

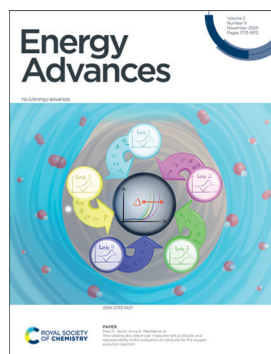
Energy Advances

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(11) 1773-1972 (2023)



Cover

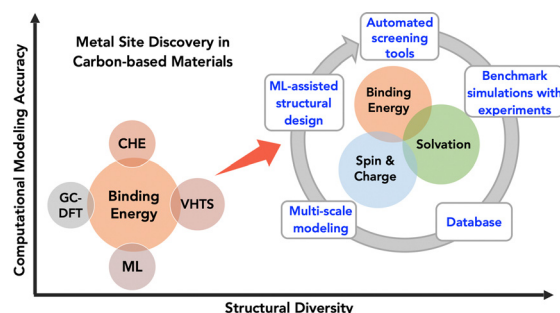
See Marc F. Tesch, Anna K. Mechler *et al.*, pp. 1823–1830. Image reproduced by permission of Marc F. Tesch and Anna K. Mechler from *Energy Adv.*, 2023, 2, 1823.

REVIEWS

1781

Advancements in computational approaches for rapid metal site discovery in carbon-based materials for electrocatalysis

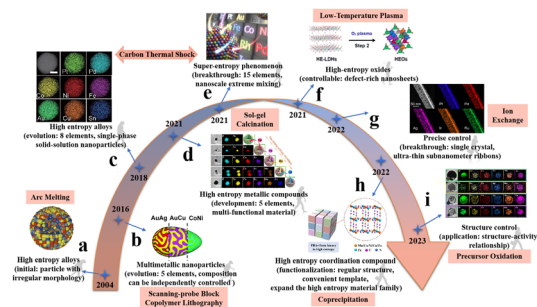
Somayeh Faraji, Zhiyu Wang, Paola Lopez-Rivera and Mingjie Liu*



1800

High entropy materials—emerging nanomaterials for electrocatalysis

Hang Li, Li Ling, Shengfa Li, Feng Gao* and Qingyi Lu*



Executive Editor

Emma Eley

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

Publisher

Neil Hammond

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 0WE.

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 and Technology (HUST), China
Matthew Suss, Form Energy, USA
You Han, Tianjin University, China

Wai-Yeung (Raymond) Wong, The Hong Kong Polytechnic University, Hong Kong, China

Advisory Board

Nirmala Grace Andrews, Vellore Institute of Technology, India
Sarbjit 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, Germany
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

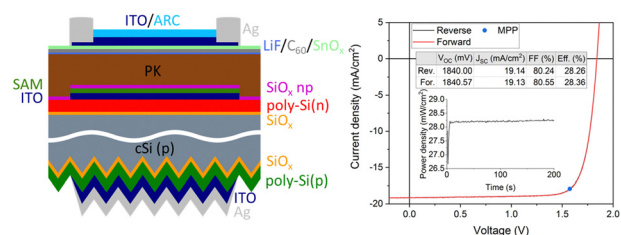


COMMUNICATION

1818

Rear textured p-type high temperature passivating contacts and their implementation in perovskite/silicon tandem cells

Arnaud Walter,* Brett A. Kamino, Soo-Jin Moon, Patrick Wyss, Juan J. Diaz Leon, Christophe Allebé, Antoine Descoeudres, Sylvain Nicolay, Christophe Ballif, Quentin Jeangros and Andrea Ingenito*

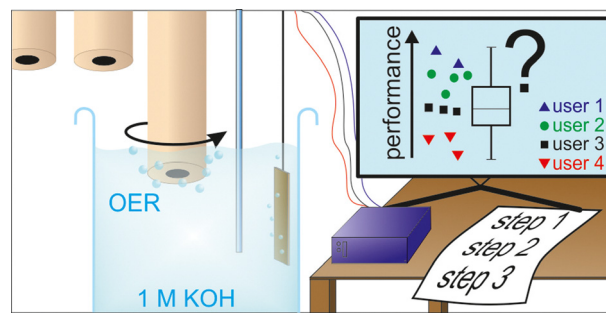


PAPERS

1823

The rotating disc electrode: measurement protocols and reproducibility in the evaluation of catalysts for the oxygen evolution reaction

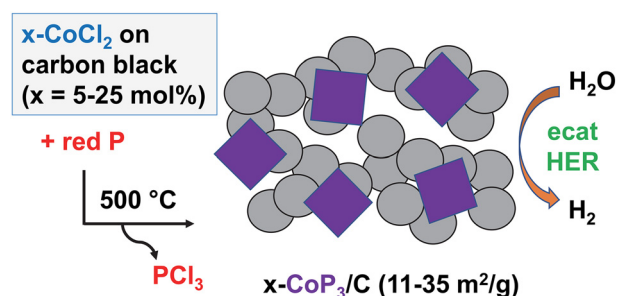
Marc F. Tesch,* Sebastian Neugebauer, Praveen V. Narangoda, Robert Schlögl and Anna K. Mechler*



1831

Flexible direct synthesis of phosphorus-rich CoP_3 on carbon black and its examination in hydrogen evolution electrocatalysis

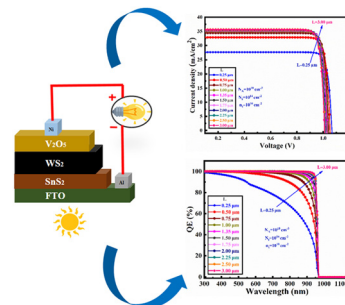
Ishanka A. Liyanage, Hannah Barmore and Edward G. Gillan*



1843

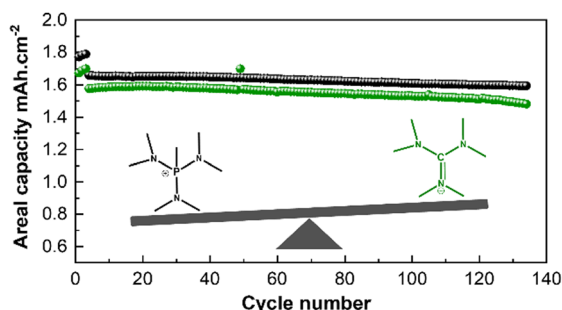
Design and analysis of a $\text{SnS}_2/\text{WS}_2/\text{V}_2\text{O}_5$ double-heterojunction toward high-performance photovoltaics

Jubair Al Mahmud, Md. Ferdous Rahman,* Abdul Kuddus,* Md. Hasan Ali, A. T. M. Saiful Islam, Md. Dulal Haque, Sheikh Rashel Al Ahmed, Muhammad Mushtaq and Abu Bakar Md. Ismail



PAPERS

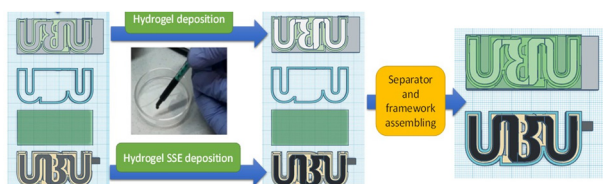
1859



A comparison of the impact of cation chemistry in ionic liquid-based lithium battery electrolytes

Faezeh Makhlooghiyazad,* Colin S. M. Kang, Mojtaba Eftekharnia, Patrick C. Howlett, Oliver Hutt, Maria Forsyth, Luke A. O'Dell and Jennifer M. Pringle*

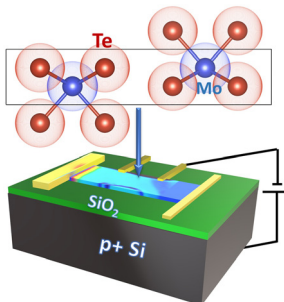
1872



Semi-solid electrodes based on injectable hydrogel electrolytes for shape-conformable batteries

Mario Borlaf, Matias L. Picchio, Gisela Carina Luque, Miryam Criado-Gonzalez, Gregorio Guzmán-Gonzalez, Daniel Pérez-Antolin, Gabriele Lingua, David Mecerreyes* and Edgar Ventosa*

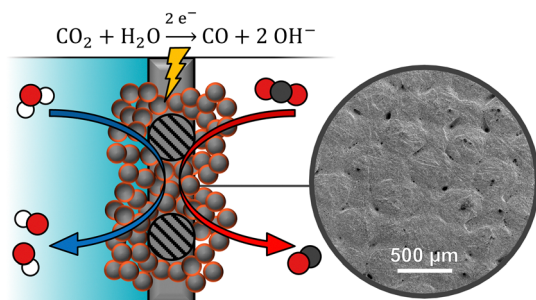
1882



Electrostatic modulation of thermoelectric transport properties of 2H-MoTe₂

Tianhui Zhu, Sree Sourav Das, Safoura Nayeab Sadeghi, Farjana Ferdous Tonni, Sergiy Krylyuk, Costel Constantin, Keivan Esfarjani, Albert V. Davydov and Mona Zebajadi*

1893



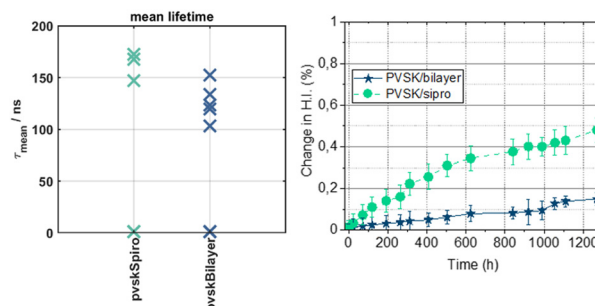
Electrowetting limits electrochemical CO₂ reduction in carbon-free gas diffusion electrodes

Lorenz M. Baumgartner, Andrey Goryachev, Christel I. Koopman, David Franzen, Barbara Ellendorff, Thomas Turek and David A. Vermaas*

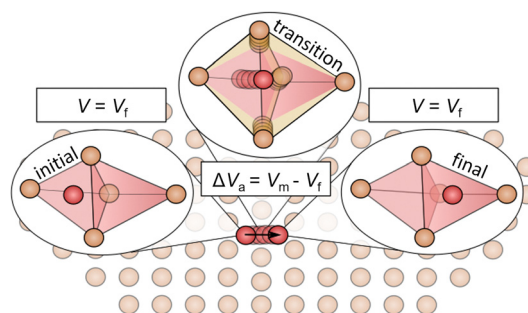


PAPERS

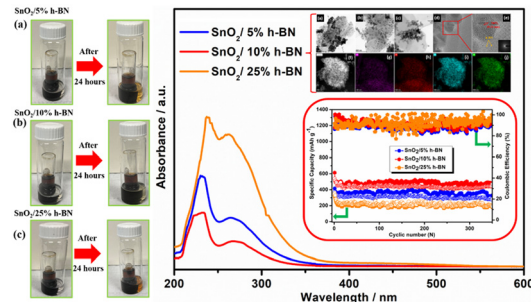
1905

An Fe₃O₄ based hole transport bilayer for efficient and stable perovskite solar cellsAkbar Ali Qureshi, Emilia R. Schütz, Sofia Javed,^{*} Lukas Schmidt-Mende and Azhar Fakharuddin^{*}

1915

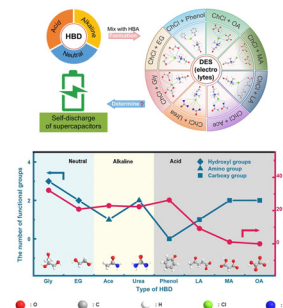
Pressure dependence of ionic conductivity in site disordered lithium superionic argyrodite Li₆PS₅BrVasiliki Faka, Matthias T. Agne, Paul Till, Tim Bernges, Marcel Sadowski, Ajay Gautam, Karsten Albe and Wolfgang G. Zeier^{*}

1926

SnO₂/h-BN nanocomposite modified separator as a high-efficiency polysulfide trap in lithium–sulfur batteriesChandra Sekhar Bongu, Yasmin Mussa, Sara Aleid, Muhammad Arsalan and Edreese H. Alsharaeh^{*}

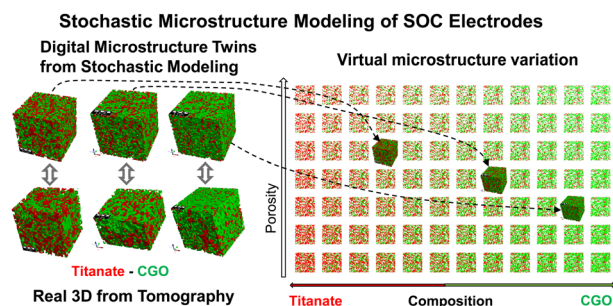
1935

Screening the deep eutectic electrolytes for supercapacitors with alleviated self-discharge

Wenxia Huang, Xiaohui Yan, Yige Xiong, Qihui Guo, Xin Zhang, Fengyu Huang, Houqiang Shi and Xiang Ge^{*}

PAPERS

1942



Stochastic microstructure modeling of SOC electrodes based on a pluri-Gaussian method

Philip Marmet,* Lorenz Holzer, Thomas Hocker, Vinzenz Muser, Gernot K. Boiger, Mathias Fingerle, Sarah Reeb, Dominik Michel and Joseph M. Brader

CORRECTION

1968

Correction: Generation of covalent organic framework-derived porous N-doped carbon nanosheets for highly efficient electrocatalytic hydrogen evolution

Sayan Halder, Anup Kumar Pradhan, Soumen Khan and Chanchal Chakraborty*

