

ChemComm

Chemical Communications

rsc.li/chemcomm

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.

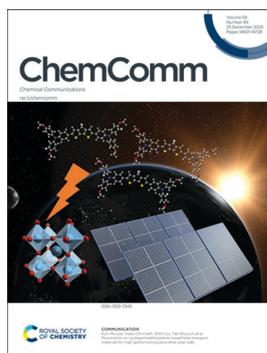
IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS 59(99) 14601-14728 (2023)



Cover

See Katarzyna Rybicka-Jasińska, Dorota Gryko *et al.*, pp. 14649–14652. Image reproduced by permission of Klaudia Łuczak from *Chem. Commun.*, 2023, 59, 14649.



Inside cover

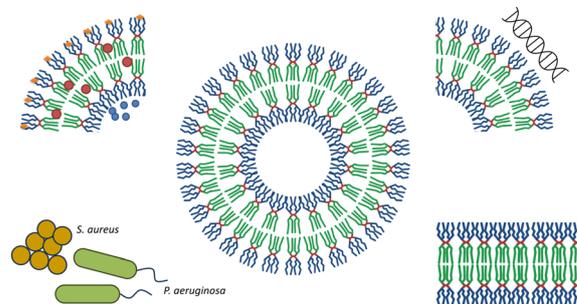
See Kun-Mu Lee, Hsiao-Chi Hsieh, Shih-I Lu, Yan-Duo Lin *et al.*, pp. 14653–14656. Image reproduced by permission of Yan-Duo Lin from *Chem. Commun.*, 2023, 59, 14653.

HIGHLIGHT

14611

Dendrimersomes: Biomedical applications

Barbara Klajnert-Maculewicz,* Anna Janaszewska and Agata Majecka

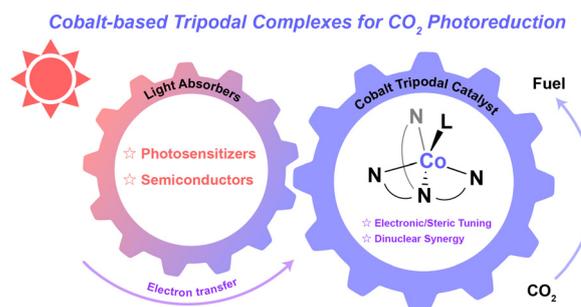


FEATURE ARTICLES

14626

Cobalt-based tripodal complexes as molecular catalysts for photocatalytic CO₂ reduction

Dong-Cheng Liu,* Zhi-Mei Luo, Bruno M. Aramburu-Trošelj, Fan Ma and Jia-Wei Wang*



Editorial Staff

Executive Editor

Richard Kelly

Deputy Editor

Harriet Riley

Editorial Production Manager

Helen Saxton

Development Editors

Danny Andrews, Ershad Abubacker

Senior Publishing Editor

Becky Webb

Publishing Editors

Kirstine Anderson, Matthew Bown, Laura Cooper, Hannah Fielding, Anoushka Handa, Claire Harding, Alan Holder, Charlie Palmer, Rosie Rothwell, Donna Smith, Laura Smith

Editorial Assistant

Jade Holliday

Publishing Assistant

Natalie Ford

Publisher

Jeanne Andres

For queries about submitted papers, please contact Helen Saxton, Editorial Production Manager in the first instance. E-mail chemcomm@rsc.org

For pre-submission queries please contact

Richard Kelly, Executive Editor.

Email chemcomm-rsc@rsc.org

Chemical Communications (print: ISSN 1359-7345; electronic: ISSN 1364-548X) is published 100 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: £3,553 / US\$6,258. 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

ChemComm

Chemical Communications

rsc.li/chemcomm

Editorial Board

Chair

Douglas Stephan, University of Toronto

Associate Editors

Lutz Ackermann, University of Göttingen

Davide Bonifazi, University of Vienna

Fengtao Fan, Chinese Academy of Sciences

Itaru Hamachi, Kyoto University

Michaele Hardie, University of Leeds

Kim Jelfs, Imperial College London

Chao-Jun Li, McGill University

David Lou, City University of Hong Kong

Connie Lu, University of Minnesota, US

Marinella Mazzanti, EPFL, Switzerland

Amy Prieto, Colorado State University

Yang Tian, East China Normal University

Sandeep Verma, Indian Institute of

Technology Kanpur

Advisory Board

Brendan Abrahams, University of Melbourne

Polly Arnold, University of Edinburgh

Louise Berben, University of California, Davis

Akkattu T. Biju, Indian Institute of Science, Bangalore

Penny Brothers, Australian National University

Wesley Browne, University of Groningen

Raffaella Buonsanti, EPFL

Hong Chen, Soochow University

Xiao-Ming Chen, Sun Yat-Sen University

Arindam Chowdhury, Indian Institute of

Technology Bombay

Derrick Clive, University of Alberta

Seth Cohen, University of California, San Diego

Marcetta Darensbourg, Texas A&M University

Jyotirmayee Dash, Indian Association for the

Cultivation of Science

Gautam R. Desiraju, Indian Institute of

Science, Bangalore

Abhishek Dey, Indian Association for the

Cultivation of Science (IACS)

Josh Figueroa, University of California, San

Diego

Lutz Gade, University of Heidelberg

Sujit Ghosh, Indian Institute of Science

Education of Research, India

Robert Gilliard Jr., Massachusetts Institute of

Technology, USA

David Gonzalez-Rodriguez, Autonomous

University of Madrid

Rebecca Goss, University of

St Andrews

Mike Greaney, University of Manchester

Shaojun Guo, Peking University

Michaele Hardie, University of Leeds

Amanda Hargrove, Duke University

Hongyan He, Institute of Process Engineering,

Chinese Academy of Sciences, China

Eva Hevia, University of Bern, Switzerland

Feihe Huang, Zhejiang University

Todd Hudnall, Texas State University

Ilich A. Ibarra Alvarado, National University

of Mexico

Ajeet Kaushik, Florida Polytechnic University

Jong Seung Kim, Korea University

Shu Kobayashi, University of Tokyo

Mi Hee Lim, Ulsan National Institute of

Science and Technology (UNIST)

Teck-Peng Loh, Nanyang Technological

University

Tien-Yau Luh, National Taiwan University

Doug MacFarlane, Monash University

Hiromitsu Maeda, Ritsumeikan University

Silvia Marchesan, University of Trieste

Nazario Martin, Complutense University of

Madrid

Alexander Miller, University of North Carolina

at Chapel Hill

Wonwoo Nam, Ewha Womans University

Kenneth Ozoemena, University of the

Witwatersrand Johannesburg

Thalappil Pradeep, Indian Institute of

Technology Madras

S Ramakrishnan, Indian Institute of Science

Erwin Reisner, University of Cambridge

Robin Rogers, McGill University

Ilyong Ryu, Osaka Metropolitan University

& NYCU

Paolo Samori, University of Strasbourg

David Scanlon, University of Birmingham

Ellen Sletten, University of California, Los

Angeles

David Smith, University of York

Mizuki Tada, Nagoya University

Zhong-Qun Tian, Xiamen University, China

Tan Tianwei, Beijing University of Chemical

Technology

Tomas Torres, Autonomous University of

Madrid

Judy Wu, University of Houston

Yi Xie, University of Science and Technology

of China

Xianran Xing, University of Science and

Technology Beijing

Shuli You, Shanghai Institute of Organic

Chemistry, Chinese Academy of Sciences

Yan Yu, University of Science and Technology

of China

Fan Zhang, Fudan University

Qiang Zhang, Tsinghua University

Xi Zhang, Tsinghua University

Wenwan Zhong, University of California,

Riverside

Eli Zysman-Colman, University of St. Andrews

Information for Authors

Full details on how to submit material for publication in Chemical Communications 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/chemcomm

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.

© The paper used in this publication meets the requirements of ANSI/NISO Z39.48-1992 (Permanence of Paper).

Registered charity number: 207890

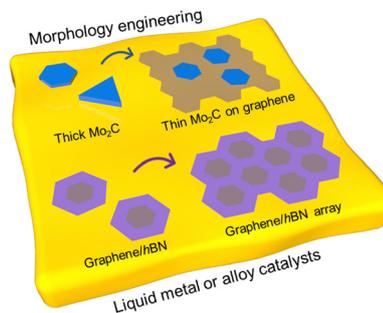


FEATURE ARTICLES

14636

Liquid metal catalyzed chemical vapor deposition towards morphology engineering of 2D epitaxial heterostructures

Lin Li, Qing Zhang,* Hang Li and Dechao Geng*

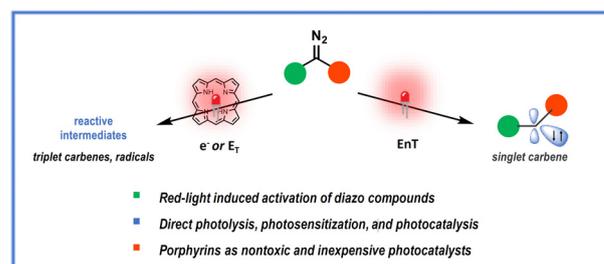


COMMUNICATIONS

14649

Unlocking the reactivity of diazo compounds in red light with the use of photochemical tools

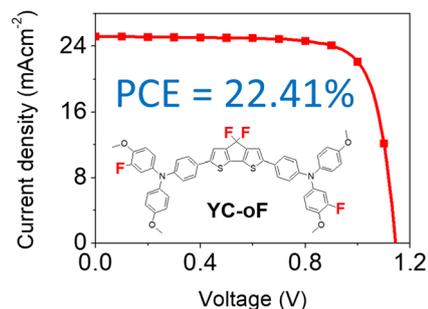
Katarzyna Orłowska, Klaudia Łuczak, Piotr Krajewski, João V. Santiago, Katarzyna Rybicka-Jasińska* and Dorota Gryko*



14653

Fluorination on cyclopentadithiophene-based hole-transport materials for high-performance perovskite solar cells

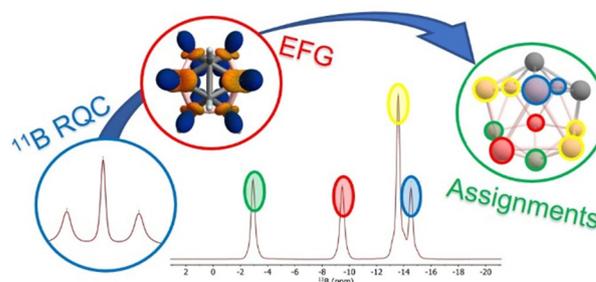
Gizachew Belay Adugna, Kun-Mu Lee,* Hsiao-Chi Hsieh,* Shih-I Lu,* Yu-Chien Hsieh, June Hung Yang, Wei-Hao Chiu, Kang-Ling Liao, Yu-Tai Tao and Yan-Duo Lin*



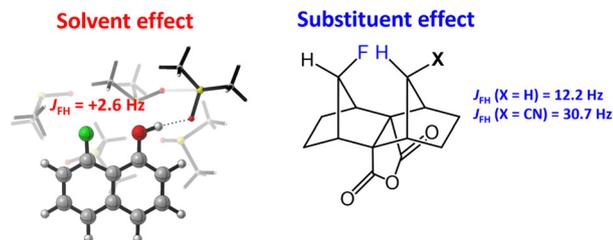
14657

Resonance and structural assignment in (car)borane clusters using ¹¹B residual quadrupolar couplings

Franziska Rüttger, Dietmar Stalke and Michael John*



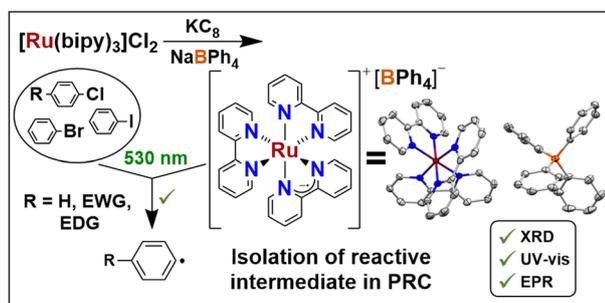
14661



The pitfalls of using J_{HF} spin–spin coupling constants to infer hydrogen bond formation in organofluorine compounds

Guilherme Cariello, Lucas A. Zeoly, Bruno A. Piscelli, Thomas Lectka* and Rodrigo A. Cormanich*

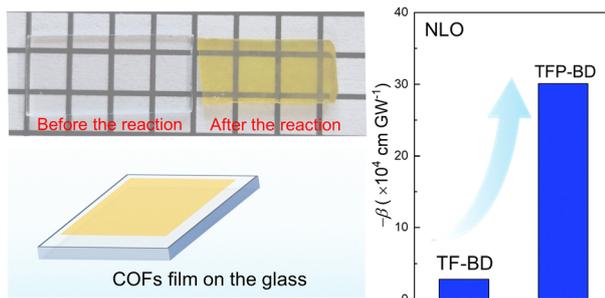
14665



Isolation of the elusive $[Ru(bipy)_3]^+$: a key intermediate in photoredox catalysis

Samuel J. Horsewill, Chengyang Cao, Noah Dabney, Eric S. Yang, Stephen Faulkner and Daniel J. Scott*

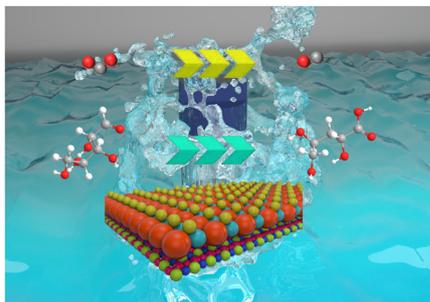
14669



Towards high-performance nonlinear optical materials through embedding a D–A system into β -ketoenamine-linked COFs

Mingyan Li, Jiahui Chu, Debo Ding, Tingting Li, Endian Su, Yinglin Song, Yun-Fang Yang, Yuanbin She* and Jianhong Jia*

14673



Entropy engineering of La-based perovskite for simultaneous photocatalytic CO_2 reduction and biomass oxidation

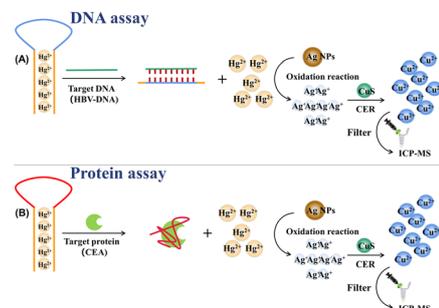
Mengchen Wang, Liming Li, Yong Li, Xuxia Shi, Hangxing Ren, Yuetao Sun, Kangning Liu, Wei Song, Huamin Li, Haibin Wang, Mei Han, Xi Wang, Christopher Dorma Momo Jr, Songhua Chen,* Lihua Liu* and Hongyan Liang*



14677

Cascade signal amplification using Hg²⁺-induced oxidation of silver nanoparticles and cation exchange reaction for ICP-MS bioassay

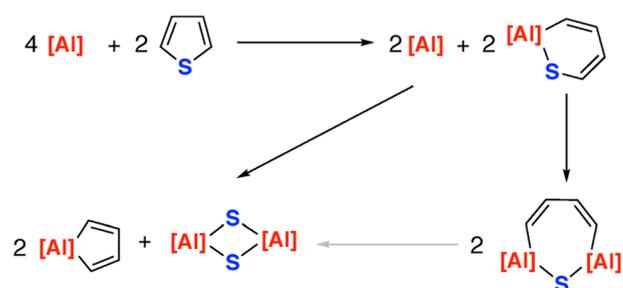
Yujing He, Jing Hu, Yunfei Tian* and Xiandeng Hou*



14681

Ring-expansion and desulfurisation of thiophenes with an aluminium(i) reagent

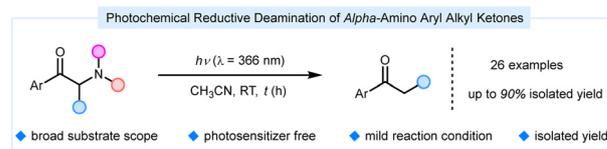
Jacob S. McMullen, Andrew J. P. White and Mark R. Crimmin*



14685

Photochemical reductive deamination of alpha-amino aryl alkyl ketones

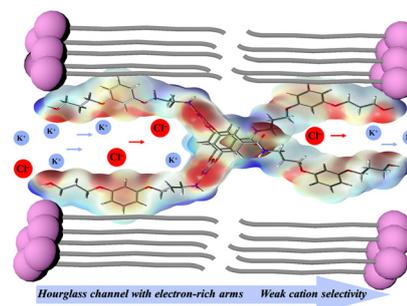
Ji-Yuan Liang, Yi-Wen Su and You-Quan Zou*



14689

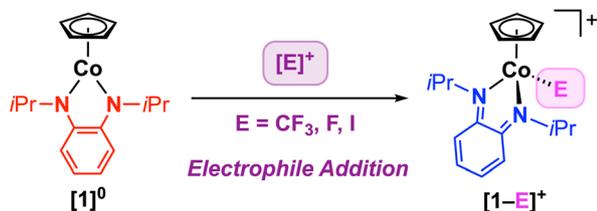
Reversing the ion transport selectivity through arm modification of an artificial molecular hourglass

Wen-Long Huang, Xu-Dong Wang, Yu-Fei Ao, Qi-Qiang Wang and De-Xian Wang*



14693

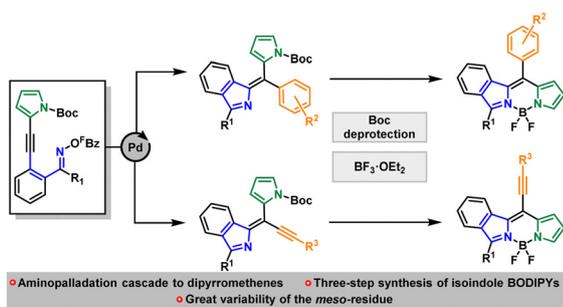
- Ligand-to-Substrate $2e^-$ Transfer
- Concomitant **Co-E** Bond Formation



Redox-active ligand promoted electrophile addition at cobalt

Minzhu Zou and Kate M. Waldie*

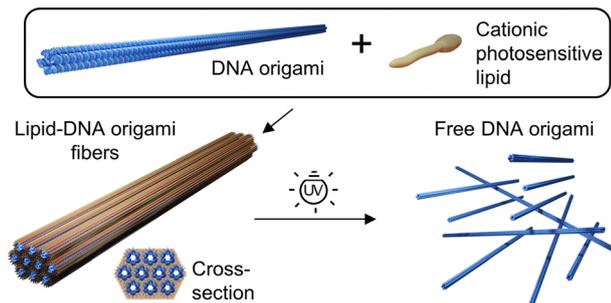
14697



Access to isoindole-derived BODIPYs by an aminopalladation cascade

Heinrich F. von Köller, Finn J. Geffers, Pedram Kalvani, Adrian Foraita, Patrick-Eric J. Loß, Burkhard Butschke, Peter G. Jones and Daniel B. Werz*

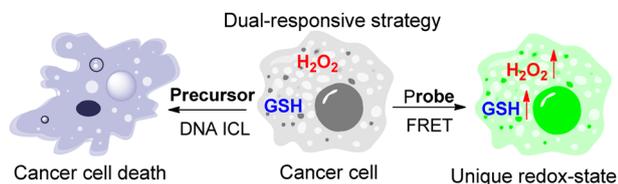
14701



Assembly and optically triggered disassembly of lipid-DNA origami fibers

Sofia Julin, Nadine Best, Eduardo Anaya-Plaza, Eeva Enlund, Veikko Linko and Mauri A. Kostainen*

14705



Dual-responsive probe and DNA interstrand crosslink precursor target the unique redox status of cancer cells

Dehao Yu, Luo Wang, Jingao Li, Xuanwei Zeng, Yuanyuan Jia, Junyu Tian, Anahit Campbell, Huabing Sun* and Heli Fan*

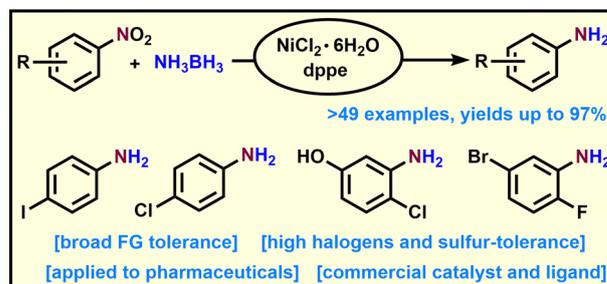


COMMUNICATIONS

14709

Homogenous nickel-catalyzed chemoselective transfer hydrogenation of functionalized nitroarenes with ammonia–borane

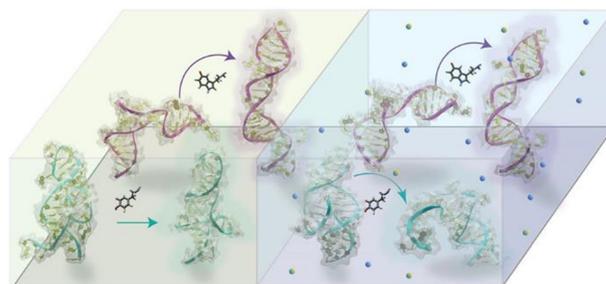
Chitrarekha Dewangan, Sandeep Kumawat, Tarun Bhatt and Kishore Natte*



14713

Theoretical analysis of divalent cation effects on aptamer recognition of neurotransmitter targets

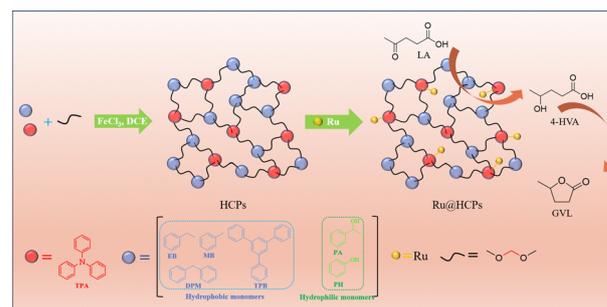
Ali Douaki, Annina Stuber, Julian Hengsteler, Dmitry Momotenko, David M. Rogers, Walter Rocchia, Jonathan D. Hirst, Nako Nakatsuka* and Denis Garoli*



14717

Hydrogenation of levulinic acid to γ -valerolactone over hydrophobic Ru@HCP catalysts

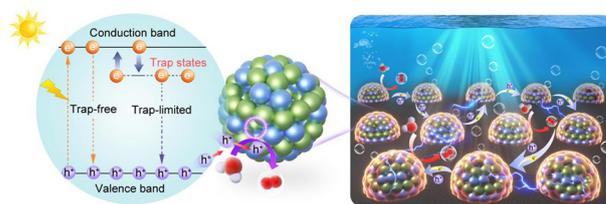
Xinbin Gong, Xiao Feng, Jieqi Cao, Yinwei Wang, Xiaoxia Zheng, Weiqiang Yu, Xinhong Wang* and Song Shi*



14721

Suppressed charge recombination via defect engineering of confined semiconducting quantum dots for photoelectrocatalysis

Ce Hu, Daojian Ye, Jie Ren, Congcong Wu, Chenya Zhao, Weiyang Xu, Hang Zhou, Ting Yu, Xingfang Luo* and Cailei Yuan*



CORRECTION

14725

Correction: Interface-mediated protein aggregation

Fei Tao, Qian Han and Peng Yang*

