Open Access Article. Published on 21 March 2023. Downloaded on 11/17/2025 5:08:22 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

Journal of Materials Chemistry A

Materials for energy and sustainability

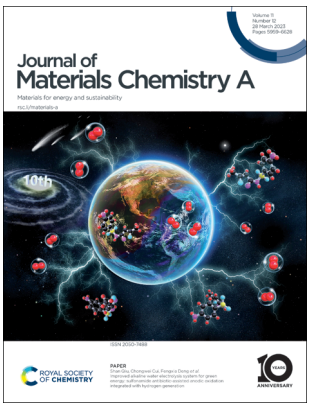
rsc.li/materials-a

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 2050-7488 CODEN JMCAET 11(12) 5959–6628 (2023)

Cover
See Shudong Yu, Dahua Shou *et al.*, pp. 5978–6015. Image reproduced by permission of Shudong Yu and Dahua Shou from *J. Mater. Chem. A*, 2023, **11**, 5978.



Inside cover
See Shan Qiu, Chongwei Cui, Fengxia Deng *et al.*, pp. 6129–6143. Image reproduced by permission of Chongwei Cui from *J. Mater. Chem. A*, 2023, **11**, 6129.

EDITORIAL

5975

Introduction to Polymer Upcycling

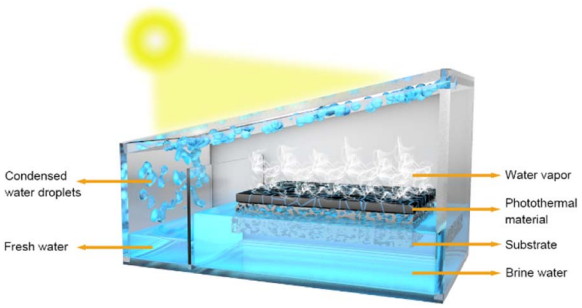
Blair Brettmann,* Marco A. Fraga, Monika Gosecka and Natalie Stingelin

REVIEWS

5978

Recent advances in interfacial solar vapor generation: clean water production and beyond

Shudong Yu,* Yuheng Gu, Xujiang Chao, Guanghan Huang and Dahua Shou*



Open Access Article. Published on 21 March 2023. Downloaded on 11/17/2025 5:08:22 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

Editorial Staff

Executive Editor
Michaela Muehlberg

Deputy Editor
Geraldine Hay

Editorial Production Manager
Jonathon Watson

Senior Publishing Editor
Isobel Tibbetts

Development Editor
Rose Wedgbury

Publishing Editors
Blake Baker, Matthew Blow, Chris Dias, Hemna Fathima, Juan Gonzalez, Ellie Griffiths, Rob Hinde, Sam Howell, Ash Hyde, Francesca Jacklin, Evie Karkera, Shruti Karnik, Sophie Koh, Tamara Kosikova, Brian Li, Sam Mansell, Carole Martin, Kirsty McRoberts, Yasmin Mehanna, Tiffany Rogers, Cat Schofield, Charu Storr-Vijay, Manman Wang, Ella White, Tom Williams

Editorial Assistant
Daniel Smith

Publishing Assistant
Julie-Ann Roszkowski

Publisher
Sam Keltie

For queries about submitted papers, please contact Jonathon Watson, Editorial Production Manager in the first instance. E-mail: **materialsA@rsc.org**

For pre-submission queries please contact Michaela Muehlberg, Executive Editor. E-mail: **materialsA-rsc@rsc.org**

Journal of Materials Chemistry A (electronic: ISSN 2050-7496) is published 48 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, UK CB4 0WF.

All orders, with cheques made payable to the Royal Society of Chemistry, should be sent to the 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**

2023 Annual (electronic) subscription price: £1968, $4085. Customers in Canada will be subject to a surcharge to cover GST. Customers in the EU subscribing to the electronic version only will be charged VAT.

If you take an institutional subscription to any Royal Society of Chemistry journal you are entitled to free, site-wide web access to that journal. You can arrange access via Internet Protocol (IP) address at www.rsc.org/ip

Customers should make payments by cheque in sterling payable on a UK clearing bank or in US dollars payable on a US clearing bank.

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**

ROYAL SOCIETY OF CHEMISTRY

Journal of Materials Chemistry A

rsc.li/materials-a

Journal of Materials Chemistry A, B & C cover high quality studies across all fields of materials chemistry. The journals focus on those theoretical or experimental studies that report new understanding, applications, properties and synthesis of materials. *Journal of Materials Chemistry A* covers materials with applications in energy & sustainability.

Editorial Board

Editor-in-Chief
Anders Hagfeldt, EPFL, Switzerland

Scientific Editors
Frank Osterloh, University of California, Davis, USA

Associate Editors
Veronica Augustyn, North Carolina State University, USA
Viola Birss, University of Calgary, Canada
Goutam De, S N Bose National Centre for Basic Sciences, India
Ghim Wei Ho, National University of Singapore, Singapore
Yun Jeong Hwang, Seoul National University, South Korea
Kisuk Kang, Seoul National University, South Korea
Subrata Kundu, Central Electrochemical Research Institute (CECRI), India
Dan Li, Jinan University, China
David Lou, Nanyang Technological University, Singapore
Yi-Chun Lu, Chinese University of Hong Kong, Hong Kong
Shizhang Qiao, University of Adelaide, Australia
Jennifer Rupp, Massachusetts Institute of Technology, USA
Miriam Unterlass, University of Konstanz, Germany
Lydia Wong, Nanyang Technological University, Singapore
Li-Zhu Wu, Technical Institute of Physics and Chemistry, China
Yusuke Yamauchi, University of Queensland, Australia
Zhen Zhou, Nankai University, China

Advisory Board

P. Adelhelm, Humboldt-University Berlin, Germany
R. Ahuja, Uppsala University, Sweden
C. Ania, CNRS Orleans, France
J.-B. Baek, Ulsan National Institute of Science and Technology, Korea
C. Berlinguette, University of British Columbia, Canada
K. Biswas, Jawaharlal Nehru Centre for Advanced Scientific Research, India
E. Bucher, University of Leoben, Austria
M. Chabinyc, University of California, Santa Barbara, USA
A. Chattopadhyay, IIT Guwahati, India
J.-S. Chen, Shanghai Jiao Tong University, China
W. Chueh, Stanford University, USA
S. Cussen, University of Sheffield, UK
M. Eddaoudi, King Abdullah University of Science and Technology, Saudi Arabia
T. Edvinsson, Uppsala University, Sweden
X. Feng, Dresden University of Technology, Germany
J. Fleig, Dresden University of Technology, Germany
M. Florea, University of Bucharest, Romania
G. Galli, University of Chicago, USA
N. Garcia-Araez, University of Southampton, UK
G. Grancini, Univeristy of Pavia, Italy
J. Huang, Northwestern University, USA
H. Imahori, Kyoto University, Japan
T. Ishihara, Kyushu University, Japan
S. Islam, University of Bath, UK
F. Jiao, University of Delaware, USA
E. Kendrick, University of Birmingham, UK
B. Kim, KAIST, Korea
D-H. Kim, Ewha Womens University, Korea
U. Kramm, TU Darmstadt, Germany
Y.J. Lee, Hanyang University, Korea
B. Li, Tsinghua University, China
J. Li, Rutgers University, USA
Z. Lin, National University of Singapore, Singapore
B. Lotsch, Max Planck Institute for Solid State Research, Stuttgart, Germany
J. Luo, Nankai University, China
C-B. Mullins, University of Texas at Austin, USA
A. K. Nandi, IACS, India
L. Nazar, University of Waterloo, Canada
M. Niederberger, ETH Zürich, Switzerland
A.F. Nogueira, University of Campinas, Brazil
C. Osuji, University of Pennsylvania, USA
S. Parker, University of Bath, UK
S. Patil, Indian Institute of Science, Bangalore, India
Z. Schnepp, University of Birmingham, UK
Z. Shao, Curtin University, Australia
Y. Shimakawa, Kyoto University, Japan
S. Skinner, Imperial College London, UK
M.C. Stefan, University of Texas at Dallas, USA
C-Y. Su, Sun Yat-Sen University, China
S.-G. Sun, Xiamen University, China
V. Thangadurai, University of Calgary, Canada
M. Titirici, Imperial College London, UK
S. Uk Son, Sungkyunkwan University, Korea
E. Unger, Lung University, Sweden
R.-N. Vannier, ENSC Lille, France
M. Wang, Sun Yat-Sen University, China
M. Wei, Beijing University of Chemical Technology, China
E. Weiss, Northwestern University, USA
C. Williams, University of Oxford, UK
C. Xiong, Boise State University, USA
Y. Xu, University College London, UK
Y-J. Xu, Fuzhou University, China
M. Ye, Xiamen University, China
Q. Zhang, Tsinghua University, China
X.S. Zhao, University of Queensland, Australia
G. Zheng, Fudan University, China

Information for Authors

Full details on how to submit material for publication in Journal of Materials Chemistry A 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/materials-a**. Submissions: The journal welcomes submissions of manuscripts for publication as Full Papers, Communications, Reviews, Highlights and Applications. Full Papers and Communications should describe original work of high quality and impact which must highlight the novel properties or applications (or potential properties/applications) of the materials studied.

Additional details are available from the Editorial Office or **http://www.rsc.org/authors**

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

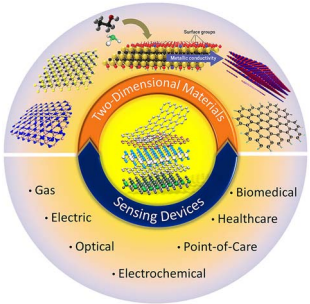
Open Access Article. Published on 21 March 2023. Downloaded on 11/17/2025 5:08:22 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

REVIEWS

6016

2D material-based sensing devices: an update

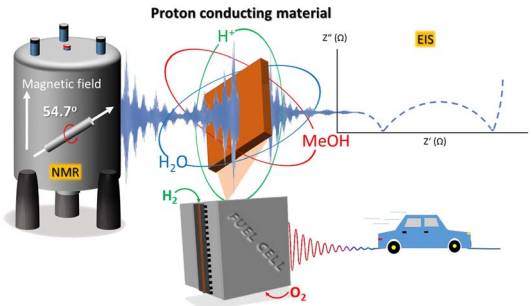
Jahan Zeb Hassan, Ali Raza,* Zaheer Ud Din Babar, Usman Qumar, Ngeywo Tolbert Kaner and Antonio Cassinese



6064

Advances in nuclear magnetic resonance spectroscopy: case of proton conductive materials

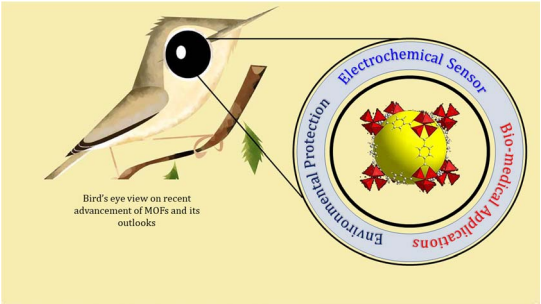
Ya. Kobzar, H. Oulyadi, S. Marais and K. Fatyeyeva*



6090

Recent advancements of metal–organic frameworks in sensing platforms: relevance in the welfare of the environment and the medical sciences with regard to cancer and SARS-CoV-2

Arindam Das, Sourav Bej, Nithun Ranjan Pandit, Priyabrata Banerjee* and Biplab Biswas*

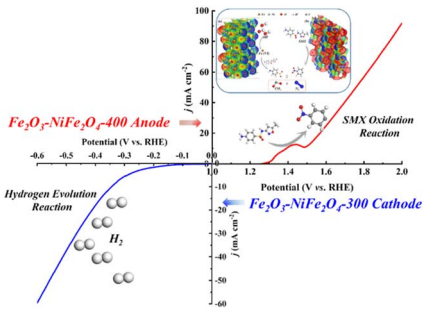


PAPERS

6129

Improved alkaline water electrolysis system for green energy: sulfonamide antibiotic-assisted anodic oxidation integrated with hydrogen generation

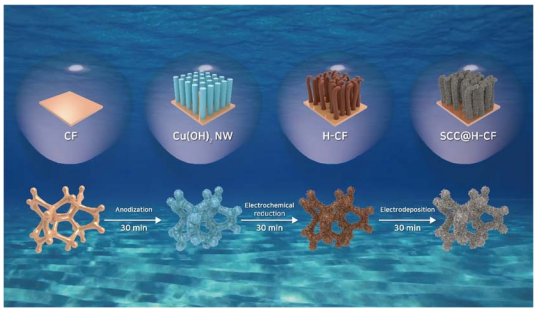
Qiwei Zhang, Yuhang Tong, Zhuowen Wang, Baojian Jing, Yingshi Zhu, Shan Qiu,* Chongwei Cui* and Fengxia Deng*



Open Access Article. Published on 21 March 2023. Downloaded on 11/17/2025 5:08:22 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

PAPERS

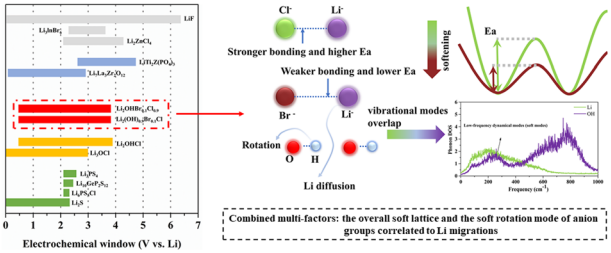
6144



Ultrathin electrochemical layer tailoring of lithiophilic materials with 3D hierarchical configuration for lithium metal batteries: Sn/Cu_6Sn_5@$Cu_{2+1}O$ nanowires on Cu foam

Garam Lee, Jaeyun Ha, Jinhee Lee, Yong-Tae Kim* and Jinsub Choi*

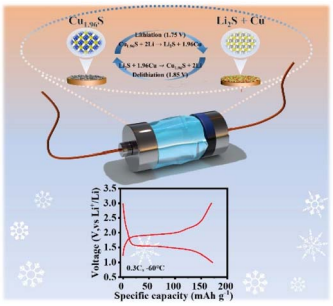
6157



Enhanced ionic conductivity of protonated antiperovskites *via* tuning lattice and rotational dynamics

Chaohong Guan, Yu Yang, Runxin Ouyang, Huirong Jing, Jieqiong Yan and Hong Zhu*

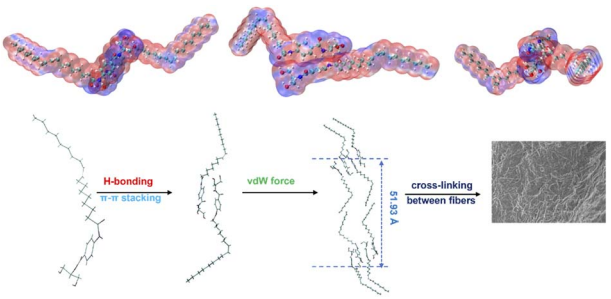
6168



Uncovering the untapped potential of copper(I) sulphide toward lithium-ion storage under ultra-low temperatures

Yifan Chen, Jinze Wang, Youran Hong, Yusi Yang, Lulu Tan, Nan Li, Can Ma, Jiangwei Wang, Xiulin Fan and Yujie Zhu*

6181



This journal is © The Royal Society of Chemistry 2023

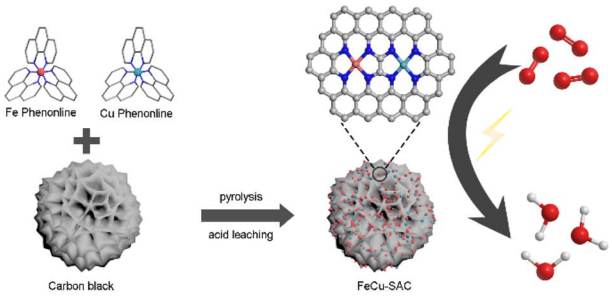
Open Access Article. Published on 21 March 2023. Downloaded on 11/17/2025 5:08:22 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

PAPERS

6191

Fe, Cu dual-metal single atom catalyst on commercial carbon black for efficient oxygen reduction reaction

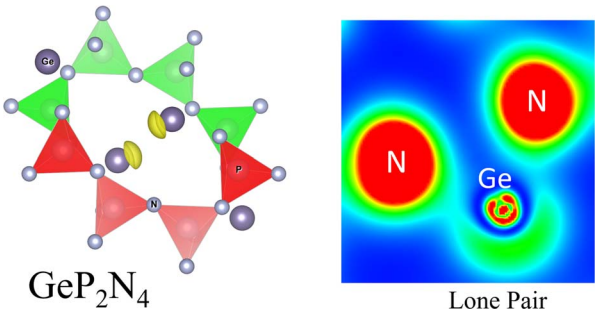
Hongzhou Yang, He Huang, Qing Wang, Lu Shang,* Tierui Zhang and Shouguo Wang*



6198

The importance of lone pairs to structure and bonding of the novel germanium nitridophosphate GeP_2N_4

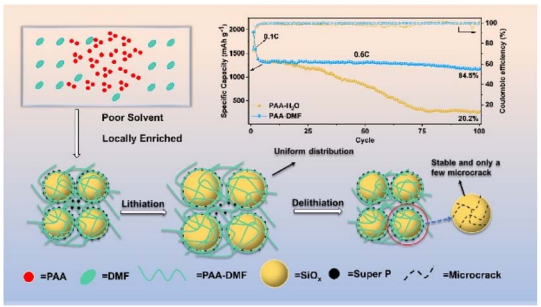
Tristan de Boer,* Cody Somers, Teak Boyko, Sebastian Ambach, Lucien Eisenburger, Wolfgang Schnick and Alexander Moewes



6205

Poly(acrylic acid) locally enriched in slurry enhances the electrochemical performance of the SiO_x lithium-ion battery anode

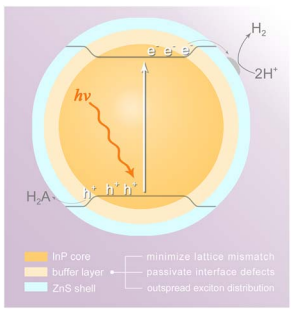
Ming Yang, Peng Chen, Jiapei Li, Ruoxuan Qi, Yudai Huang, Peter Müller-Buschbaum, Ya-Jun Cheng,* Kunkun Guo* and Yonggao Xia*



6217

Interface engineering of InP/ZnS core/shell quantum dots by the buffer monolayer for exceptional photocatalytic H_2 evolution

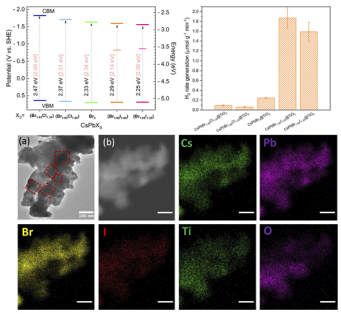
Rong-Jin Huang, Zhi-Kai Qin, Li-Lei Shen, Guangqiang Lv, Furong Tao, Jingui Wang and Yu-Ji Gao*



Open Access Article. Published on 21 March 2023. Downloaded on 11/17/2025 5:08:22 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

PAPERS

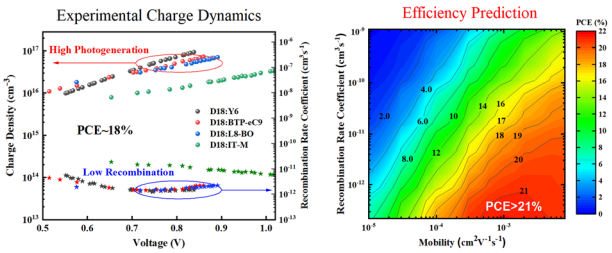
6226



Adjusting the band gap of $CsPbBr_{3-y}X_y$ (X = Cl, I) for optimal interfacial charge transfer and enhanced photocatalytic hydrogen generation

Marija Knezevic, Vien-Duong Quach, Isabelle Lampre, Marie Erard, Pascal Pernot, David Berardan, Christophe Colbeau-Justin and Mohamed Nawfal Ghazzal*

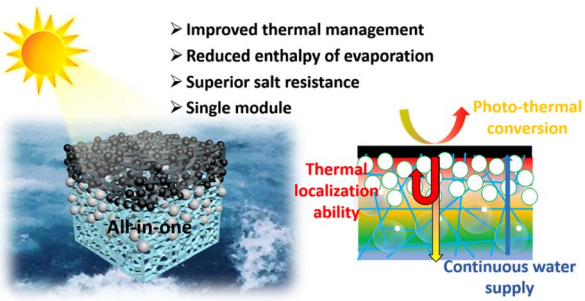
6237



High photogeneration and low recombination rate leading to high-performance non-fullerene organic solar cells

Yanxian Ma, Quanbin Liang,* Hongbin Wu* and Yong Cao

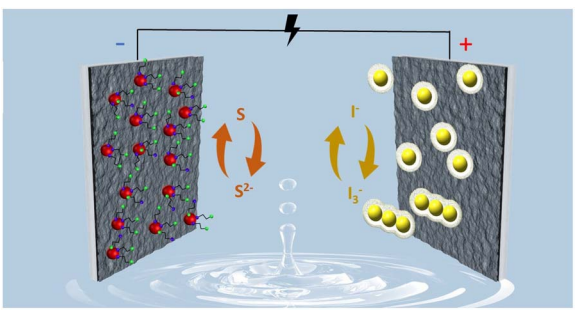
6248



An integrated cellulose aerogel evaporator with improved thermal management and reduced enthalpy of evaporation using a hierarchical coordinated control strategy

Jiaming Sun, Rui Teng, Jia Tan, Mingcong Xu, Chunhui Ma, Wei Li* and Shouxin Liu*

6258



A double-redox aqueous capacitor with high energy output

Adam Slesinski,* Sylwia Sroka, Sergio Aina, Justyna Piwek, Krzysztof Fic, M. Pilar Lobera, Maria Bernechea and Elzbieta Frackowiak*

This journal is © The Royal Society of Chemistry 2023

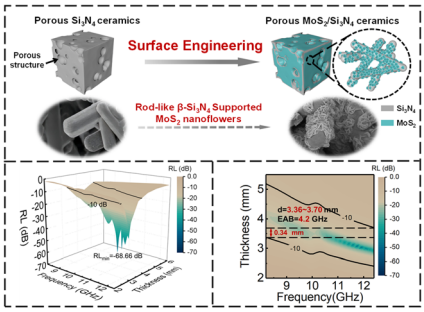
Open Access Article. Published on 21 March 2023. Downloaded on 11/17/2025 5:08:22 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

PAPERS

6274

Surface engineering of nanoflower-like MoS_2 decorated porous Si_3N_4 ceramics for electromagnetic wave absorption

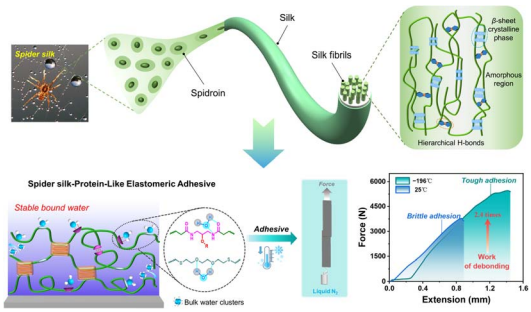
Jialin Bai, Shijie Huang, Xiumin Yao,* Xuejian Liu* and Zhengren Huang*



6286

Natural-silk-inspired design provides ultra-tough biobased structural adhesives with supercold tolerance

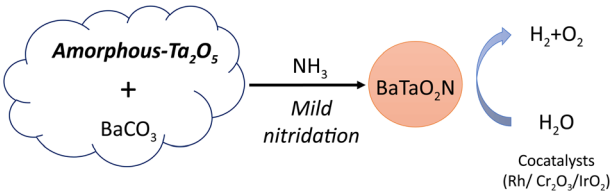
Xiankun Wu, Haonan Li, Peng Chen, Jiale Zhang, Ming Li, Shujun Zhao, Zhongkai Wang and Zhong Wang*



6299

Active $BaTaO_2N$ photocatalysts prepared from an amorphous Ta_2O_5 precursor for overall water splitting under visible light

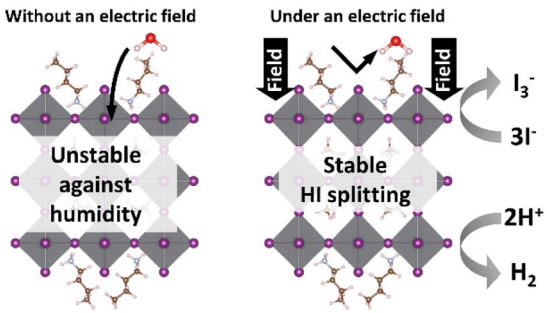
Shinji Nishimae, Junie Jhon M. Vequizo, Yasunobu Inoue, Akira Yamakata, Mamiko Nakabayashi, Tomohiro Higashi and Kazunari Domen*



6311

Enhanced stability of two-dimensional halide perovskites under an electric field for photocatalytic HI splitting

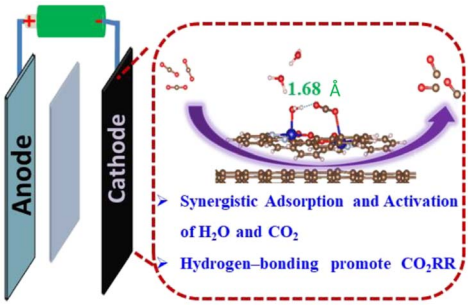
Seulyoung Park, Sehoon Oh and Jaichan Lee*



Open Access Article. Published on 21 March 2023. Downloaded on 11/17/2025 5:08:22 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

PAPERS

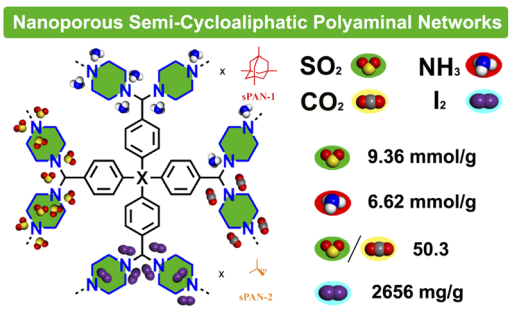
6321



Diatomic molecule catalysts toward synergistic electrocatalytic carbon dioxide reduction

Liming Hong, Xian Liu, Baozhu Chi, Guomin Xia and Hongming Wang*

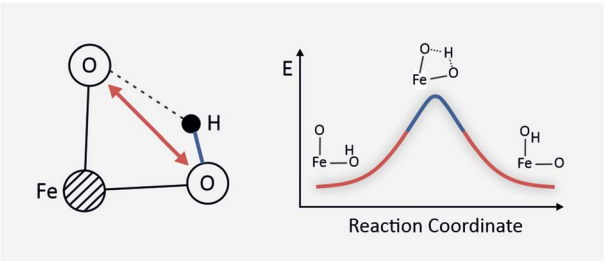
6329



Nanoporous semi-cycloaliphatic polyaminal networks for capture of SO_2, NH_3, and I_2

Jun Yan,* Sihan Tong, Haiyu Sun and Shengwei Guo

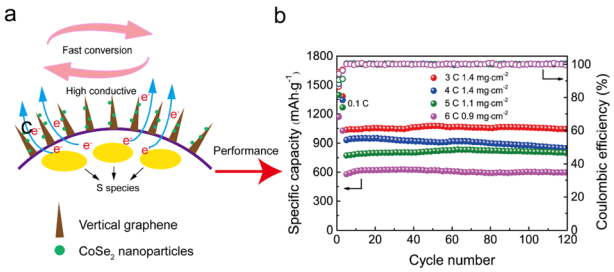
6336



Proton migration barriers in $BaFeO_{3-\delta}$ – insights from DFT calculations

M. F. Hoedl, A. Chesnokov, D. Gryaznov,* R. Merkle,* E. A. Kotomin and J. Maier

6349



$CoSe_2$ anchored vertical graphene/macroporous carbon nanofibers used as multifunctional interlayers for high-performance lithium–sulfur batteries

Yangcheng Mo, Kaochun Yang, Junsheng Lin, Mengting Liu, Guanfei Ye and Jie Yu*

This journal is © The Royal Society of Chemistry 2023

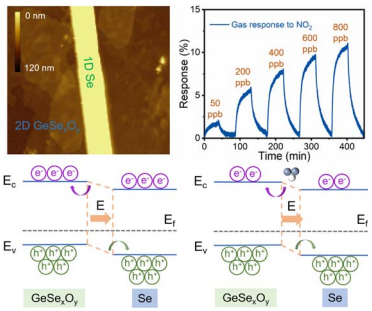
Open Access Article. Published on 21 March 2023. Downloaded on 11/17/2025 5:08:22 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

PAPERS

6361

Single-step growth of p-type 1D Se/2D $GeSe_xO_y$ heterostructures for optoelectronic NO_2 gas sensing at room temperature

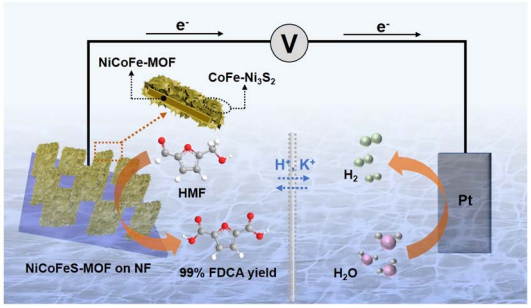
Tao Tang, Zhong Li,* Yin Fen Cheng, Kai Xu, Hua Guang Xie, Xuan Xing Wang, Xin Yi Hu, Hao Yu, Bao Yue Zhang, Xue Wei Tao, Chu Manh Hung, Nguyen Duc Hoa, Guan Yu Chen, Yong Xiang Li and Jian Zhen Ou*



6375

Metal sulfide enhanced metal–organic framework nanoarrays for electrocatalytic oxidation of 5-hydroxymethylfurfural to 2,5-furandicarboxylic acid

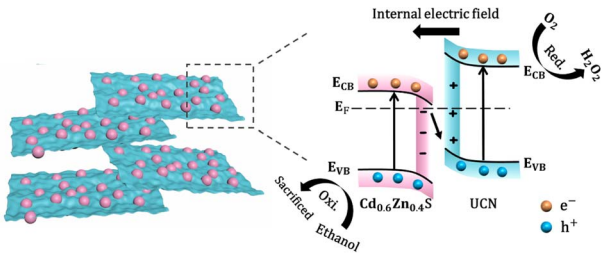
Yixuan Feng, Kun Yang, Richard L. Smith, Jr and Xinhua Qi*



6384

Point-to-face *Z*-scheme junction $Cd_{0.6}Zn_{0.4}S$/g-C_3N_4 with a robust internal electric field for high-efficiency H_2O_2 production

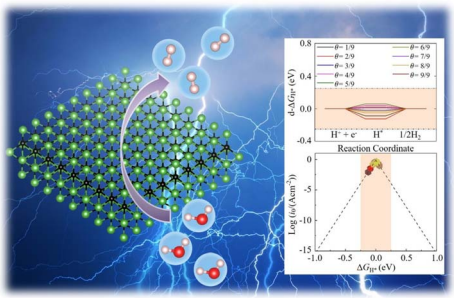
Wenying Yu, Zijian Zhu, Cheng Hu, Sen Lin, Yinghui Wang, Chunyang Wang, Na Tian,* Yihe Zhang and Hongwei Huang*



6394

A metallic La_3C_2 monolayer with remarkable activity for the hydrogen evolution reaction: a first-principles study

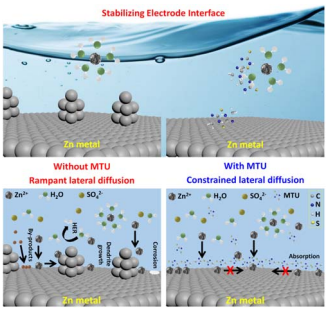
Huan Lou and Guochun Yang*



Open Access Article. Published on 21 March 2023. Downloaded on 11/17/2025 5:08:22 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

PAPERS

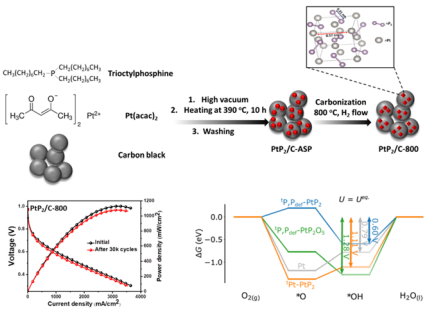
6403



Simultaneous tailoring of hydrogen evolution and dendrite growth *via* a fertilizer-derived additive for the stabilization of the zinc anode interface

Mahammad Rafi Shaik, Syryll Maynard Olidan, Jihoon Kim,* Kuk Young Cho* and Sukeun Yoon*

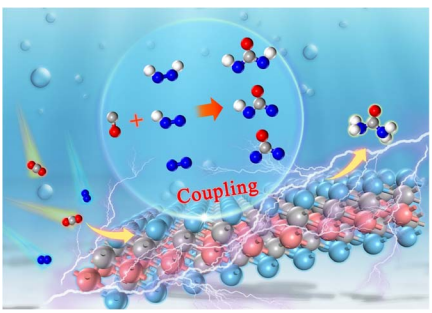
6413



Active and stable PtP_2-based electrocatalysts solve the phosphate poisoning issue of high temperature fuel cells

Jeong-Hoon Yu, Kiran Pal Singh, Se-Jun Kim, Tong-Hyun Kang, Kug-Seung Lee, Hyungjun Kim, Stefan Ringe* and Jong-Sung Yu*

6428



Unveiling the key intermediates in electrocatalytic synthesis of urea with CO_2 and N_2 coupling reactions on double transition-metal MXenes

Yufei Yang, Jiahe Peng, Zuhao Shi, Peng Zhang, Arramel Arramel and Neng Li*

6440

Universal assembly of ordered Ag nanowire micromesh conductors on arbitrary substrates by manipulating the contact angle

Bowen Sun, Jing Xu, Wang Hong, Zhiwei Fu, Shouguo Zheng, Zede Zhu, Rong Cai and Kai Qian*

This journal is © The Royal Society of Chemistry 2023

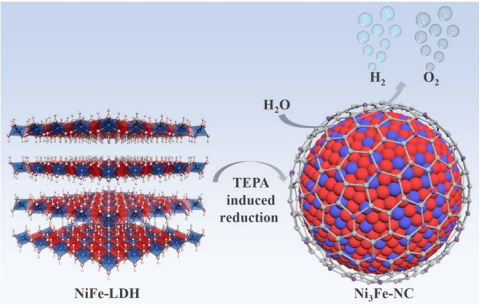
Open Access Article. Published on 21 March 2023. Downloaded on 11/17/2025 5:08:22 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

PAPERS

6452

Amine-assisted synthesis of the Ni_3Fe alloy encapsulated in nitrogen-doped carbon for high-performance water splitting

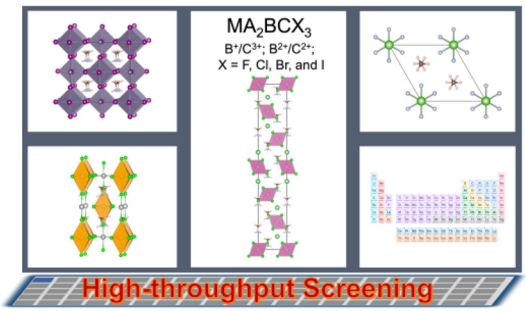
Mengzhi Guo, Hong Meng,* Junsu Jin and Jianguo Mi*



6465

High-throughput screening of hybrid quaternary halide perovskites for optoelectronics

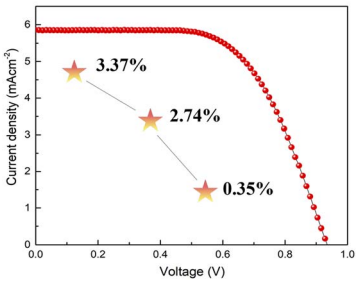
Kesong Yang,* Yuheng Li and Jingning Zhang



6474

DMAI-driven all-inorganic antimony-based perovskite-inspired solar cells with record open-circuit voltage

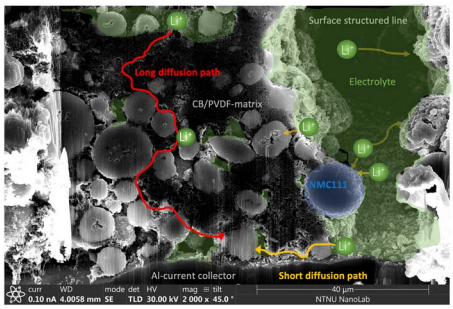
Yixin Guo, Fei Zhao,* Peizhi Yang,* Minjie Gao, Junhao Shen, Jiahua Tao, Jinchun Jiang and Junhao Chu



6483

Structured aqueous processed lignin-based NMC cathodes for energy-dense LIBs with improved rate capability

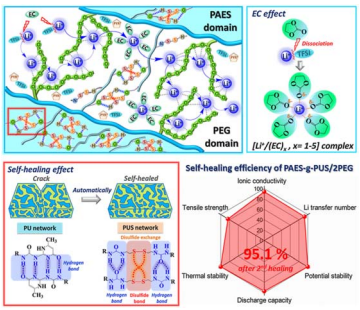
Silje Nornes Bryntesen, Per Håkon Finne, Ann Mari Svensson, Paul R. Shearing, Nikolai Tolstik, Irina T. Sorokina, Jakob Vinje, Jacob Joseph Lamb and Odne Stokke Burheim*



Open Access Article. Published on 21 March 2023. Downloaded on 11/17/2025 5:08:22 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

PAPERS

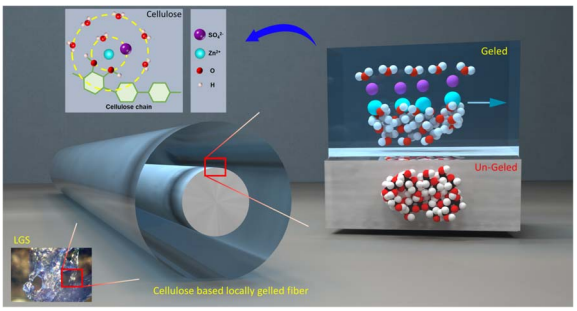
6503



Self-healable, super Li-ion conductive, and flexible quasi-solid electrolyte for long-term safe lithium sulfur batteries

Anh Le Mong and Dukjoon Kim*

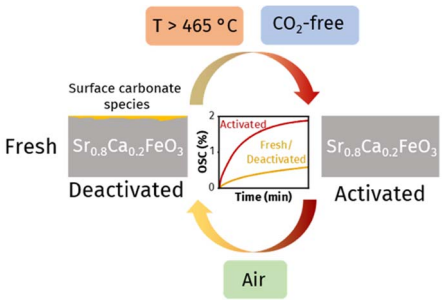
6522



Localized gelation cellulose separators enable dendrite-free anodes for future zinc-ion batteries

Chenpeng Xi, Yuanbin Xiao, Chengkai Yang,* Mengchao Li, Long Li, Yu Chao, Lingyun Li,* Chunnian He and Yan Yu*

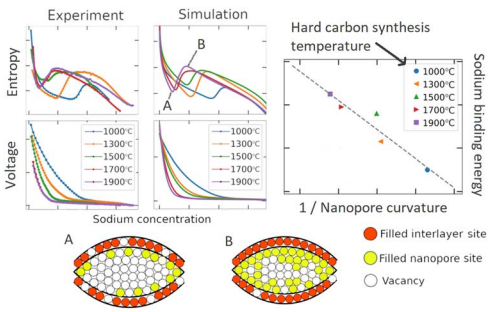
6530



Activation in the rate of oxygen release of $Sr_{0.8}Ca_{0.2}FeO_{3-\delta}$ through removal of secondary surface species with thermal treatment in a CO_2-free atmosphere

Giancarlo Luongo, Alexander H. Bork, Paula M. Abdala, Yi-Hsuan Wu, Evgenia Kountoupi, Felix Donat* and Christoph R. Müller*

6543



Sodiation energetics in pore size controlled hard carbons determined *via* entropy profiling

Michael P. Mercer,* Mangayarkarasi Nagarathinam, E. Maximiliano Gavilán-Arriazu, Anshika Binjrajka, Swoyam Panda, Heather Au, Maria Crespo-Ribadeneyra, Maria-Magdalena Titirici, Ezequiel P. M. Leiva and Harry E. Hoster

This journal is © The Royal Society of Chemistry 2023

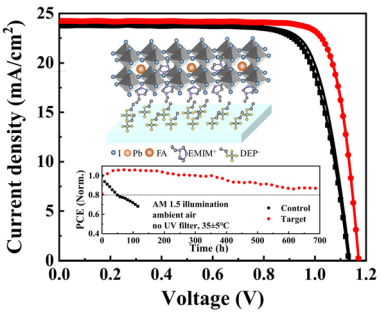
Open Access Article. Published on 21 March 2023. Downloaded on 11/17/2025 5:08:22 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

PAPERS

6556

Interfacial defect passivation by using diethyl phosphate salts for high-efficiency and stable perovskite solar cells

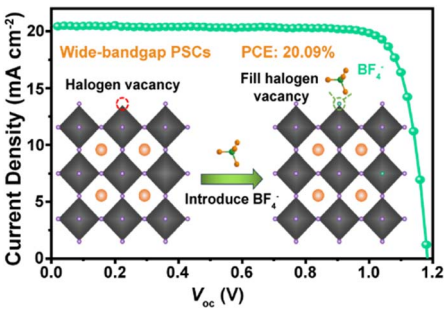
Xuan Sha, Jiang Sheng,* Weichuang Yang, Jingsong Sun, Chunhui Shou, Luyan Zhang, Ningjun Zhang, Zhiqin Ying, Xi Yang, Hongbin Zhao* and Jichun Ye*



6565

Fluoride-assisted crystallization regulation enables efficient and stable wide-bandgap perovskite photovoltaic

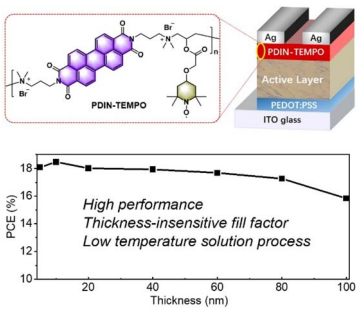
Chao Su, Rui Wang, Junlei Tao, Jinliang Shen, Di Wang, Lixin Wang, Guangsheng Fu, Shaopeng Yang,* Mingjian Yuan and Tingwei He*



6574

Stable radical based conjugated electrolytes as a cathode interlayer for organic solar cells with thickness-insensitive fill factors

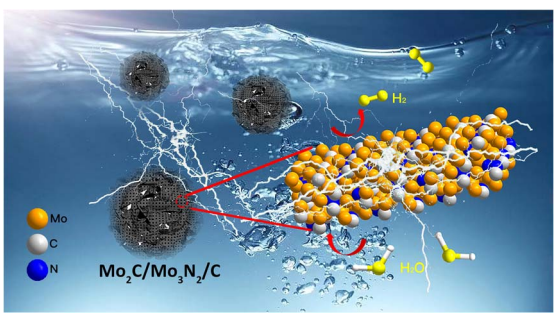
Jie Fang, Ziwei Zhang, Zhou Zhang, Yingzi Han, Dongdong Xia, Chaowei Zhao,* Yuefeng Zhang, Lingling Wang, Chengyi Xiao, Shengyong You, Yonggang Wu and Weiwei Li*



6581

Dual-phased $Mo_2C/Mo_3N_2/C$ nanosheets for efficient electrocatalytic hydrogen evolution

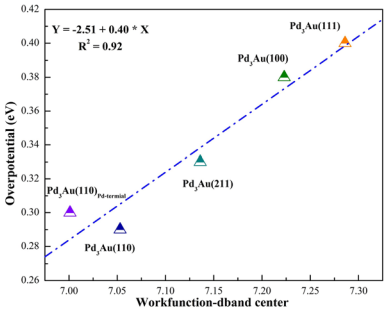
Guangyan Tian, Bingxue Yao, Gaofeng Han,* Yan Li, Kefeng Zhang and Junping Meng*



Open Access Article. Published on 21 March 2023. Downloaded on 11/17/2025 5:08:22 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

PAPERS

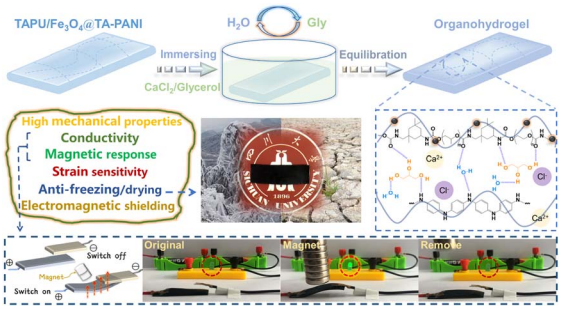
6591



Theoretical study on the reduction mechanism of CO_2 to HCOOH on Pd_3Au: an explicit solvent model is essential

Ming Zheng, Xin Zhou,* Yixin Wang, Gang Chen and Mingxia Li*

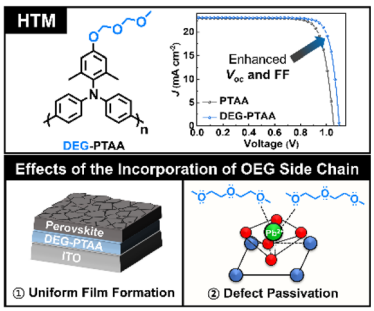
6603



A stretchable, environmentally stable, and mechanically robust nanocomposite polyurethane organohydrogel with anti-freezing, anti-dehydration, and electromagnetic shielding properties for strain sensors and magnetic actuators

Yang Liu, Zetian Zhang, Xiaohan Yang, Fufen Li, Ze Liang, Yong Yong, Songbo Dai and Zhengjun Li*

6615



Oligo(ethylene glycol)-incorporated hole transporting polymers for efficient and stable inverted perovskite solar cells

Chulhee Lim, Youngwoong Kim, Seungjin Lee, Helen Hejin Park, Nam Joong Jeon* and Bumjoon J. Kim*

CORRECTION

6625

Correction: Hierarchically porous Ni foam-supported Co and Sn doped Ni_3S_2 nanosheets for oxygen evolution reaction electrocatalysts

Won Young An, Hyungwoo Lee, Sung Ryul Choi, Sungyong Choi, Hyun-Seok Cho, Minseok Choi* and Jun-Young Park*

This journal is © The Royal Society of Chemistry 2023