# **Environmental Science Processes & Impacts**

#### rsc.li/espi

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 2050-7887 CODEN ESPICZ 26(1) 1-210 (2024)



#### Cover

See Hendryk Czech, Olga Popovicheva et al., pp. 35–55. Image reproduced by permission of Anika Neumann from *Environ. Sci.: Processes Impacts*, 2024, **26**, 35.



#### Inside cover

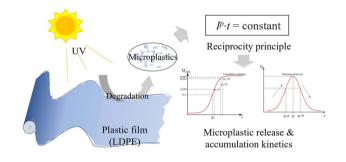
See Amitava Mukherjee et al., pp. 56–70. Image reproduced by permission of Amitava Mukherjee from Environ. Sci.: Processes Impacts, 2024, 26, 56.

#### **PERSPECTIVE**

8

## The reciprocity principle in mulch film deterioration and microplastic generation

Runhao Bai, Zhen Li, Qin Liu, Qi Liu, Jixiao Cui\* and Wenging He\*



#### CRITICAL REVIEW

16

### Red tides in the Galician rías: historical overview, ecological impact, and future monitoring strategies

Rodríguez F.,\* Escalera L., Reguera B., Nogueira E., Bode A., Ruiz-Villarreal M., Rossignoli A. E., Ben-Gigirey B., Rey V. and Fraga S.





# 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

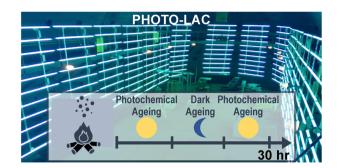
rsc.li/professional-development



#### **PAPERS**

#### Wildfire plume ageing in the Photochemical Large **Aerosol Chamber (PHOTO-LAC)**

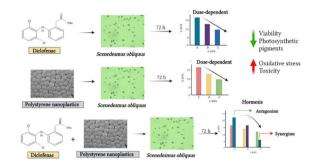
Hendryk Czech,\* Olga Popovicheva,\* Dmitriy G. Chernov, Alexander Kozlov, Eric Schneider, Vladimir P. Shmargunov, Maxime Sueur, Christopher P. Rüger, Carlos Afonso, Viktor Uzhegov, Valerii S. Kozlov, Mikhail V. Panchenko and Ralf Zimmermann



56

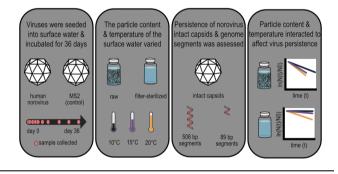
#### Polystyrene nanoplastics alter the ecotoxicological effects of diclofenac on freshwater microalgae Scenedesmus obliquus

Abisha Christy Christudoss, Natarajan Chandrasekaran and Amitava Mukherjee\*



#### Temperature and particles interact to affect human norovirus and MS2 persistence in surface water

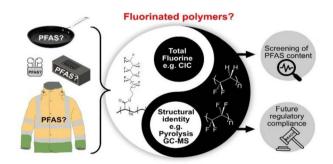
Lauren C. Kennedy, Sarah A. Lowry and Alexandria B. Boehm\*



82

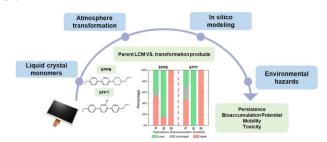
#### Identification and quantification of fluorinated polymers in consumer products by combustion ion chromatography and pyrolysis-gas chromatography-mass spectrometry

Lisa Skedung,\* Eleni Savvidou,\* Steffen Schellenberger, Anders Reimann, Ian T. Cousins and Jonathan P. Benskin\*



#### **PAPERS**

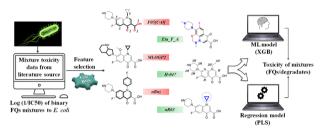
94



#### Understanding the importance of atmospheric transformation in assessing the hazards of liquid crystal monomers

Jinlong Wang, Shenghong Wang, Zhizhen Zhang, Xinkai Wang, Kaihui Xia, Li Li\* and Qifan Liu\*

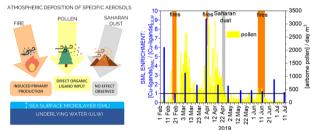
105



Predictive binary mixture toxicity modeling of fluoroguinolones (FQs) and the projection of toxicity of hypothetical binary FQ mixtures: a combination of 2D-QSAR and machine-learning approaches

Mainak Chatterjee and Kunal Roy\*

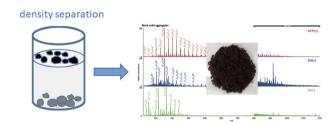
119



How do certain atmospheric aerosols affect Cubinding organic ligands in the oligotrophic coastal sea surface microlayer?

Slađana Strmečki,\* Iva Dešpoja, Abra Penezić, Andrea Milinković, Saranda Bakija Alempijević, Gyula Kiss, András Hoffer, Božena Mitić, Dario Hruševar and Sanja Frka

136



Physical removal of PAXHs from highly contaminated soil by density differentiation: studying the effectiveness on the molecular level

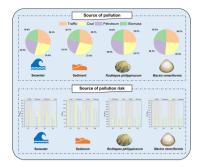
Ruoji Luo and Wolfgang Schrader\*

#### **PAPERS**

#### 146

Source-specific ecological and health risks of polycyclic aromatic hydrocarbons in the adjacent coastal area of the Yellow River Estuary, China

Zeyuan Li, Ruicheng Qi, Yufen Li, Jingjing Miao, Yaobing Li, Zhiheng He, Ning Zhang and Luqing Pan\*



#### 161

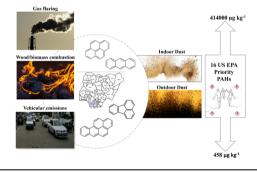
Use of remote sensing to assess vegetative stress as a proxy for soil contamination

John R. Dean,\* Shara Ahmed, William Cheung, Ibrahim Salaudeen, Matthew Reynolds, Samantha L. Bowerbank, Catherine E. Nicholson and Justin J. Perry



Polycyclic aromatic hydrocarbons in dust from rural communities around gas flaring points in the Niger Delta of Nigeria: an exploration of spatial patterns, sources and possible risk

Eze W. Odali, Chukwujindu M. A. Iwegbue,\* Francis E. Egobueze, Godwin E. Nwajei and Bice S. Martincigh



#### 192

Quantitative structure-activity relationships for the reaction kinetics of trace organic contaminants with one-electron oxidants

Xi Liang, Yu Lei\* and Xin Yang\*

