

IN THIS ISSUE

ISSN 2753-1457 CODEN EANDBJ 2(6) 741-888 (2023)



Cover

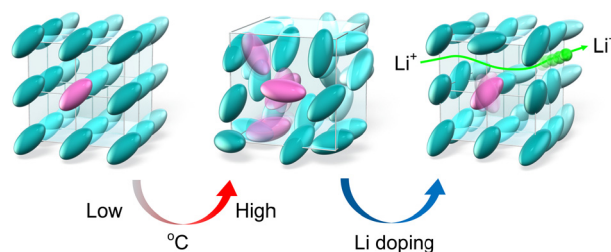
See Masahiro Yoshizawa-Fujita *et al.*, pp. 748–764. Image reproduced by permission of Masahiro Yoshizawa-Fujita from *Energy Adv.*, 2023, 2, 748.

REVIEWS

748

Organic ionic plastic crystals: flexible solid electrolytes for lithium secondary batteries

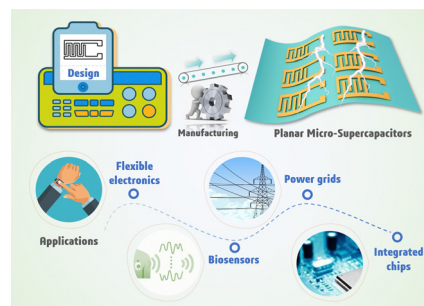
Morgan L. Thomas, Kan Hatakeyama-Sato, Shinkoh Nanbu and Masahiro Yoshizawa-Fujita*



765

Planar micro-supercapacitors toward high performance energy storage devices: design, application and prospects

Shifan Zhu, Zhiheng Xu, Haijun Tao,* Dandan Yang, Xiaobin Tang* and Yuqiao Wang*



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, Aphra Murray, Alexander John, Emily Ellison, Jack Pitchers

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 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

Michael Naguib, Tulane University, USA
Guang Feng, Huazhong University of Science and Technology (HUST), China

Anita Ho-Ballie, University of Sydney, Australia

Associate Editors

B. Layla Mehdi, University of Liverpool, UK

Matthew Suss, Israel Institute of Technology, Israel

You Han, Tianjin University, China

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

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

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.

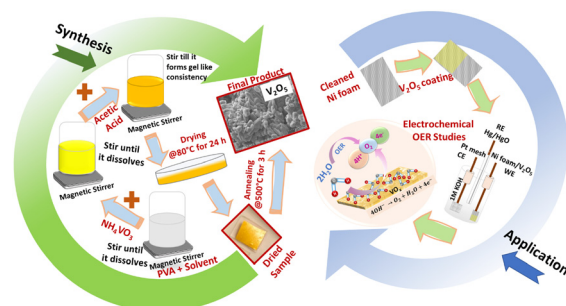
Registered charity number: 207890



784

Well-defined 2D transition vanadium pentoxide (V_2O_5) flat nanorods with large-scale synthesis feasibility as an electrocatalyst for the oxygen evolution reaction (OER)

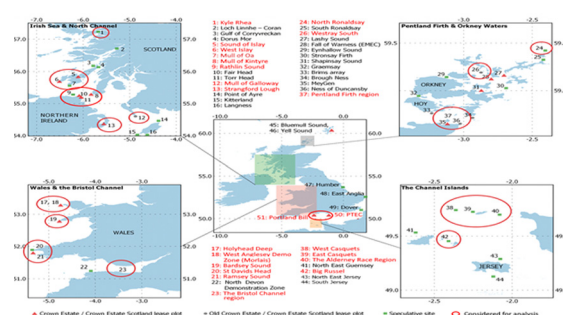
Veena Mounasamy, Ganesan Srividhya and Nagamony Ponpandian*



789

UK studies on the wider energy system benefits of tidal stream

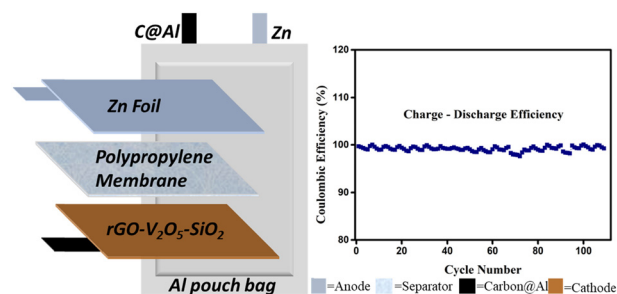
Danny Pudjianto,* Ciaran Frost, Daniel Coles, Athanasios Angeloudis, Gavin Smart and Goran Strbac



797

An aqueous rechargeable and high-capacity zinc ion battery using a novel $rGO-V_2O_5-SiO_2$ hybrid nanocomposite as a cathode material

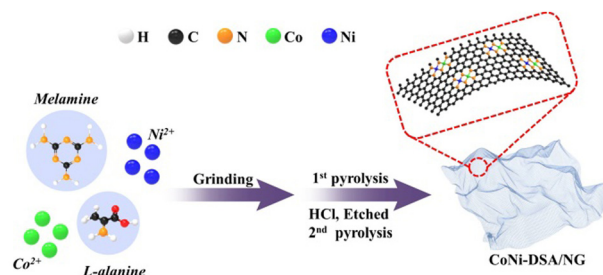
Akash Lata, Anuj Kumar, Gautam Biswas, Nripen Chanda and Ravi Kumar Arun*



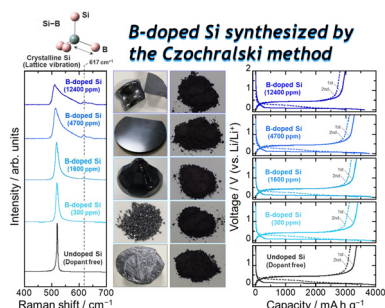
805

Atomically dispersed Co/Ni dual sites embedded in nitrogen-doped graphene for boosting oxygen evolution

Yaoyao Deng, Yao Lin, Minxi Zhang, Rentong Dai, Zhen Luo, Quanfa Zhou, Mei Xiang,* Jirong Bai* and Shuanglong Lu*



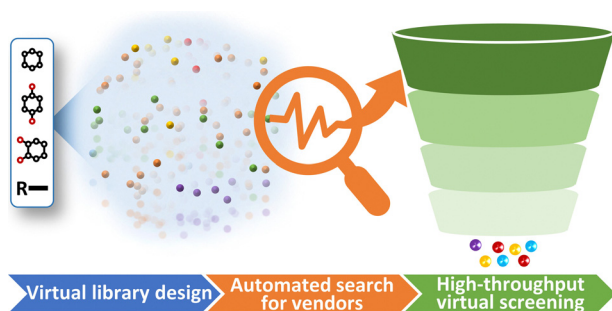
813



Lithiation/delithiation of silicon heavily doped with boron synthesized using the Czochralski process

Masahiro Shimizu,* Kohei Kimoto, Ayaka Kikuchi, Toshinori Taishi and Susumu Arai

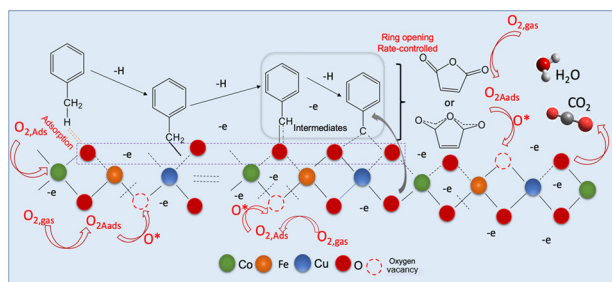
820



Virtual screening of organic quinones as cathode materials for sodium-ion batteries

Xuan Zhou, René A. J. Janssen and Süleyman Er*

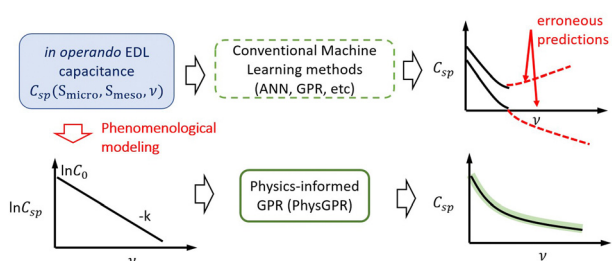
829



Copper and iron co-doping effects on the structure, optical energy band gap, and catalytic behaviour of Co₃O₄ 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*

843



Physics-informed Gaussian process regression of *in operando* capacitance for carbon supercapacitors

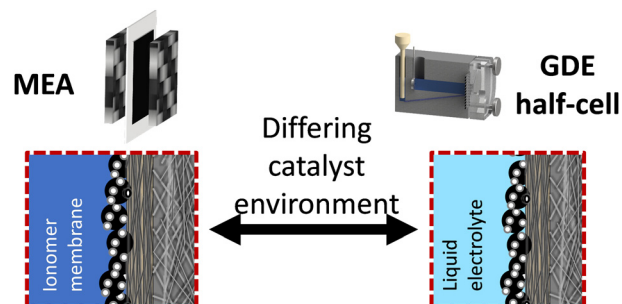
Runtong Pan, Mengyang Gu and Jianzhong Wu*



854

Which insights can gas diffusion electrode half-cell experiments give into activity trends and transport phenomena of membrane electrode assemblies?

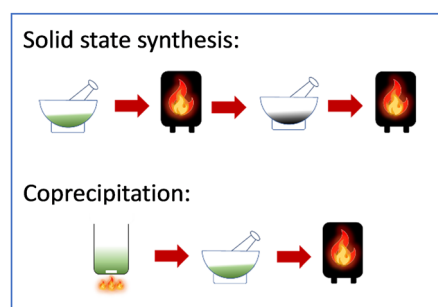
Nicolai Schmitt, Mareike Schmidt, Jonathan E. Mueller, Lasse Schmidt, Michael Trabold, Katharina Jeschonek and Bastian J. M. Etzold*



864

Optimising the synthesis of LiNiO_2 : coprecipitation versus solid-state, and the effect of molybdenum doping

Jaime-Marie Price,* Phoebe Allan* and Peter Slater*



877

Effective electro-oxidation of hydroxymethylfurfural using the electrografted immobilized aminoxyl radical

Jiaxun Guo, Maryam Abdinejad, Amirhossein Farzi, Mahdi Salehi and Ali Seifitokaldani*

