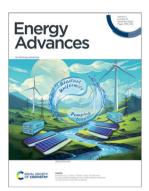
# **Energy Advances**

# rsc.li/energy-advances

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

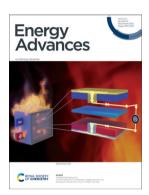
# IN THIS ISSUE

ISSN 2753-1457 CODEN EANDBJ 2(12) 1973-2152 (2023)



#### Cover

See Puiki Leung, Lin Zeng, Tianshou Zhao, Lei Wei et al., pp. 2006-2017. Image reproduced by permission of Lei Wei from Energy Adv., 2023, **2**, 2006.



# Inside cover

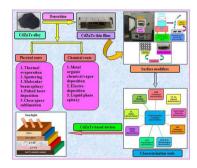
See Guangsheng Zhang et al., pp. 2018-2028. Image reproduced by permission of Guangsheng Zhang from Energy Adv., 2023, **2**, 2018. We would like to acknowledge that Madeline Liu supported in making the image and that the software Blender was used in making the image.

# **REVIEW**

1980

CdZnTe thin films as proficient absorber layer candidates in solar cell devices: a review

Ritika Sharma, Sakshi Chuhadiya, Kamlesh, Himanshu and M. S. Dhaka\*

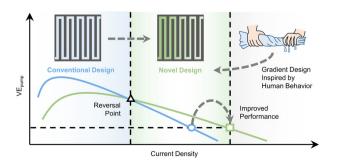


# **PAPERS**

2006

In-plane gradient design of flow fields enables enhanced convections for redox flow batteries

Lyuming Pan, Jianyu Xie, Jincong Guo, Dongbo Wei, Honghao Qi, Haoyao Rao, Puiki Leung,\* Lin Zeng,\* Tianshou Zhao\* and Lei Wei\*



**Executive Editor** 

**Editorial Production Manager** Sarah Whitbread

**Deputy Editor** 

Jon Ferrier

**Editorial Assistant** 

Alex Holiday

**Publishing Assistant** 

Lee Colwill

Assistant Editors

Jamie Purcell, Alexander John, Emily Ellison, Jack Pitchers, Clare Fitzgerald

For queries about submitted papers, please contact Sarah Whitbread, Editorial Production Manager in the first instance. E-mail: energyadvances@rsc.org For pre-submission queries please contact Emma Eley, Executive Editor. Email: energyadvances-rsc@rsc.org

Energy Advances (electronic: ISSN 2753-1457) is published 12 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, UK CB4 0WF.

Energy Advances is a Gold Open Access journal and all articles are free to read. Please email orders@rsc.org to register your interest or contact Royal Society of Chemistry Order Department, Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, CB4 0WF, UK Tel +44 (0)1223 432398; E-mail: orders@rsc.org

Whilst this material has been produced with all due care, the Royal Society of Chemistry cannot be held responsible or liable for its accuracy and completeness, nor for any consequences arising from any errors or the use of the information contained in this publication. The publication of advertisements does not constitute any endorsement by the Royal Society of Chemistry or Authors of any products advertised. The views and opinions advanced by contributors do not necessarily reflect those of the Royal Society of Chemistry which shall not be liable for any resulting loss or damage arising as a result of reliance upon this material. The Royal Society of Chemistry is a charity, registered in England and Wales, Number 207890, and a company incorporated in England by Royal Charter (Registered No. RC000524), registered office: Burlington House, Piccadilly, London W1J 0BA, UK, Telephone: +44 (0) 207 4378 6556.

### Advertisement sales:

Tel +44 (0) 1223 432246; Fax +44 (0) 1223 426017; E-mail advertising@rsc.org

For marketing opportunities relating to this journal, contact marketing@rsc.org

# **Energy Advances**

# rsc.li/energy-advances

Energy Advances is a multidisciplinary journal that publishes research across a broad scope of topics, and welcomes work that contributes to developments throughout energy science and related fields. We offer an inclusive home to advances across the spectrum of energy science - from central concepts to exciting research at the nexus of subdisciplines.

#### **Editorial Board**

Editor-in-Chief

Volker Presser, Leibniz Institute for New Materials, Germany

Associate Editors

B. Layla Mehdi, University of Liverpool, UK

Michael Naguib, Tulane University, USA Guang Feng, Huazhong University of Science Kong Polytechnic University, Hong Kong, and Technology (HUST), China Matthew Suss, Form Energy, USA You Han, Tianjin University, China

Wai-Yeung (Raymond) Wong, The Hong

# **Advisory Board**

Nirmala Grace Andrews, Vellore Institute of Technology, India

Sarbajit Banerjee, Texas A&M University, USA Sudip Chakraborty, Harish-Chandra Research Institute (HRI) Allahabad, India Graeme Cooke, University of Glasgow, UK Benjamin Dietzek, Friedrich Schiller University Jena, Germany Liming Ding, National Center for

Nanoscience and Technology, China Baizeng Fang, The University of British Columbia, Canada John Gordon, Brookhaven National

Laboratory, USA Anita Ho-Ballie, University of Sydney, Australia

Shaojun Guo, Peking University, China Kui Jiao, Tianjin University, China Dattaray Late, CSIR-National Chemical Laboratory, India Yan Lu, Helmholtz-Zentrum Berlin für

Materialien und Energie GmbH, Germany Heather MacLean, University of Toronto, Canada

Hoi Ri Moon, Ulsan National Institute of Science and Technology, Korea Thuc-Quyen Nguyen, University of California Santa Barbara, USA

Petr Nikrityuk, University of Alberta, Canada Kenneth Ozoemena, University of the Witwatersrand, South Africa Kristin Persson, University of California,

USA, and Lawrence Berkeley National Laboratory, USA

Jenny Pringle, Deakin University, Australia Jürgen Steimle, Universität des Saarlandes,

Valeska Ting, University of Bristol, UK Shenghao Wang, Shanghai University, China Ajayan Vinu, The University of Newcastle, Australia

Naoaki Yabuuchi, Yokohama National University, Japan

Aldo José Gorgatti Zarbin, Universidade Federal do Paraná (UFPR), Brazil Qiang Zhang, Tsinghua University, China Hongcai Zhou, Texas A&M University, USA

# Information for Authors

Full details on how to submit material for publication in Energy Advances are given in the Instructions for Authors (available from http://www.rsc.org/authors).

Submissions should be made via the journal's homepage: rsc.li/energy-advances

Authors may reproduce/republish portions of their published contribution without seeking permission from the Royal Society of Chemistry, provided that any such republication is accompanied by an acknowledgement in the form: (Original Citation)-Reproduced by permission of the Royal Society of Chemistry.

This journal is © The Royal Society of Chemistry 2023. Apart from fair dealing for the purposes of research or private study for non-commercial purposes, or criticism or review, as permitted under the Copyright, Designs and Patents Act 1988 and the Copyright and Related Rights Regulation 2003, this publication may only be reproduced, stored or transmitted, in any form or by any means, with the prior permission in writing of the Publishers or in the case of reprographic reproduction in accordance with the terms of licences issued by the Copyright Licensing Agency in the UK. US copyright law is applicable to users in the USA.

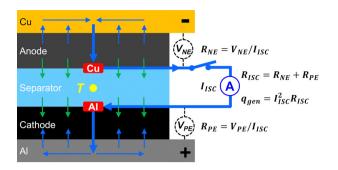
Registered charity number: 207890



# **PAPERS**

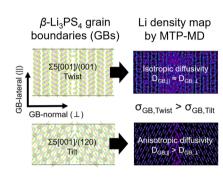
# A novel method for simultaneous triggering and in situ sensing of internal short circuit in lithium-ion cells

Mary K. Long, Siyi Liu and Guangsheng Zhang\*



# Lithium dynamics at grain boundaries of β-Li<sub>3</sub>PS<sub>4</sub> solid electrolyte

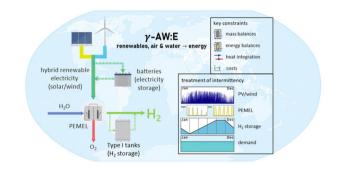
Randy Jalem, Manas Likhit Holekevi Chandrappa, Ji Qi, Yoshitaka Tateyama and Shyue Ping Ong\*



# 2042

# Quantifying global costs of reliable green hydrogen

- D. Freire Ordóñez, C. Ganzer, T. Halfdanarson, A. González Garay, P. Patrizio, A. Bardow,
- G. Guillén-Gosálbez, N. Shah and N. Mac Dowell\*



#### 2055

Understanding the evolution of catalytically active multi-metal sites in a bifunctional high-entropy alloy electrocatalyst for zinc-air battery application

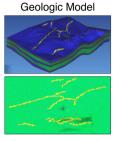
Chetna Madan, Saumya R. Jha, Nirmal Kumar Katiyar, Arkaj Singh, Rahul Mitra, Chandra Sekhar Tiwary,\* Krishanu Biswas\* and Aditi Halder\*

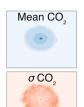


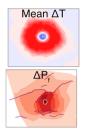
# **PAPERS**

### 2069

# Offshore CO, Storage

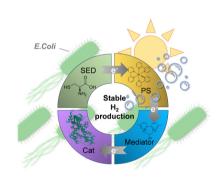






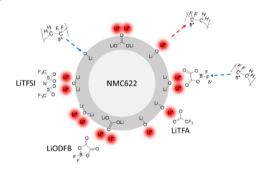
# Assessing reservoir performance for geologic carbon sequestration in offshore saline reservoirs

Lars Koehn,\* Brian W. Romans and Ryan M. Pollyea



E. coli-based semi-artificial photosynthesis: biocompatibility of redox mediators and electron donors in [FeFe] hydrogenase driven hydrogen evolution

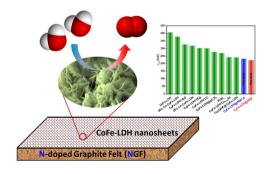
Mira T. Gamache, Larissa Kurth, Dawit T. Filmon, Nicolas Plumeré and Gustav Berggren\*



Electrochemical investigation of fluorine-containing Li-salts as slurry cathode additives for tunable rheology in super high solid content NMP slurries

Francesco Colombo,\* Marcus Müller, Andreas Weber, Noah Keim, Fabian Jeschull, Werner Bauer and Helmut Ehrenberg

2109



Cobalt-iron layered double hydroxide nanosheet-wrapped nitrogen-doped graphite felt as an oxygen-evolving electrode

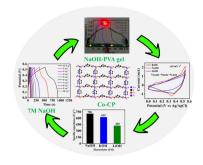
Noor Fatima Shahid, Ahsan Jamal, Gulfam-ul Hag, Maham Javed, Muhammad Saifullah and Mohsin Ali Raza Anjum\*

# **PAPERS**

# 2119

Exploring the feasibility of a two-dimensional layered cobalt-based coordination polymer for supercapacitor applications: effect of electrolytic cations

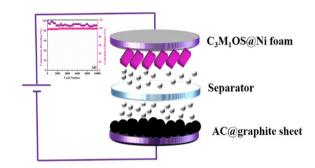
Rakesh Deka, Shashank Rathi and Shaikh M. Mobin\*



# 2129

Compositionally variant bimetallic Cu-Mn oxysulfide electrodes with meritorious supercapacitive performance and high energy density

Heba M. El Sharkawy, Abdussalam M. Elbanna, Ghada E. Khedr and Nageh K. Allam\*



# 2140

Efficient procedure for biodiesel synthesis from waste oil and t-butylation of resorcinol using a porous microtube polymer-based solid acid

Zhijin Guo and Xuezheng Liang\*

