

# 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 3(5) 613–790 (2024)



**Cover**  
See Freya C. Alldred, Darren R. Gröcke *et al.*, pp. 676–685. Image reproduced by permission of National Museums Liverpool from *Environ. Sci.: Adv.*, 2024, 3, 676.



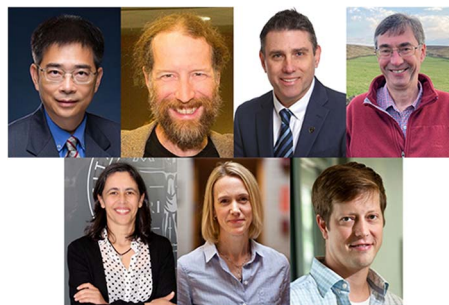
**Inside cover**  
See Kunal Roy *et al.*, pp. 686–705. Image reproduced by permission of Kunal Roy from *Environ. Sci.: Adv.*, 2024, 3, 686.

## EDITORIAL

620

### 2023 Outstanding Papers published in the *Environmental Science* journals of the Royal Society of Chemistry

Zongwei Cai, Neil Donahue, Graham Gagnon, Kevin C. Jones, Célia Manaia, Elsie Sunderland and Peter J. Vikesland

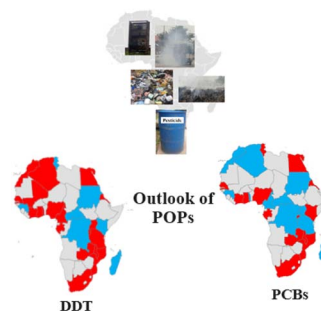


## CRITICAL REVIEWS

623

### Implementation of the Stockholm Convention on persistent organic pollutants (POPs) in Africa – progress, challenges, and recommendations after 20 years

Olumide Emmanuel Akinrinade,\* Foluso O. Agunbiade, Rose Alani and Olusegun O. Ayejuyo



# Advance your career in science

with professional recognition that showcases  
your **experience, expertise and dedication**

## Stand out from the crowd

Prove your commitment  
to attaining excellence in  
your field

## Gain the recognition you deserve

Achieve a professional  
qualification that inspires  
confidence and trust

## Unlock your career potential

Apply for our professional  
registers (RSci, RSciTech)  
or chartered status  
(CChem, CSci, CEnv)

## Apply now

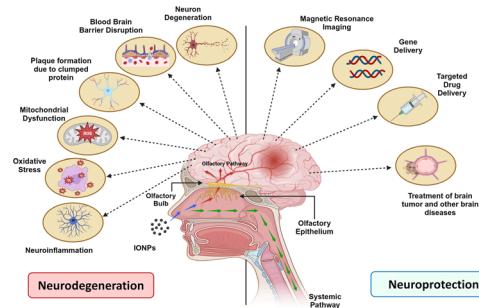
[rsc.li/professional-development](https://rsc.li/professional-development)



635

## Iron oxide nanoparticles: a narrative review of in-depth analysis from neuroprotection to neurodegeneration

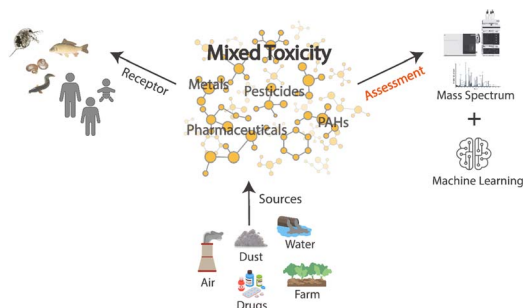
Ruchika Agarwal, Satadal Adhikary, Suchandra Bhattacharya, Sohini Goswami, Dipsikha Roy, Sohini Dutta, Abhratanu Ganguly, Sayantani Nanda and Prem Rajak\*



661

## A brief review on the assessment of potential joint effects of complex mixtures of contaminants in the environment

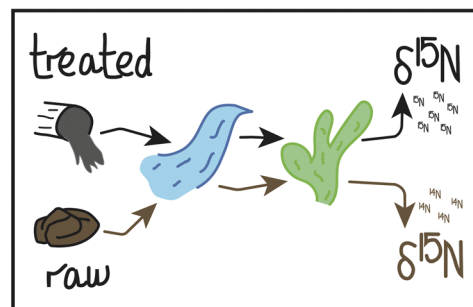
Yu Cheng, Jue Ding, Catherine Estefany Davila Arenas, Markus Brinkmann\* and Xiaowen Ji



676

## Nitrogen isotopes in herbaria document historical nitrogen sewage pollution in the Mersey Estuary, England

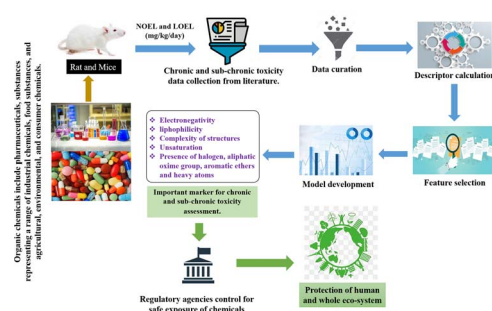
Freya C. Alldred,\* Darren R. Gröcke,\* Samuel E. Jackson and Geraldine Reid



686

## Chemometric modeling of the lowest observed effect level (LOEL) and no observed effect level (NOEL) for rat toxicity

Ankur Kumar, Probir Kumar Ojha and Kunal Roy\*

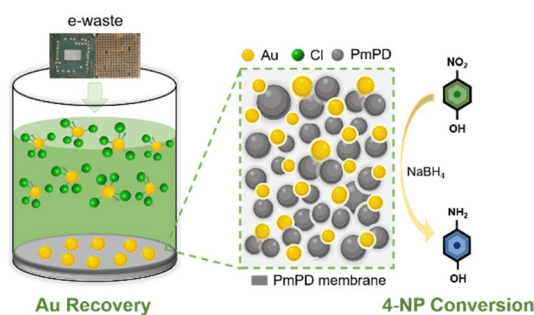




763

## From waste to precious: recovering and anchoring Au from electronic wastewater onto poly(*m*-phenylenediamine) membranes for catalytic nitrophenol conversion

Youmei Xu, Yuchao Chen, Mengxia Wang, Yufei Shu, Siyu Cao and Zhongying Wang\*



776

## Fabrication of a novel palladium membrane sensor for its determination in environmental and biological samples

Adil O. S. Bahathiq, Ahmad O. Babalghith, Alaa S. Amin\* and Abdelrazek M. Askar

