

# 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(1) 1–146 (2024)



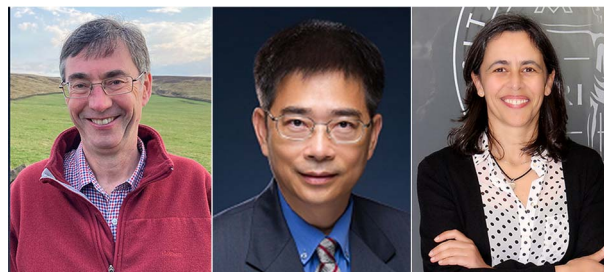
Cover  
Image credit: © Papapig / Shutterstock.

## EDITORIAL

8

### *Environmental Science – Advances: reflections and welcome to another year of the journal*

Kevin C. Jones, Zongwei Cai and Célia M. Manaia

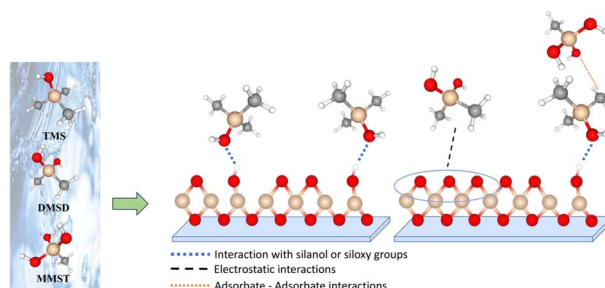


## PAPERS

10

### **Superior single- and multi-component siloxane removal from water using a faulted silica DON zeolite adsorbent**

Dariana R. Vega-Santander, Rodinson Arrieta-Pérez, Daniela Rivera-Mirabal, Gabriela Del Valle-Pérez, Miguel Sepúlveda-Pagán, Juan C. Muñoz-Senmache, Yomaira J. Pagán-Torres and Arturo J. Hernández-Maldonado\*



# Environmental Science: Atmospheres

GOLD  
OPEN  
ACCESS

Connecting communities  
and inspiring new ideas

[rsc.li/submittoEA](https://rsc.li/submittoEA)

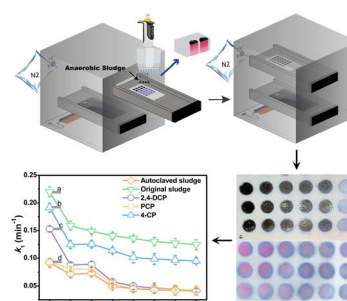
Fundamental questions  
Elemental answers



19

### Development of a portable, microwell-based, smartphone-assisted colorimetric device to measure the activities of anaerobic digestion

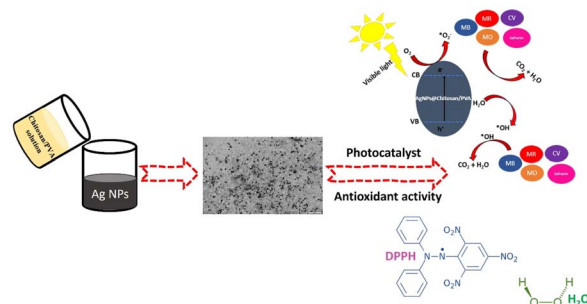
Jian Lin Chen,<sup>\*</sup> Yanhao Miao, Qidi Sun, Yung-Kang Peng, Guozhu Mao, Wanqing Dai, Cui Tang and Jiayu Chen



28

### Chitosan/PVA-supported silver nanoparticles for azo dyes removal: fabrication, characterization, and assessment of antioxidant activity

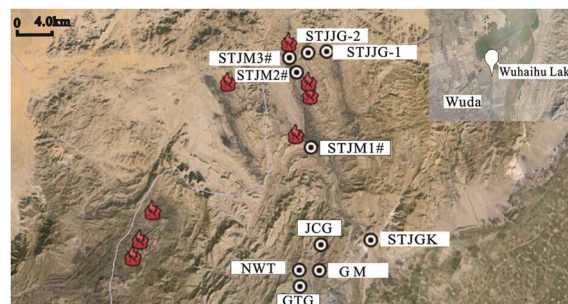
Ismet Meydan,<sup>\*</sup> Aysenur Aygun, Rima Nour Elhouda Tiri, Tugba Gur, Yilmaz Kocak, Hamdullah Seckin and Fatih Sen<sup>\*</sup>



36

### Fluorine pollution in a sheep fluorosis area of the northern Helan Mountains, Ningxia, China

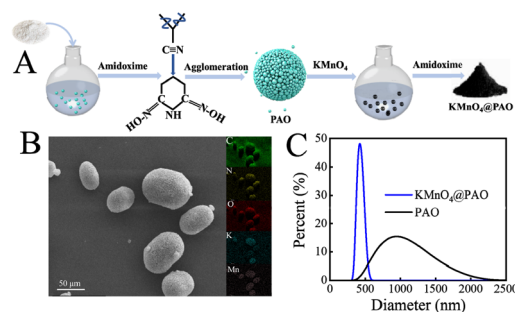
Kang Yang, Xiuping Hong<sup>\*</sup> and Handong Liang



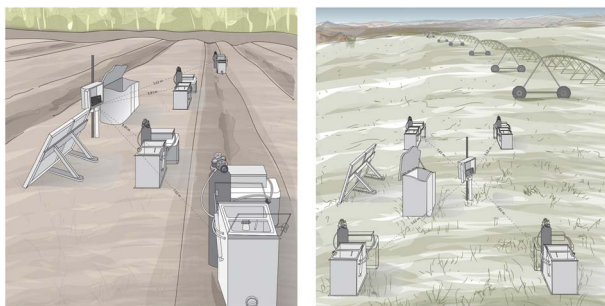
44

### Polyamidoxime (PAO) granules for solar-enhanced uranium extraction from seawater

Xue Zhang, Qianhong Gao and Dadong Shao<sup>\*</sup>



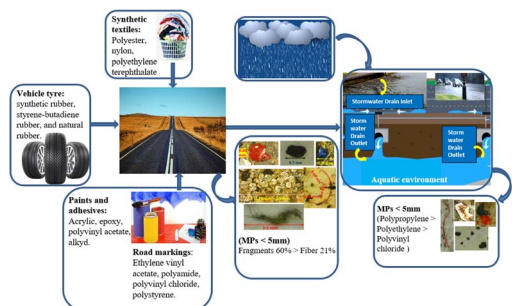
51



### Evaluation of nitrogen fate from land-application wastewater treatment for cheese making and vegetable processing facilities

Geoffrey S. Siemering,\* Francisco J. Arriaga, Clay P. VanderLeest and Sarah L. Naatz

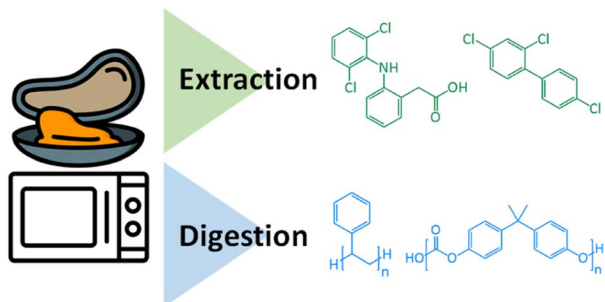
62



### Microplastic distribution and ecological risks: investigating road dust and stormwater runoff across land uses

S. M. Alamgir Kabir, Muhammed A. Bhuiyan, Guomin Zhang and Biplob Kumar Pramanik\*

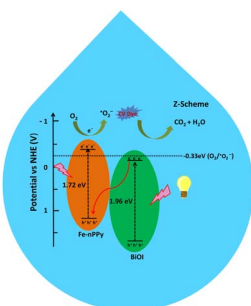
76



### Characterization and quantification of microplastics and organic pollutants in mussels by microwave-assisted sample preparation and analytical pyrolysis

Greta Biale, Jacopo La Nasa, Lorenzo Fiorentini, Alessio Ceccarini, Diego Carnaroglio, Marco Mattonai\* and Francesca Modugno

85



### Facile synthesis of Z-scheme Fe-nPPy/BiOI nanocomposites for enhanced visible light driven photocatalytic activity

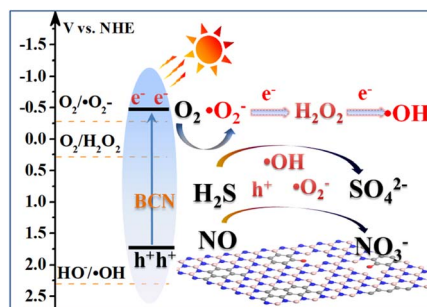
Rajesh Kumar, Rituporn Gogoi, Kajal Sharma, Astha Singh and Prem Felix Sirit\*



97

## Optimizing the electronic configuration of h-BN for boosting the photocatalytic transformation of acid gases under visible light

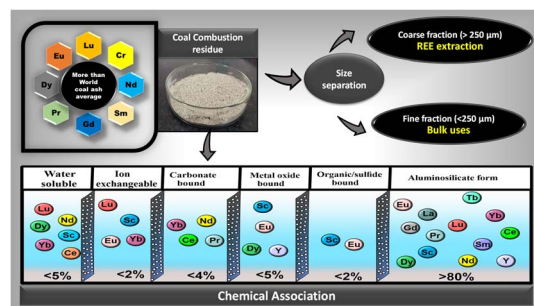
Hao Yang, Libin Zeng, Jiali Wang and Can Yang\*



109

## Separation of coal combustion residue for critical element extraction and other bulk uses

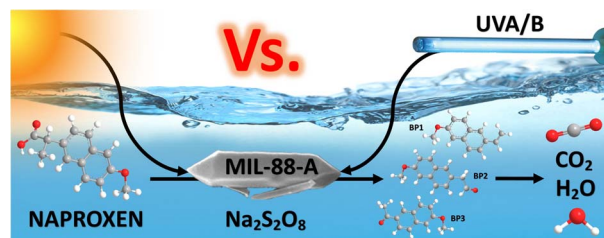
Kanishk Kumar Karan, R. Ebin Masto,\* Hridesh Agarwalla, Siddharth Bari, Manish Kumar, P. Gopinathan, Bodhisatwa Hazra, Sujan Saha and Sudip Maity



119

## Investigating naproxen removal from pharmaceutical factory effluents using UVA/MIL-88-A/PS and solar/MIL-88-A/PS systems

Sarah Ghazali, Abbas Baalbaki, Weam Bou Karroum, Alice Bejjani\* and Antoine Ghauch\*



132

## Using a supervised machine learning approach to predict water quality at the Gaza wastewater treatment plant

Mazen S. Hamada, Hossam Adel Zaqoot\* and Waqar Ahmed Sethar

