong-Sheng Hu\*



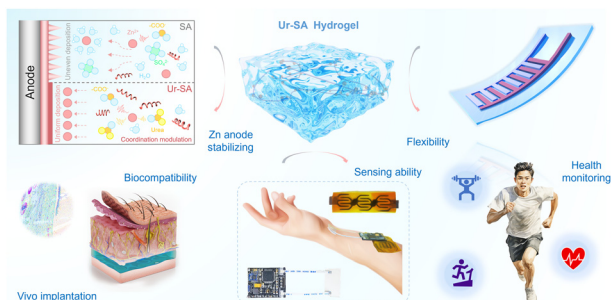
3868

## Shamrock-shaped non-fullerene acceptors enable high-efficiency and high-voltage organic photovoltaics

Zongtao Wang, Mengwei Ji, Ailing Tang, Mengzhen Du, Chenyu Mu, Yingliang Liu, Ergang Wang and Erjun Zhou\*



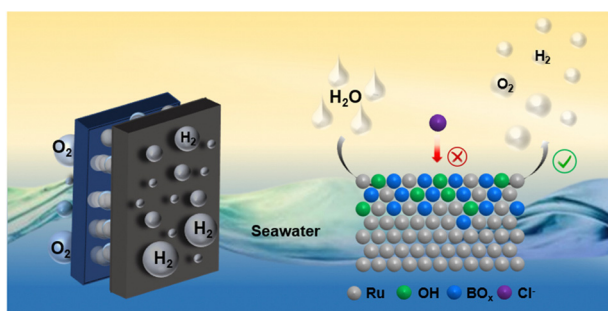
3878



### Biocompatible and stable quasi-solid-state zinc-ion batteries for real-time responsive wireless wearable electronics

Bingyao Zhang, Xinze Cai, Jingjing Li, Hao Zhang, Dongmin Li, Haoyang Ge, Shuquan Liang, Bingan Lu, Jiangqi Zhao\* and Jiang Zhou\*

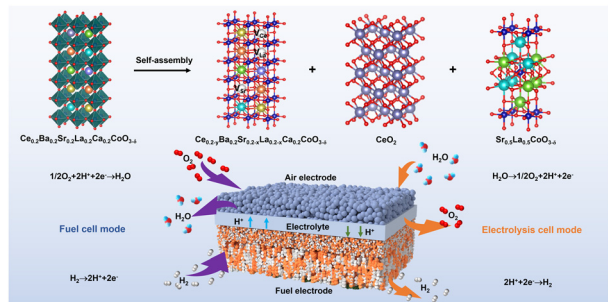
3888



### Ruthenium nanoparticles decorated with surface hydroxyl and borate species boost overall seawater splitting via increased hydrophilicity

Le-Wei Shen, Yong Wang, Ling Shen, Jiang-Bo Chen, Yu Liu, Ming-Xia Hu, Wen-Ying Zhao, Kang-Yi Xiong, Si-Ming Wu, Yi Lu, Jie Ying, Maria Magdalena Titirici, Christoph Janiak, Ge Tian\* and Xiao-Yu Yang\*

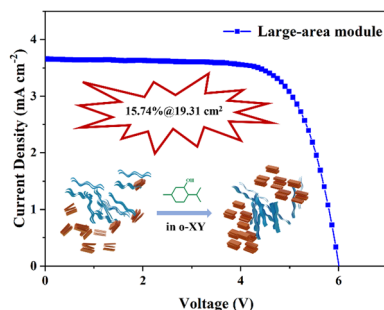
3898



### Phase segregation of a composite air electrode unlocks the high performance of reversible protonic ceramic electrochemical cells

Fan He, Mingyang Hou, Dongliang Liu, Yong Ding, Kotaro Sasaki, YongMan Choi,\* Shihang Guo, Donglin Han, Ying Liu, Meilin Liu and Yu Chen\*

3908



### Eco-friendly volatile additive enabling efficient large-area organic photovoltaic module processed with non-halogenated solvent

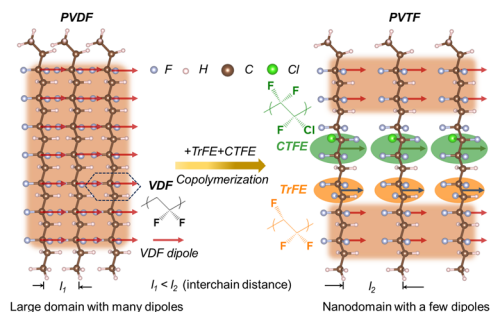
Ziyan Jia, Jiannan Pan, Xu Chen, Yaohui Li, Tianyu Liu, Hanbo Zhu, Jizhong Yao, Buyi Yan and Yang (Michael) Yang\*



3917

## Regulating dielectricity of a polymer electrolyte to promote cation mobility for high-performance solid zinc hybrid batteries

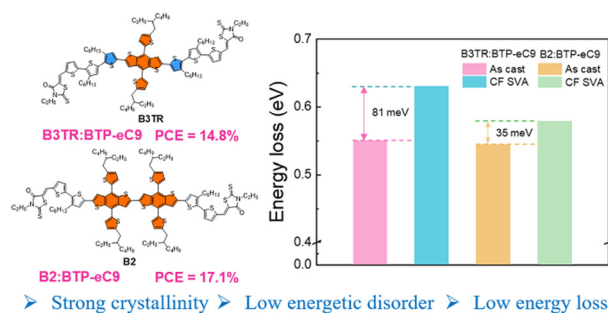
Yue Hou, Zhiqian Wei, Zhuoxi Wu, Yiqiao Wang, Zhaodong Huang, Qing Li, Ze Chen, Xinliang Li, Pei Li, Huilin Cui, Guojin Liang\* and Chunyi Zhi\*



3927

## A highly crystalline donor enables over 17% efficiency for small-molecule organic solar cells

Tao Zhang, Cunbin An,\* Pengqing Bi, Kaihu Xian, Zhihao Chen, Jingwen Wang, Ye Xu, Jiangbo Dai, Lijiao Ma, Guanlin Wang, Xiaotao Hao, Long Ye, Shaoqing Zhang and Jianhui Hou\*



3937

## Hole-transporting alternating copolymers for perovskite solar cells: thia[5]helicene comonomer outperforms planar peryloothiophene analog

Lifei He, Yuyan Zhang,\* Bing Zhang, Tianyu Li, Yaohang Cai, Ming Ren, Jing Zhang, Peng Wang\* and Yi Yuan\*

