

# Energy Advances

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## IN THIS ISSUE

ISSN 2753-1457 CODEN EANDBJ 3(8) 1757-2068 (2024)



### Cover

See Filipe M. Santos, Verónica de Zea Bermudez *et al.*, pp. 1766–1843. Image reproduced by permission of Verónica de Zea Bermudez from *Energy Adv.*, 2024, 3, 1766.



### Inside cover

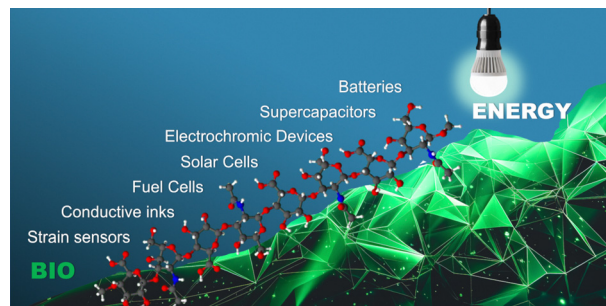
See Zhefeng Xu, Yueming Li *et al.*, pp. 1844–1868. Image reproduced by permission of Yueming Li from *Energy Adv.*, 2024, 3, 1844.

## REVIEWS

1766

### Looking beyond biology: glycosaminoglycans as attractive platforms for energy devices and flexible electronics

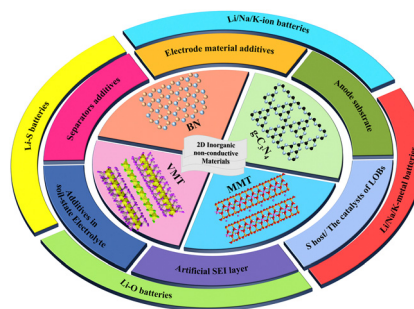
Filipe M. Santos,\* Silvia C. Nunes and Verónica de Zea Bermudez\*



1844

### Recent progress in 2D inorganic non-conductive materials for alkali metal-based batteries

Yuxi Shen, Zengquan Zhu, Zhefeng Xu\* and Yueming Li\*



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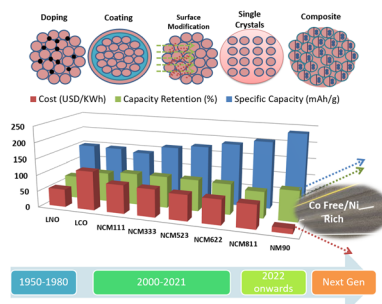


## REVIEWS

1869

### Challenges and opportunities using Ni-rich layered oxide cathodes in Li-ion rechargeable batteries: the case of nickel cobalt manganese oxides

Jitendra Pal Singh,\* Harsha Devnani, Aditya Sharma, Weon Cheol Lim, Archana Dhyani, Keun Hwa Chae and Sangsul Lee

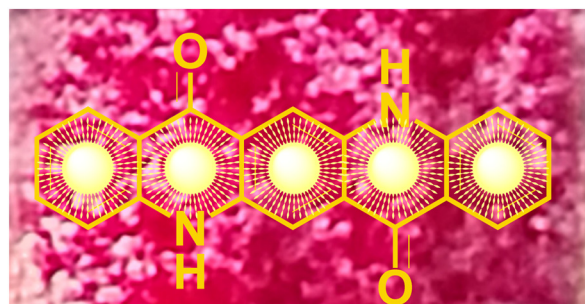


## PERSPECTIVE

1894

### Quinacridone dyes: versatile molecules and materials for photo- and photoelectrochemical processes

Elena Rossin, Yunshuo Yang, Martina Chirico, Greta Rossi, Pierluca Galloni\* and Andrea Sartorel\*

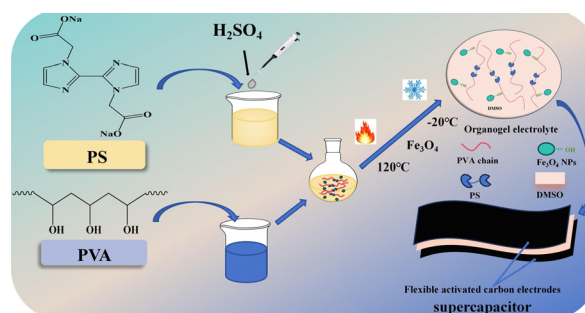


## COMMUNICATION

1905

### Magnetic soft organogel supercapacitor electrolyte for energy storage

Xinxian Ma,\* Jiuzhi Wei, Yuehua Liang, Juan Zhang, Enke Feng, Zhenxing Fu and Xinning Han\*

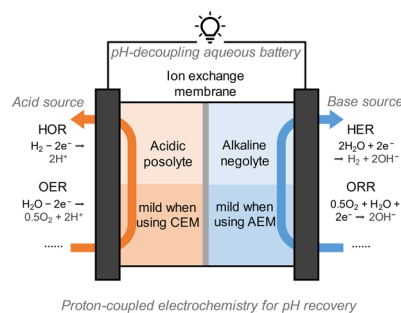


## PAPERS

1911

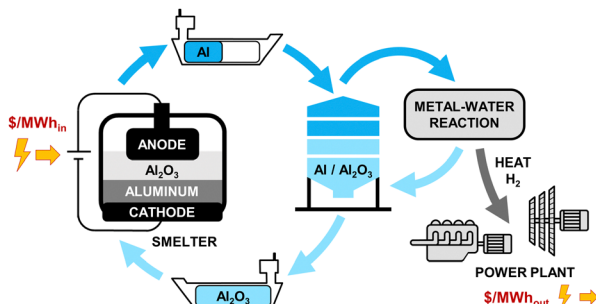
### Single-membrane pH-decoupling aqueous batteries using proton-coupled electrochemistry for pH recovery

Dawei Xi, Zheng Yang, Abdulrahman M. Alfaraidi, Yan Jing, Roy G. Gordon and Michael J. Aziz\*





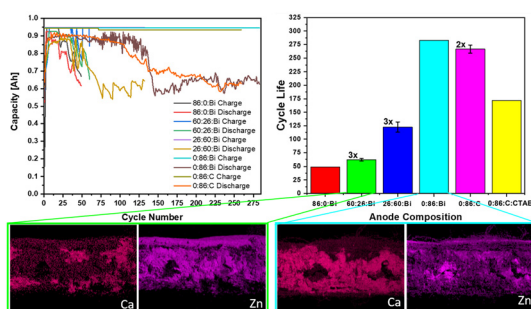
1919



### Techno-economic assessment of aluminum as a clean energy carrier to decarbonize remote industries

Pascal Boudreau,\* Michael Johnson and Jeffrey M. Bergthorson

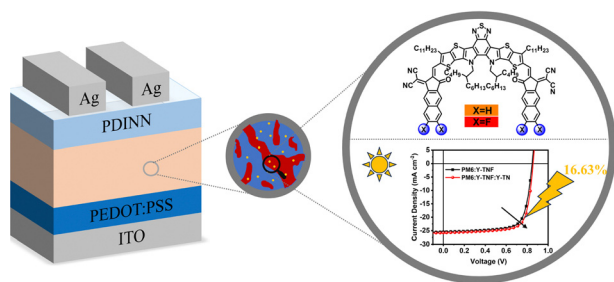
1932



### Performance and failure mechanisms of alkaline zinc anodes with addition of calcium zincate ( $\text{Ca}[\text{Zn}(\text{OH})_3]_2 \cdot 2\text{H}_2\text{O}$ ) under industrially relevant conditions

Patrick K. Yang, Damon E. Turney,\* Michael Nyce, Bryan R. Wygant, Timothy N. Lambert, Stephen O'Brien, Gautam G. Yadav, Meir Weiner, Shinju Yang, Brendan E. Hawkins and Sanjoy Banerjee

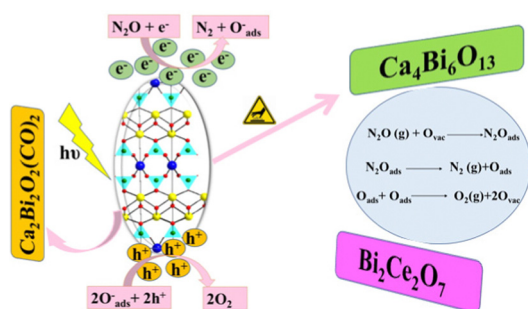
1948



### Employing a similar acceptor material as the third component to enhance the performance of organic solar cells

Kun Wang,\* Haolei Bai, Cheng Zhang, Chunxiao Sun, Shuyang Sang, Yuechen Li, Zekun Chen, Jia'nian Hu, Xiaojun Li, Lei Meng\* and Yongfang Li

1956



### Exploration of bismuth-based materials for photocatalytic decomposition of $\text{N}_2\text{O}$

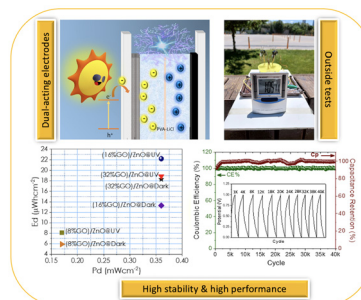
Shalu Atri,\* Sitharaman Uma, Rajamani Nagarajan, Maros Gregor, Tomas Roch, Miroslava Filip Edelmannova, Martin Reli, Kamila Koci, Martin Motola and Olivier Monfort\*



1965

### Zinc oxide nanoflake/reduced graphene oxide nanocomposite-based dual-acting electrodes for solar-assisted supercapacitor applications

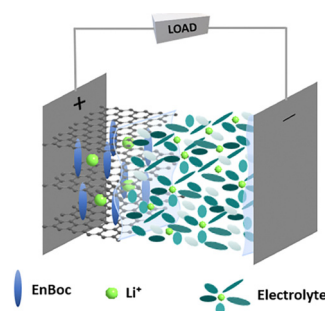
Cigdem Tuc Altaf, Tuluhan Olcayto Colak, Arpad Mihai Rostas, Crina Socaci, Mihaela Diana Lazar, Lucian Barbu Tudoran, Mohamad Hasan Aleinawi, Feray Bakan Misirlioglu, Ipek Deniz Yildirim, Emre Erdem, Nurdan Demirci Sankir\* and Mehmet Sankir\*



1977

### van der Waals gap modulation of graphene oxide through mono-Boc ethylenediamine anchoring for superior Li-ion batteries

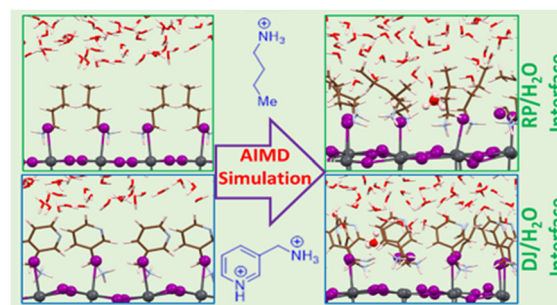
Sneha Mandal, Vijayamohan K. Pillai,\* Mano Ranjana Ponraj, Thushara K M, Jebasingh Bhagavathsingh,\* Stephan L. Grage, Xihong Peng, Jeon Woong Kang, Dorian Liepmann, Arunachala Nadar Mada Kannan, Velmurugan Thavasi and Venkatesan Renugopalakrishnan



1992

### Understanding moisture stability and degradation mechanisms of 2D hybrid perovskites: insights from *ab initio* molecular dynamics simulations

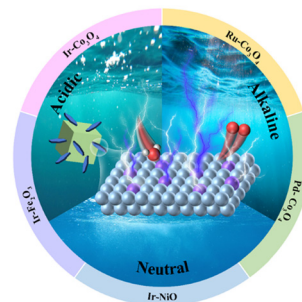
Eti Mahal, Surya Sekhar Manna, Sandeep Das and Biswarup Pathak\*



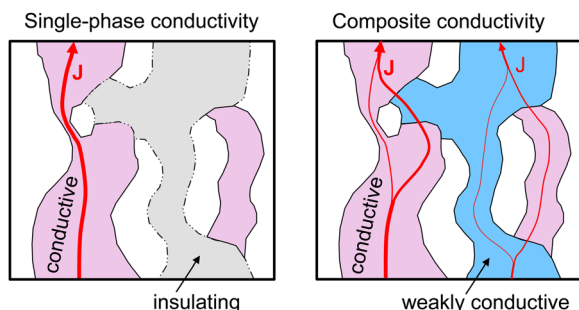
2002

### Universal synthesis strategy for preparation of transition metal oxide electrocatalysts doped with noble metal single atoms for oxygen evolution reaction

Jingyao Wang, Yiming Zhu, Xuepeng Zhong, Zhiwei Hu, Wei-Hsiang Huang, Chih-Wen Pao, Hongfei Cheng,\* Nicolas Alonso-Vante\* and Jiwei Ma\*



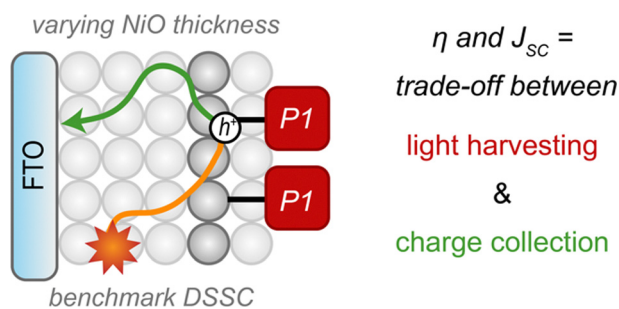
2013



### Effective transport properties of porous composites applied to MIEC SOC electrodes

Philip Marmet,\* Lorenz Holzer, Thomas Hocker, Gernot K. Boiger and Joseph M. Brader

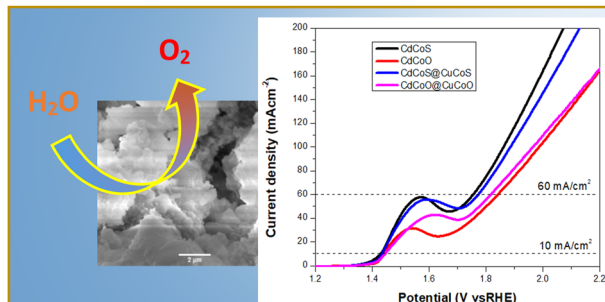
2035



### Slow hole diffusion limits the efficiency of p-type dye-sensitized solar cells based on the P1 dye

Maria B. Brands, Olivier C. M. Lugier, Kaijian Zhu, Annemarie Huijser, Stefania Tanase and Joost N. H. Reek\*

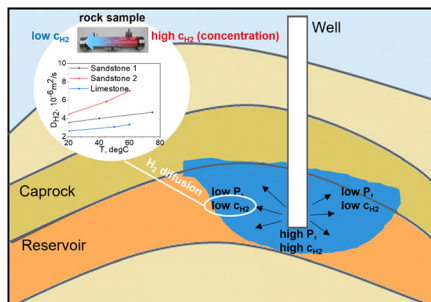
2042



### Unrevealing the potential of multicomponent metal-ion incorporation and sulfide modification in cobalt oxide for efficient water oxidation

Muzzayab Masood, Muhammad Aamir,\* Muhammad Ejaz Khan, Muhammad Sher, Khush Bakhat Akram, Hafiz Zahid Shafi, Hamad Almohamadi,\* M. d. Akhtaruzzaman and M. d. Shahiduzzaman

2051



### Temperature dependence of hydrogen diffusion in reservoir rocks: implications for hydrogen geologic storage

Yun Yang,\* Amber Zandanel, Shimin Liu, Chelsea W. Neil, Timothy C. Germann and Michael R. Gross



## CORRECTION

2066

**Correction: Copper and iron co-doping effects on the structure, optical energy band gap, and catalytic behaviour of  $\text{Co}_3\text{O}_4$  nanocrystals towards low-temperature total oxidation of toluene**

Hippolyte Todou Assaouka, Issah Ngouh Nsangou, Daniel Manhouli Daawe, Daniel Onana Mevoa, Abraham Atour Zigla, Patrick Ndouka Ndouka and Patrick Mountapmbeme Kouotou\*

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