

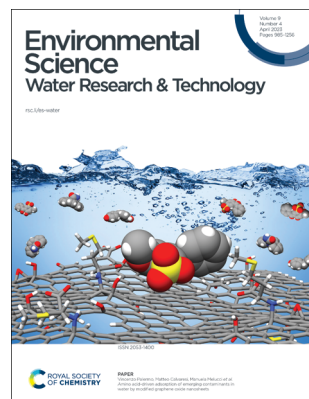
Environmental Science Water Research & Technology

rsc.li/es-water

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 2053-1400 CODEN ESWRAR 9(4) 985-1256 (2023)



Cover

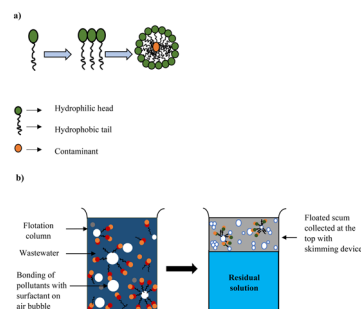
See Vincenzo Palermo, Matteo Calvaresi, Manuela Melucci *et al.*, pp. 1030–1040. Image reproduced by permission of Manuela Melucci *et al.* from *Environ. Sci.: Water Res. Technol.*, 2023, 9, 1030.

CRITICAL REVIEWS

994

Various surface-active agents used in flotation technology for the removal of noxious pollutants from wastewater: a critical review

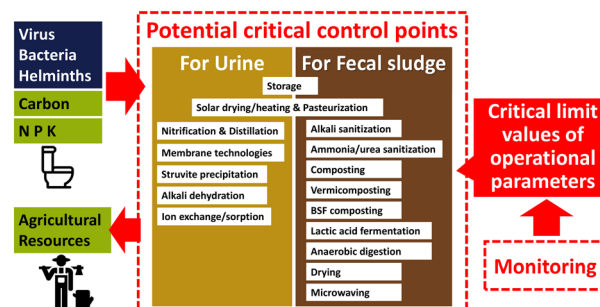
G. Pooja and P. Senthil Kumar*



1008

Resource recovery technologies as microbial risk barriers: towards safe use of excreta in agriculture based on hazard analysis and critical control point

Wakana Oishi,* Björn Vinnerås and Daisuke Sano



Editorial Staff

Executive Editor

Neil Scriven

Deputy Editor

Grace Thoburn

Development Editor

Nour Tanbouza

Editorial Production Manager

Claire Darby

Publishing Editors

Emma Carlisle, Hannah Hamilton, Irene Sanchez Molina Santos, Michael Spencelayh, Callum Woof, Lauren Yarrow-Wright

Editorial Assistant

Kate Bando

Publishing Assistant

Linda Warncke

Publisher

Sam Keltie

For queries about submitted papers please contact Claire Darby, Editorial Production Manager, in the first instance. E-mail: eswater@rsc.org

For pre-submission queries please contact Neil Scriven, Executive Editor. E-mail: eswater-rsc@rsc.org

Environmental Science: Water Research & Technology (electronic: ISSN 2053-1419) is published 12 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: £1881; US\$3103. Customers in Canada will be subject to a surcharge to cover GST. Customers in the EU subscribing to the electronic version 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

Environmental Science Water Research & Technology

rsc.li/es-water

Environmental Science: Water Research & Technology seeks to showcase high quality research about fundamental science, innovative technologies, and management practices that promote sustainable water.

Editorial Board

Editor-in-Chief

Paige Novak, University of Minnesota, USA

Associate Editors

Sebastià Puig Broch, Universitat de Girona, Spain

Wenhai Chu, Tongji University, China

Graham Gagnon, Dalhousie University, Canada

Stuart Khan, University of New South Wales, Australia

Linda Lawton, Robert Gordon University, UK

Lauren Stadler, Rice University, USA

Members

Takahiro Fujioka, Nagasaki University, Japan

Xia Huang, Tsinghua University, China

Karin Jönsson, Lund University, Sweden

Branko Kerkez, University of Michigan, USA

Jeonghwan Kim, Inha University, South Korea

Luca Vezzaro, Technical University of Denmark, Denmark

Eveline Volcke, Ghent University, Belgium

Advisory Board

Nicholas Ashbolt, University of Alberta, Canada

Federico Aulenta, National Research Council, Italy

Tom Bond, University of Surrey, UK

Joby Boxall, The University of Sheffield, UK

Kartik Chandran, Columbia University in the City of New York, USA

Amy Childress, University of Southern California, USA

David M. Cwierny, University of Iowa, USA

Dionysios Dionysiou, University of Cincinnati, USA

Joel Ducoste, North Carolina State University, USA

Jingyun Fang, Sun Yat-Sen University, China

Maria José Farré, Catalan Institute for Water Research, Spain

Yujie Feng, Harbin Institute of Technology, China

Kathrin Fenner, Swiss Federal Institute of Aquatic Science and Technology, Eawag, Switzerland

Ramesh Goel, University of Utah, USA

Ola Gomaa, National Center for Radiation Research and Technology, Egypt

Chris Gordon, University of Ghana, Ghana

April Gu, Cornell University, USA

Jochen Hack, Leibniz Universität Hannover, Germany

Zhen "Jason" He, Washington University in St. Louis, USA

Cynthia Joll, Curtin University, Australia

Tamar Kohn, École Polytechnique Fédérale de Lausanne, Switzerland

Tove Larsen, Swiss Federal Institute of Aquatic Science and Technology, Eawag, Switzerland

Peng Liang, Tsinghua University, China

Irene Lo, Hong Kong University of Science and Technology, Hong Kong, China

Julie Minton, The Water Research Foundation, USA

Vincenzo Naddeo, University of Salerno, Italy

Indumathi M Nambi, Indian Institute of Technology Madras, India

Long Nghiem, University of Technology

Sydney, Australia

Yong Sik Ok, Korea University, South Korea

Ligy Philip, IIT Madras, India

Thalappil Pradeep, Indian Institute of Technology Madras, India

Zhiyong "Jason" Ren, Princeton University, USA

Peter Robertson, Queen's University Belfast, UK

Michael Templeton, Imperial College London, UK

Kai Udert, Swiss Federal Institute of Aquatic Science and Technology, Switzerland

Subramanyam Vasudevan, CSIR-Central

Electrochemical Research Institute, Karaikudi, India

Luca Vezzaro, Technical University Denmark, Denmark

Information for Authors

Full details on how to submit material for publication in

Environmental Science: Water Research & Technology 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/es-water

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.

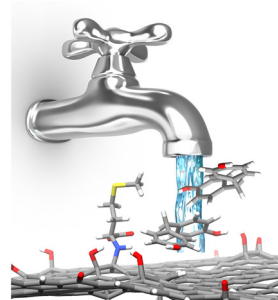
Registered charity number: 207890



1030

Amino acid-driven adsorption of emerging contaminants in water by modified graphene oxide nanosheets

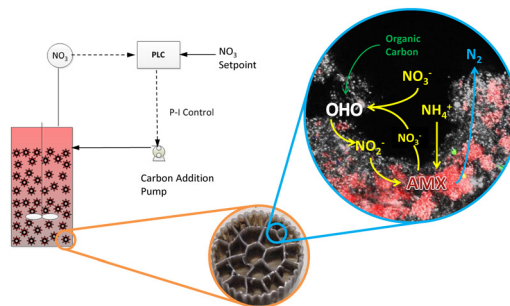
Sebastiano Mantovani, Tainah Dorina Marforio, Sara Khaliha, Angela Pintus, Alessandro Kovtun, Francesca Tunio, Laura Favaretto, Antonio Bianchi, Maria Luisa Navacchia, Vincenzo Palermo,* Matteo Calvaresi* and Manuela Melucci*



1041

Comparison of carbon sources in a partial denitrification/anammox MBBR using glycerol, acetate, and methanol

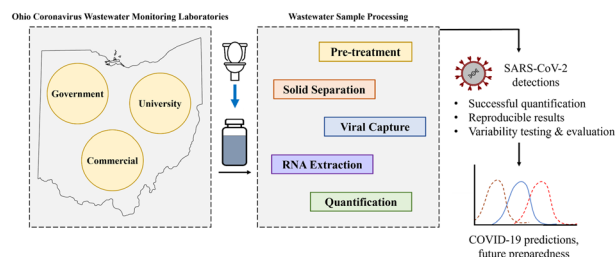
Stephanie Klaus,* Cody Campolong, Alex Rosenthal, Fabrizio Sabba, Matthew Baideme, George Wells, Haydee De Clippeleir, Kartik Chandran and Charles Bott



1053

Evaluation of intra- and inter-lab variability in quantifying SARS-CoV-2 in a state-wide wastewater monitoring network

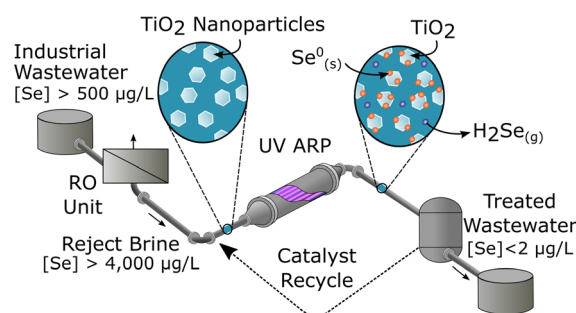
Angela Davis, Scott P. Keely, Nichole E. Brinkman, Zuzana Bohrer, Yuehan Ai, Xiaozhen Mou, Saurabh Chattopadhyay, Olivia Hershey, John Senko, Natalie Hull, Eva Lytmer, Anda Quintero and Jiyoung Lee*



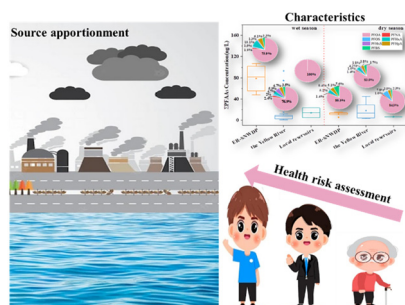
1069

Tunable production of elemental Se vs. H₂Se through photocatalytic reduction of selenate in synthetic mine impacted brine: engineering a recoverable Se product

Andrew B. Holmes, Aldrich Ngan, Kayleanna Giesinger and Frank Gu*



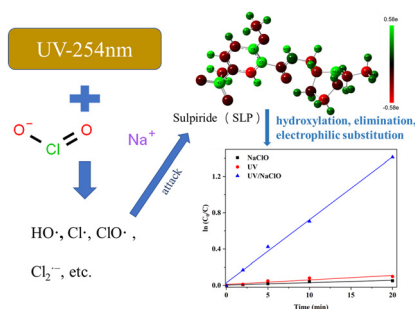
1080



Characteristics, source apportionment and health risk assessment of perfluoroalkyl acids in typical drinking water sources of eastern China

Hong Liu, Ruibao Jia,* Zhenqi Du, Xiaodong Xin, Mingquan Wang, Shaohua Sun, Weilin Guo, Xiang Li and Li Liu

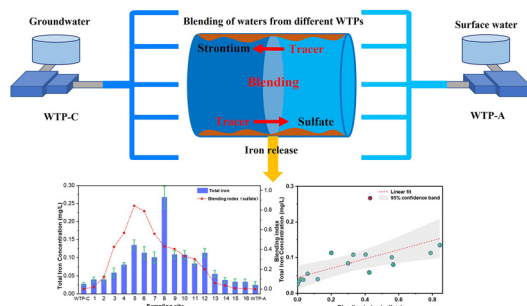
1090



Degradation of sulphide in water by the UV/chlorine process: kinetics, reaction mechanism, and transformation pathways

Heng Zhang, Miao Chen, Changsheng Guo, Jingpu Fan and Jian Xu*

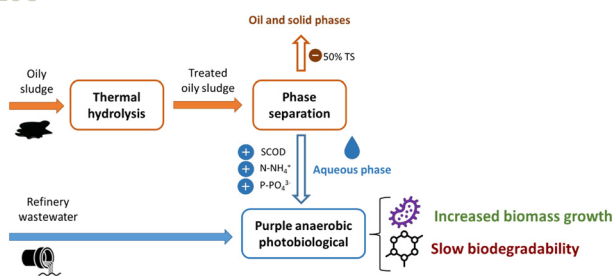
1099



Identifying water blending areas and associated iron release risk by analyzing sulfate and strontium concentration difference in a metropolitan drinking water distribution system

Linlin Pan, Guiwei Li,* Yitian He, Ruya Chen, Yao Zhang and Baoyou Shi*

1108



Thermal hydrolysis of solid fraction reduces waste disposal and provides a substrate for anaerobic photobiological treatment of refinery wastewater

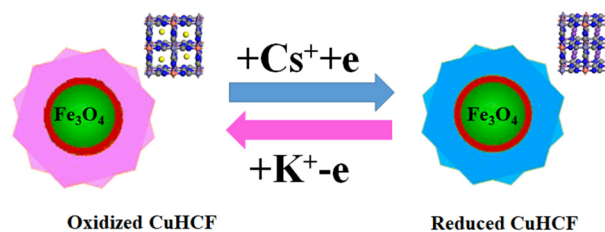
S. Jerez, J. San Martín, M. Ventura, M. I. Pariente, Y. Segura,* D. Puyol, R. Molina, J. A. Melero and F. Martínez



1115

Magnetic copper hexacyanoferrate core-shell nanoparticles for effective cesium removal from aqueous solutions

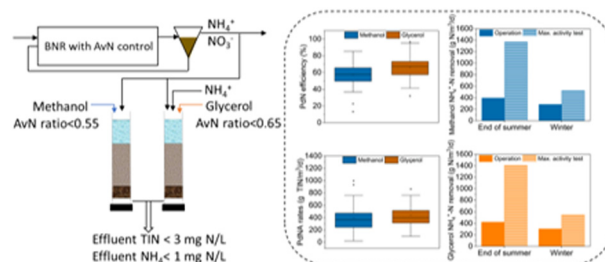
Yihui Wang, Fenghua Li,* Jiali Mao, Xiaomin Wang, Yong Shao and Junhua Yuan*



1124

Robustness of partial denitrification-anammox (PdNA) in filters with methanol and glycerol as carbon sources

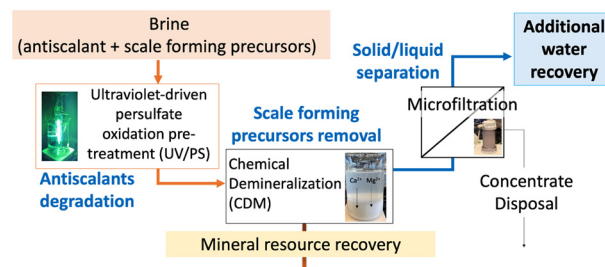
Rahil Fofana,* Michael Parsons, Megan Bachmann, Kimberly Jones, Jeseth Delgado Vela, Benay Akyon, Wenjun Liu, Stephanie Klaus, Christine deBarbadillo, Charles Bott and Haydee De Clippeleir



1137

Treatment of brackish water inland desalination brine via antiscalant removal using persulfate photolysis

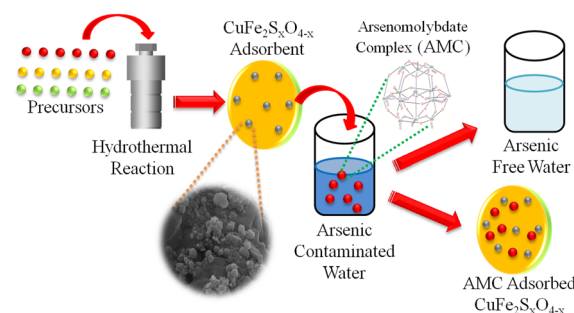
Soyoon Kum, Xinyu Tang and Haizhou Liu*



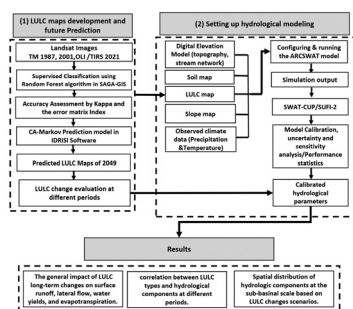
1147

Tunable sulphur doping in CuFe_2O_4 for the efficient removal of arsenic through arsenomolybdate complex adsorption: kinetics, isothermal and mechanistic studies

Ujala Quyyum, Khezina Rafiq,* Muhammad Zeeshan Abid, Farooq Ahmad, Abdul Rauf and Ejaz Hussain*



1161

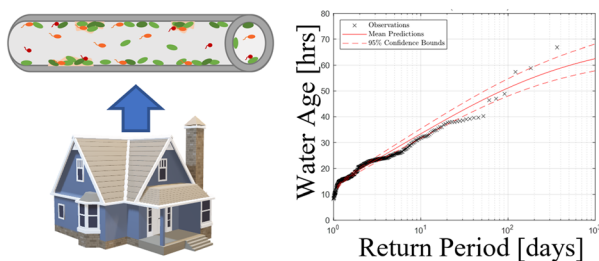


Spatial-temporal analysis of various land use classifications and their long-term alteration's impact on hydrological components: using remote sensing, SAGA-GIS, and ARCSWAT model

Farinaz Gholami, Zahra Sedighifar,* Parastoo Ghaforpur,* Yue Li* and Junlong Zhang

1182

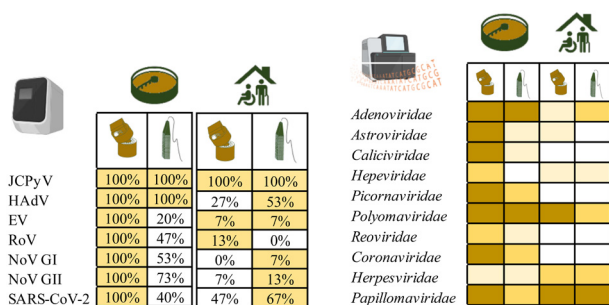
Water Quality ↓ as Water Age ↑



Characterizing stochastic water age in premise plumbing systems using conventional and advanced statistical tools

Emily Clements, Christopher Irwin, Jacob Koestner, Alexandros Taflanidis, Kyle Bibby and Robert Nerenberg*

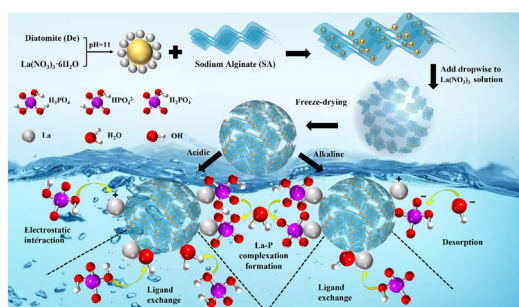
1195



Effectiveness of passive sampling for the detection and genetic characterization of human viruses in wastewater

Cristina Mejías-Molina, Anna Pico-Tomás, Andrea Beltran-Rubinat, Sandra Martínez-Puchol, Lluís Corominas, Marta Rusiñol* and Sílvia Bofill-Mas

1205



Highly efficient removal of phosphate by La-diatomite and sodium alginate composite hydrogel beads

Zuwei Wu, Yi Han, Feixiang Zan, Yuanyao Ye, Yongzheng Ren,* Ke Han, Dongqi Liu and Wei Jiang

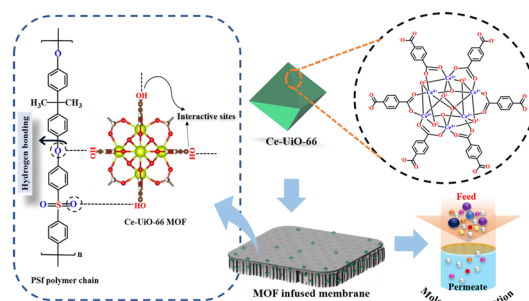


PAPERS

1216

Ce-MOF infused membranes with enhanced molecular sieving in the application of dye rejection

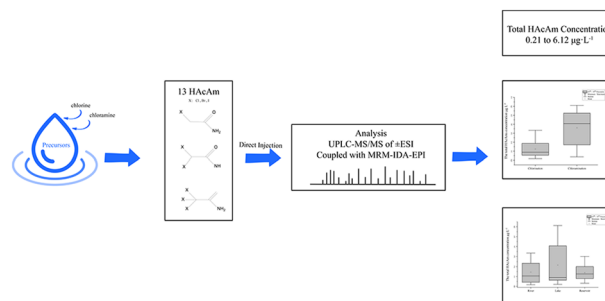
Usha Nellur, Nagaraj S. Naik, Richelle M. Rego, Madhuprasad Kigga, G. Arthanareeswaran and Mahesh Padaki*



1231

Analysis of 13 haloacetamide DBPs in drinking water using a highly sensitive LC-MS/MS method

Run Zhou, Zhifei Xu, Yukang Wu, Li Yang, Xiuzhu Li, Yuanhua Meng, Pengfei Zhu, Lingcan Kong and Xinliang Ding*



1238

The efficient treatment of pickling wastewater using a self-assembled *in situ* polymerized ceramic membrane with graphene/carbon nanotubes/polypyrrole

Xinling Wang, Chunhui Zhang,* Zong Liu, Bingxu Quan, Wenjing Lu, Xuezhi Li, Peidong Su,* Yuanhui Tang, Yuanqing Bu and Rong Zhou

