### **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(3) 349-504 (2024)



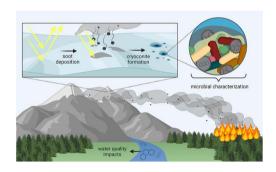
Cover Cover Image credit: @ Marian/ Getty Images.

#### COMMUNICATION

355

A preliminary investigation of microbial communities on the Athabasca Glacier within deposited organic matter

Milena Esser, Phillip Ankley, Caroline Aubry-Wake, Yuwei Xie, Helen Baulch, Cameron Hoggarth, Markus Hecker, Henner Hollert, John P. Giesy, John W. Pomeroy and Markus Brinkmann\*

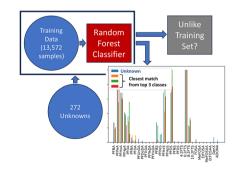


#### **PAPERS**

366

Multi-class machine learning classification of PFAS in environmental water samples: a blinded test of performance on unknowns

Tohren C. G. Kibbey,\* Denis M. O'Carroll, Andrew Safulko and Greg Coyle





# 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

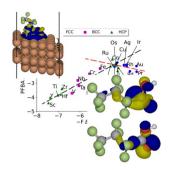


#### **PAPERS**

#### 383

#### What can Blyholder teach us about PFAS degradation on metal surfaces?

Glen R. Jenness\* and Manoj K. Shukla\*



#### 402

#### Controlling crystallisation and dissolution of biogenic CaCO<sub>3</sub> via dissolved magnesium cations

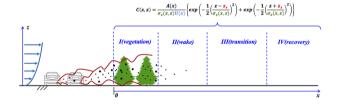
Toby Morton-Collings, Minjun Yang and Richard G. Compton\*



#### 411

#### Resolving the effect of roadside vegetation barriers as a near-road air pollution mitigation strategy

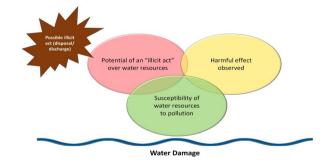
Khaled Hashad, Jonathan T. Steffens, Richard W. Baldauf, David K. Heist, Parikshit Deshmukh and K. Max Zhang\*



#### 422

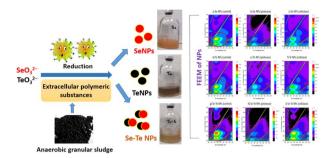
#### Substantial damage to surface water in the context of environmental crimes

Anabela Rebelo,\* Andreia Franco, Felisbina Quadrado, Vanda Reis, Sofia Batista, Ana Isabel Garcia, Rodrigo Ferreira, António Quintas and Albertina M. Marques



#### **PAPERS**

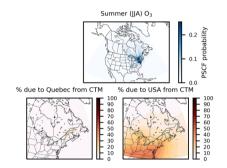
436



#### Role of extracellular polymeric substances in selenite and tellurite reduction by waste activated and anaerobic sludge

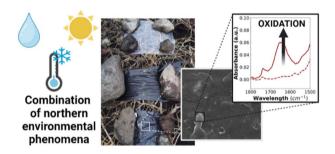
Sudeshna Saikia,\* Kannan Pakshirajan and Piet N. L. Lens

448



#### Transboundary transport of air pollution in eastern Canada

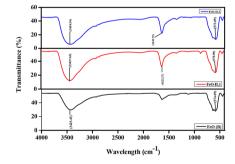
Robin Stevens, Charles Poterlot, Nicole Trieu, Henry Alejandro Rodriguez and Patrick L. Hayes



#### Weathering of agricultural polyethylene films in cold climate regions: which parameters influence fragmentation?

Laura Rowenczyk,\* Heidi Jahandideh, Nicholas Lin and Nathalie Tufenkji

480



#### Hydrophobic ionic liquid (IL)-based magnetic adsorbents: the way forward to remediate water pollution

Divya Yadav, Karmjeet Nain, Divya Dhillayan, Rishi Mittal, Shafila Bansal and Santosh Bhukal\*