

Environmental Science: Advances

rsc.li/esadvances

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 2754-7000 CODEN ESANEB 2(5) 677–830 (2023)



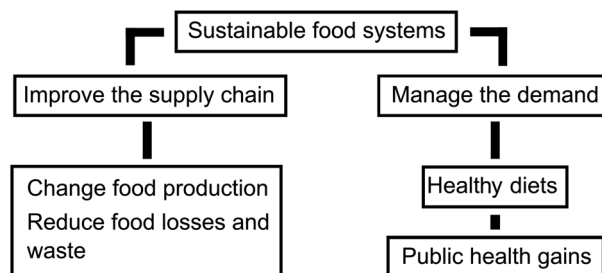
Cover
Cover Image credit: © Surasak Suwanmake/Getty Images.

PERSPECTIVE

684

Healthy diets for sustainable food systems: a narrative review

Ezequiel M. Arrieta* and Sebastián Aguiar

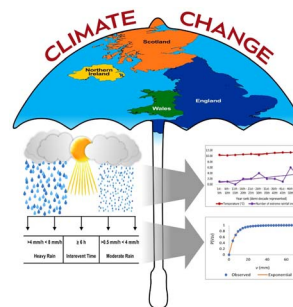


PAPERS

695

Extensive rainfall data analysis: event separation from continuous record, fitting of theoretical distributions, and event-based trend detection

Aniekan E. Essien,* Yiping Guo and Sarah E. Dickson-Anderson



Editorial Staff**Executive Editor**

Emma Eley

Deputy Editor

Jon Ferrier

Editorial Production Manager

Sarah Whitbread

Assistant Editors

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

Editorial Assistant

Alex Holiday

Publishing Assistant

Lee Colwill

Publisher

Neil Hammond

For queries about submitted papers please contact Sarah Whitbread, Editorial Production Manager in the first instance. E-mail: esadvances@rsc.org

For pre-submission queries please contact

Emma Eley, Executive Editor.

E-mail: esadvances-rsc@rsc.org

Environmental Science: Advances (electronic: ISSN 2754-7000) is published 6 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, UK CB4 0WF.

Environmental Science: Advances is a Gold Open Access journal and all articles are free to read.

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

Environmental Science: Advances

rsc.li/esadvances

Our existing environmental science journals all have chemistry at their core. *Environmental Science: Advances* will span not only chemistry, but research from any discipline related to the environmental sciences.

We welcome research from any discipline that will contribute to the understanding of the environment, and to the advancement of several UN Sustainable Development Goals - original thinking to take on the world's biggest challenges.

Editorial Board**Editor-in-Chief**

Zongwei Cai, Hong Kong Baptist University, Hong Kong

Kevin Jones, Lancaster University, UK

Célia M. Manaia, Universidade Católica Portuguesa, Portugal

Associate Editors

Ru-Jin Huang, Institute of Earth Environment, Chinese Academy of Sciences, China

Liwu Zhang, Fudan University, China

Pernilla Bohlin-Nizzetto, Norwegian Institute for Air Research, Norway

David Weissbrodt, Norwegian University of Science and Technology, Norway

Members

Silvia Lacorte seult, IDAEA-CSIC, Spain

Advisory Board

Damià Barceló, Institute of Environmental Assessment and Water Research, Spain

Zhi-Feng Chen, Guangdong University of Technology, China

Jiping Chen, Dalian Institute of Chemical Physics, China

Chun Cheng Chen, Institute of Chemistry, Chinese Academy of Sciences, Beijing, China

Maofa Ge, Institute of Chemistry, Chinese Academy of Sciences, Beijing, China

Tom Harner, Environment and Climate Change Canada, Canada

Rong Ji, Nanjing University, China

Ramanan Laxminarayan, One Health Trust, Washington D.C., United States

Yongjie Li, University of Macau, Taipa, Macao

Hemi Luan, Southern University of Science and Technology, China

Jurgita Ovadnevaite, National University of Ireland Galway, Ireland

Andreas Schäffer, Institute for Environmental Research, RWTH Aachen University, Germany

Philippe Schmitt-Kopplin, Helmholtz Zentrum München, Germany

Dörthe Tetzlaff, Humboldt University of Berlin and IGB Leibniz Institute of Freshwater Ecology and Inland Fisheries

Mark van Loosdrecht, Technische Universiteit Delft, Netherlands

Meizhen Wang, Zhejiang Gongshang University, China

Zhe Wang, Hong Kong University of Science and Technology, Hong Kong, China

Dengsong Zhang, Shanghai University, China

Xuan Zhang, University of California, Merced, USA

Information for Authors

Full details on how to submit material for publication in Environmental Science: 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/esadvances

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.

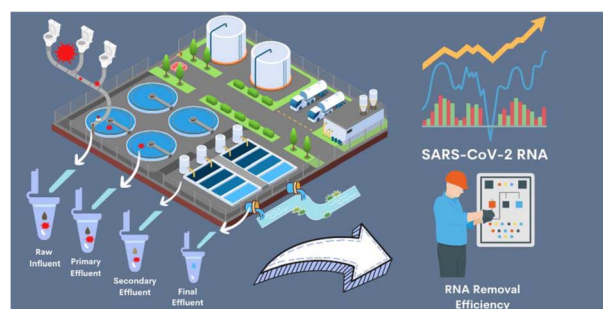
Registered charity number: 207890



709

Wastewater-based surveillance of COVID-19 and removal of SARS-CoV-2 RNA across a major wastewater treatment plant in San Antonio, Texas

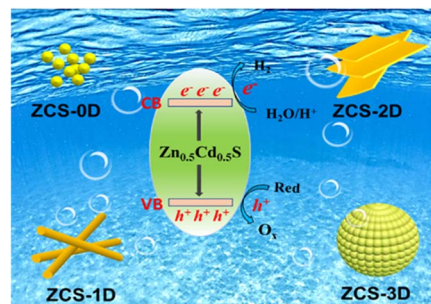
Haya Al-Duroobi, Kiran Kumar Vadde, Duc C. Phan, Sina V. Moghadam, Arash Jafarzadeh, Akanksha Matta, Marcio Giacomoni and Vikram Kapoor*



721

Study of the different morphologies of $Zn_{0.5}Cd_{0.5}S$ for photocatalytic H_2 production

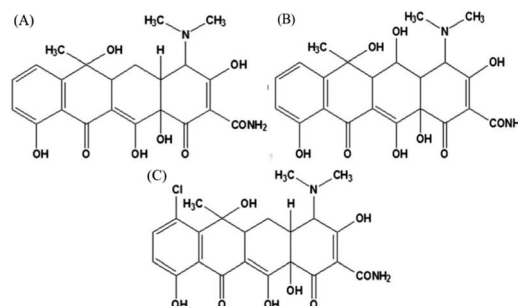
Wei Ren, Ruiru Si, Jiahui Wang, Yang Yang, Xiuzhen Zheng* and Shifu Chen*



731

Magnetic Fe–N–C nanoparticles as a dual nanozyme for label-free colorimetric detection of antibiotics

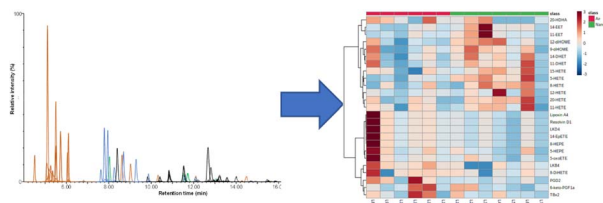
Wen Wen, Yina Liu, Zhongping Li,* Guangming Wen,* Hung-Wing Li and Li Li*



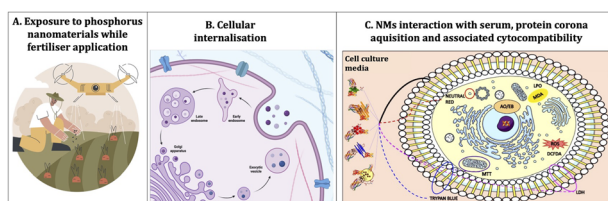
740

Distinct profiles of oxylipid mediators in liver, lung, and placenta after maternal nano-TiO₂ nanoparticle inhalation exposure

Todd R. Harris,* Julie A. Griffith, Colleen E. C. Clarke, Krista L. Garner, Elizabeth C. Bowdridge, Evan DeVallance, Kevin J. Engles, Thomas P. Batchelor, William T. Goldsmith, Kim Wix, Timothy R. Nurkiewicz and Amy A. Rand



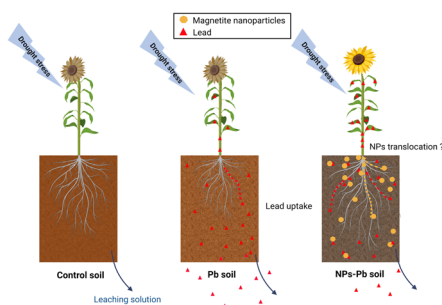
749



Multi-endpoint assessments for *in vitro* nano-bio interactions and uptake of biogenic phosphorus nanomaterials using HEK293 cells

Ayushi Priyam, Luis O. B. Afonso, Aaron G. Schultz, Amit Kumar Dinda and Pushplata Prasad Singh*

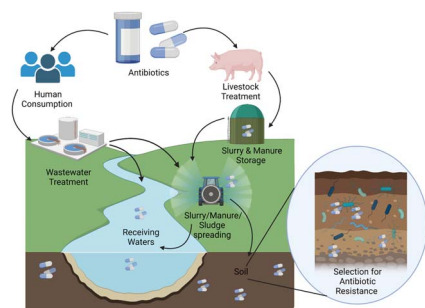
767



Impact of iron oxide nanoparticles on a lead-polluted water-soil-plant system under alternating periods of water stress

Léa Mounier, Mathieu Pédrot, Martine Bouhnik-Le-Coz and Francisco Cabello-Hurtado*

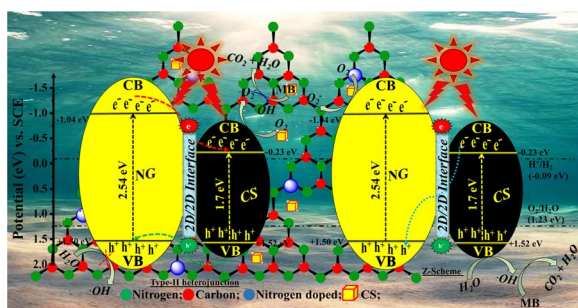
780



A framework to assess the terrestrial risk of antibiotic resistance from antibiotics in slurry or manure amended soils

Felicity C. T. Elder,* Alex J. O'Neill, Lisa M. Collins and Laura J. Carter

795



2D/2D nitrogen-doped graphitic carbon nitride/cobalt sulfide nanostructures for fast photodegradation of methylene blue dye and real industrial sewage effluents

Sai Bhargava Vuggili, Umesh Kumar Gaur, Tushar Tyagi and Manu Sharma*

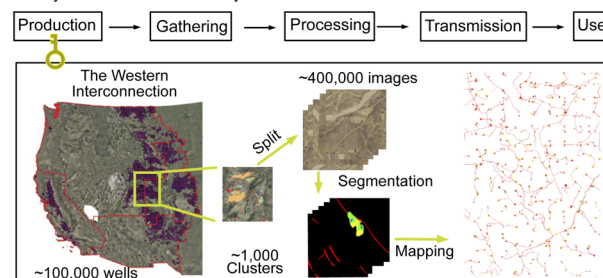


815

The life cycle land use of natural gas-fired electricity in the US Western interconnection

Tao Dai, Jeya Maria Jose Valanarasu, Vishal M. Patel and Sarah M. Jordan*

Life Cycle of Gas-Fired Electricity



827

Correction: The reuse of electronic components from waste printed circuit boards: a critical review

Wenting Zhao, Junqing Xu, Wenlei Fei, Ziang Liu, Wenzhi He and Guangming Li*

