

# Energy Advances

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## IN THIS ISSUE

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### Cover

See K. Neuhaus *et al.*, pp. 2175–2185.  
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### Inside cover

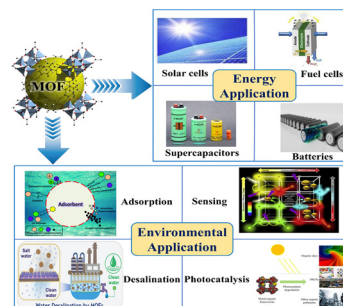
See Cody W. Schlenker *et al.*, pp. 2186–2199.  
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## REVIEWS

2079

### Trends in the energy and environmental applications of metal–organic framework-based materials

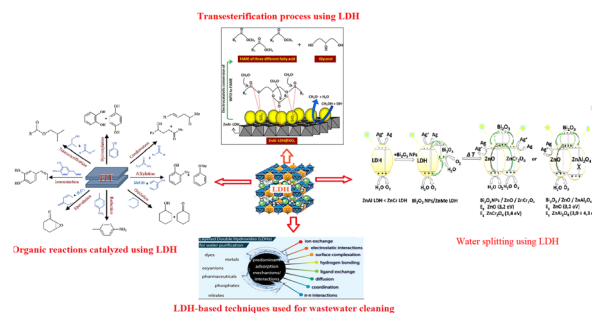
Mohammed Yusuf,\* Irina Kurzina, Gulnara Voronova, Md. Monjurul Islam, Salisu Danlami Mohammed and Nurudeen Abiola Oladoja\*



2136

### Recent advances in layered double hydroxide (LDH)-based materials: fabrication, modification strategies, characterization, promising environmental catalytic applications, and prospective aspects

Amal A. Altalhi, Eslam A. Mohamed\* and Nabel A. Negm\*



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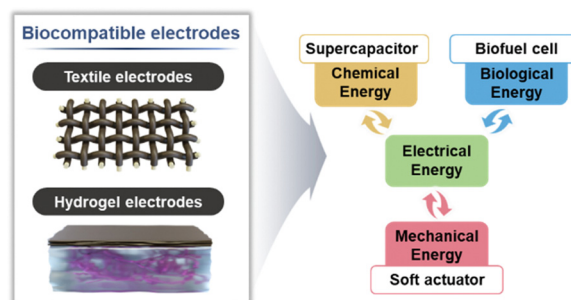
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## PERSPECTIVE

2152

### Unlocking high-efficiency energy storage and conversion with biocompatible electrodes: the key role of interfacial interaction assembly and structural design

Jeongyeon Ahn, Hyeseoung Lim, Jongkuk Ko\* and Jinhan Cho\*

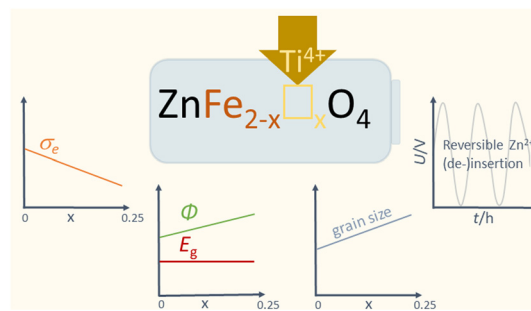


## PAPERS

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### Teaching an old dog new tricks: Ti-doped $\text{ZnFe}_2\text{O}_4$ as active material in zinc ion batteries – a proof of concept

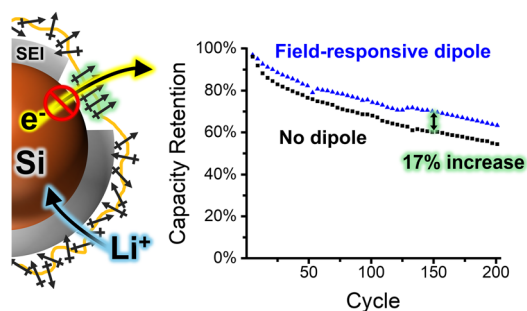
S. Krämer, J. Hopster, A. Windmüller, R.-A. Eichel, M. Grünebaum, T. Jüstel, M. Winter and K. Neuhaus\*



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### Selective kinetic control of interfacial charge transfer reactions in Si-composite anodes for Li-ion batteries

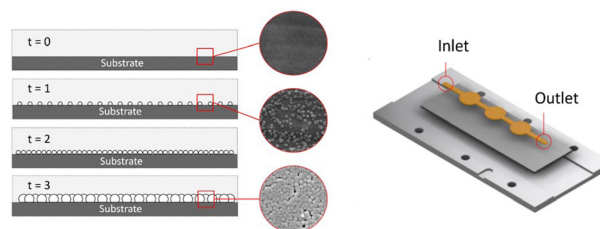
Emma A. Cave, Tyson A. Carr and Cody W. Schlenker\*



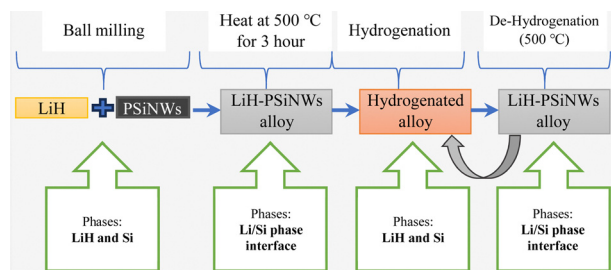
2200

### Micoreactor assisted soft lithography of nanostructured antimony sulfide thin film patterns: nucleation, growth and application in solid state batteries

Bryan Chun, V. Vinay K. Doddapaneni, Marcos Lucero, Changqing Pan, Zhongwei Gao, Zhenxing Feng, Rajiv Malhotra and Chih-hung Chang\*



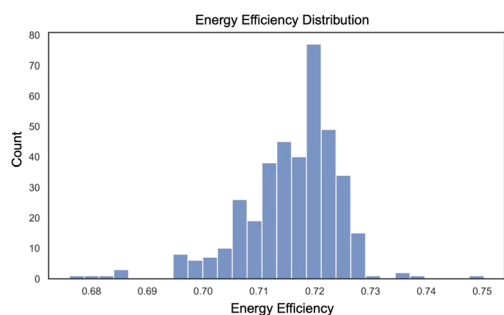
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### Enhancing the solid-state hydrogen storage properties of lithium hydride through thermodynamic tuning with porous silicon nanowires

Rama Chandra Muduli, Zhiwen Chen, Fangqin Guo,\* Ankur Jain, Hiroki Miyaoka, Takayuki Ichikawa and Paresh Kale\*

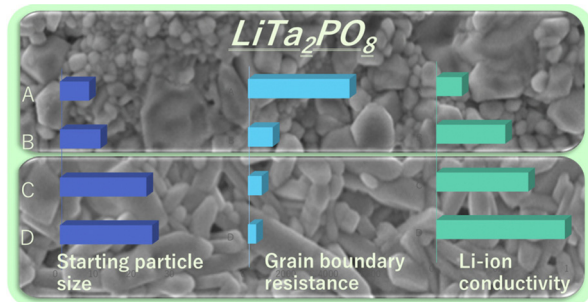
2220



### Optimization framework for redox flow battery electrodes with improved microstructural characteristics

Alina Berkowitz, Ashley A. Caiado, Sundar Rajan Aravamuthan, Aaron Roy, Ertan Agar\* and Murat Inalpolat\*

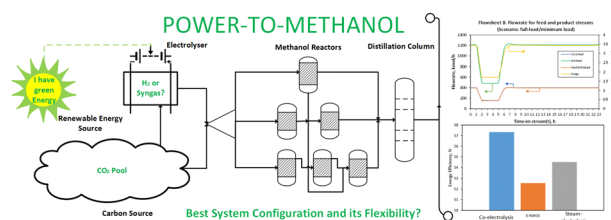
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### Effect of synthesis process on the Li-ion conductivity of $\text{LiTa}_2\text{PO}_8$ solid electrolyte materials for all-solid-state batteries

Hayami Takeda,\* Miki Shibasaki, Kento Murakami, Miki Tanaka, Keisuke Makino, Naoto Tanibata, Hirotaka Maeda and Masanobu Nakayama

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### Comparative evaluation of the power-to-methanol process configurations and assessment of process flexibility

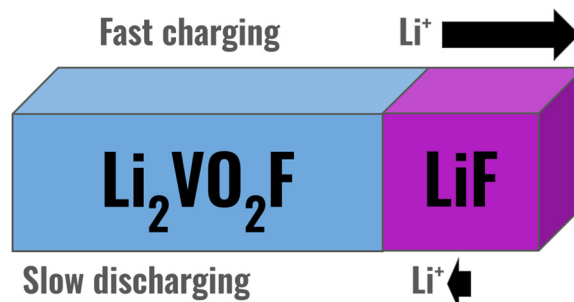
Siphesihle Mbatha,\* Xiaoti Cui, Payam G. Panah, Sébastien Thomas, Ksenia Parkhomenko, Anne-Cécile Roger, Benoit Louis, Ray Everson, Paulo Debiagi, Nicholas Musyoka and Henrietta Langmi



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### Modelling interfacial ionic transport in $\text{Li}_2\text{VO}_2\text{F}$ cathodes during battery operation

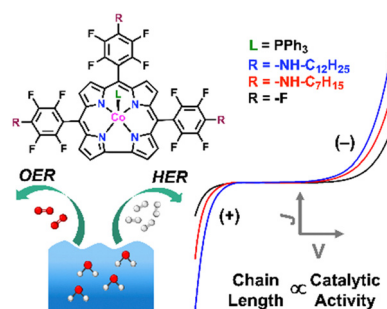
Jolla Kullgren,\* Jin Hyun Chang, Simon Loftager, Shweta Dhillon, Tejs Vegge and Daniel Brandell



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### Exploring the role of polymer interactions during water electrolysis under basic conditions with bifunctional cobalt corroles

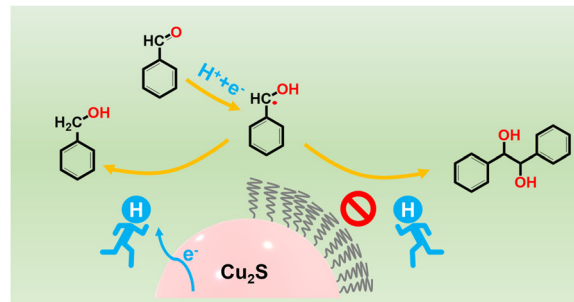
Sameeta Sahoo, Elizabeth K. Johnson, Xiangru Wei, Sen Zhang and Charles W. Machan\*



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### Influence of the catalyst surface chemistry on the electrochemical self-coupling of biomass-derived benzaldehyde into hydrobenzoin

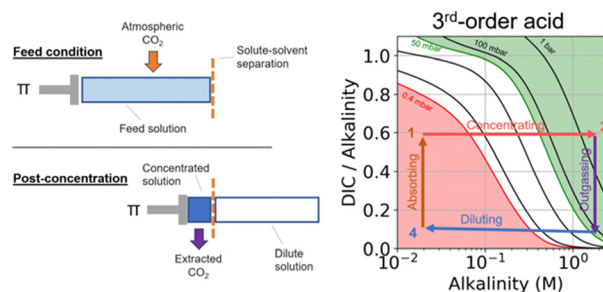
Li Gong, Shiling Zhao, Jing Yu, Junshan Li, Jordi Arbiol, Tanja Kallio, Mariano Calcabrini, Paulina R. Martínez-Alanis,\* Maria Ibáñez and Andreu Cabot\*



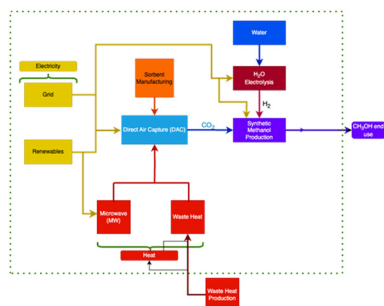
2295

### Acid–base concentration swing for direct air capture of carbon dioxide

Anatoly Rinberg\* and Michael J. Aziz



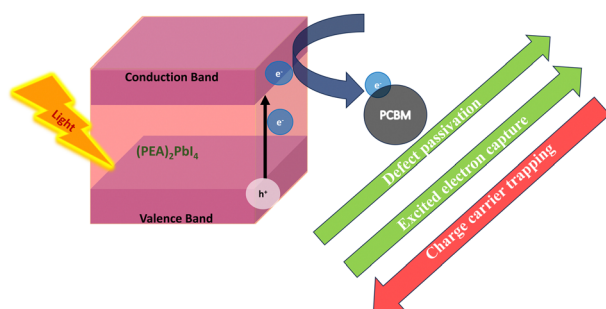
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### A cradle-to-gate life cycle assessment of green methanol production using direct air capture

Nicholas Badger,\* Rahim Boylu, Valentine Ilojianya, Mustafa Erguvan and Shahriar Amini\*

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### Effect of PCBM nanoparticles in lead-based layered (PEA)<sub>2</sub>PbI<sub>4</sub> perovskite thin films

Deepak Aloysius, Muskan Khan, Arindam Mondal and Satyajit Gupta\*

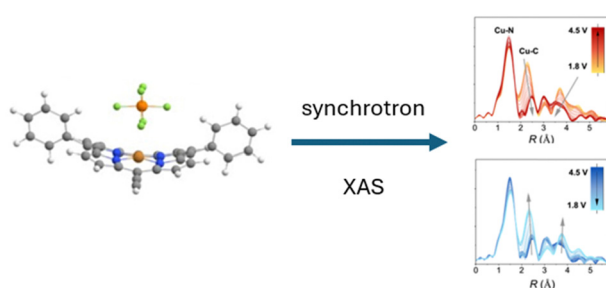
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### Effects of tuning decision trees in random forest regression on predicting porosity of a hydrocarbon reservoir. A case study: volve oil field, north sea

Kushan Sandunil,\* Ziad Bennour, Hisham Ben Mahmud and Ausama Giwelli

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### Exploring the chemical and structural change of copper porphyrins upon charging by means of synchrotron X-ray absorption spectroscopy

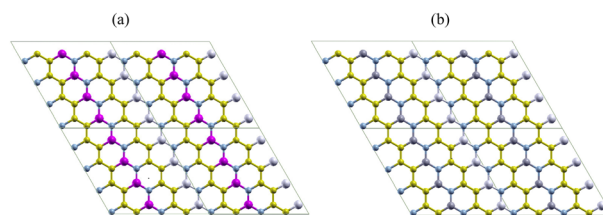
Thomas Smok,\* Yang Hu, Saibal Jana, Frank Pammer and Maximilian Fichtner\*



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### Novel 2D structural material design: carbon–aluminium–boron nitrides (CC–(Al–B)N) and carbon–aluminium–gallium nitrides (CC–(Al–Ga)N) for optical and optoelectronic system applications

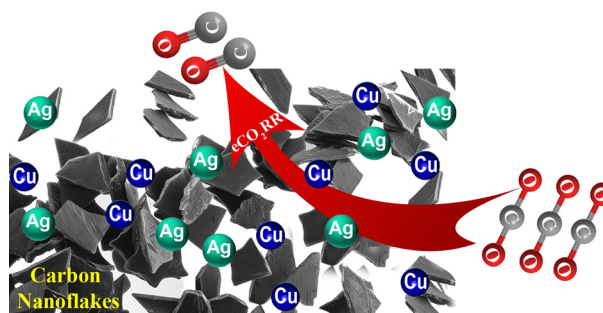
V. W. Elloh,\* D. E. Anderson, D. Abbeyquaye, D. F. Ofosuhene, I. Arhin, Edwin Okoampa Boadu, A. Yaya and Eric K. K. Abavare



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### Selective electroreduction of CO<sub>2</sub> into CO over Ag and Cu decorated carbon nanoflakes

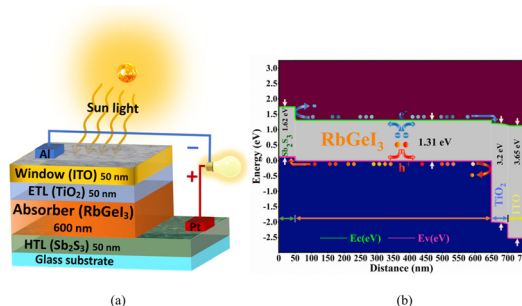
Ahmad Faraz, Waheed Iqbal, Shayan Gul, Fehmida K. Kanodarwala, Muhammad Nadeem Zafar, Guobao Xu\* and Muhammad Arif Nadeem\*



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### Numerical modeling and extensive analysis of an extremely efficient RbGeI<sub>3</sub>-based perovskite solar cell by incorporating a variety of ETL and HTL materials to enhance PV performance

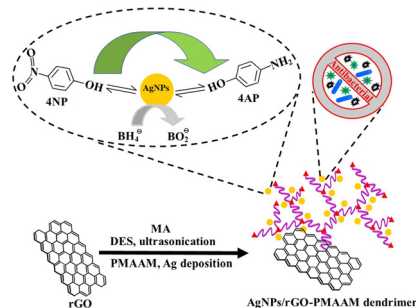
Md. Mojahidur Rahman, Md. Hasan Ali,\* Md. Dulal Haque and Abu Zafor Md. Touhidul Islam\*



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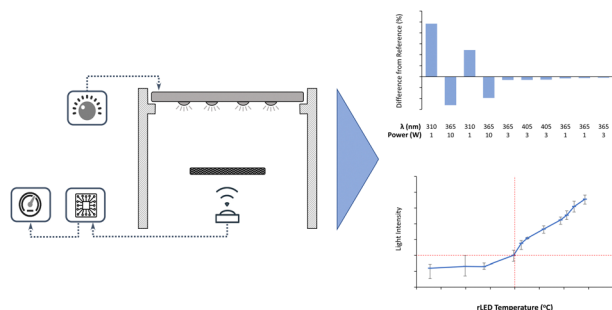
### Synthesis of dendrimer stabilized high-density silver nanoparticles on reduced graphene oxide for catalytic and antibacterial properties

Thi Nhat Thang Nguyen, Subodh Kumar\* and Xuan Thang Cao\*



## PAPERS

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## Feasibility study of UV intensity monitoring in water disinfection systems using reverse-biased LED photometers

D. Pousty,\* Y. Gerchman and H. Mamane

## CORRECTION

2416

## Correction: Acid–base concentration swing for direct air capture of carbon dioxide

Anatoly Rinberg\* and Michael J. Aziz

