Open Access Article. Published on 12 January 2026. Downloaded on 1/24/2026 8:53:37 PM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

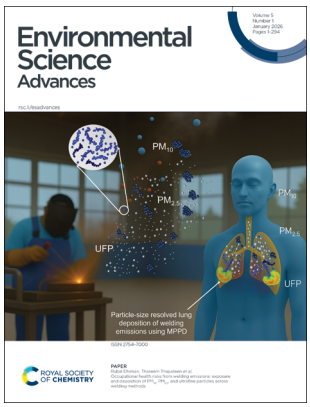
Environmental Science: Advances

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 5(1) 1–294 (2026)



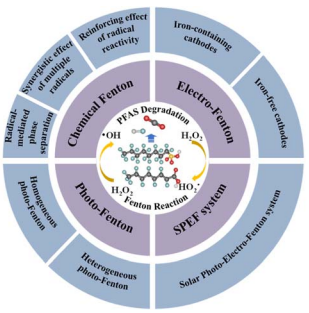
Cover
See Rubal Dhiman, Thaseem Thajudeen *et al.*, pp. 59–77. Image reproduced by permission of Thaseem Thajudeen from *Environ. Sci.: Adv.*, 2026, **5**, 59.

CRITICAL REVIEW

9

Degradation of per- and polyfluoroalkyl substances (PFASs) by Fenton reactions

Zhicong Huang, Xi Huang, Kang Liu, Junwei Fu* and Min Liu*

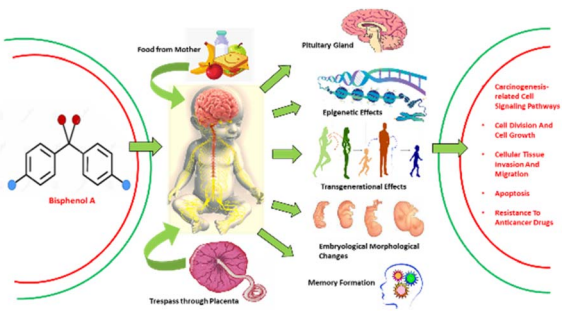


TUTORIAL REVIEW

43

Impact of bisphenol A exposure on fetal brain development and neurological health-a review

Jun Feng, Mansoor Elahi Mazari, Samra Yasmin, Ammara Riaz, Jalal Uddin, Abdullah Ijaz Hussain, Fatima Zohra Masood, Jixin Zhong and Ghulam Mustafa Kamal*



ROYAL SOCIETY OF CHEMISTRY

View Article Online

GOLD OPEN ACCESS

EES Batteries

Exceptional research on batteries and energy storage

Part of the EES family

Join in | Publish with us

rsc.li/EESBatteries

Registered charity number: 207890

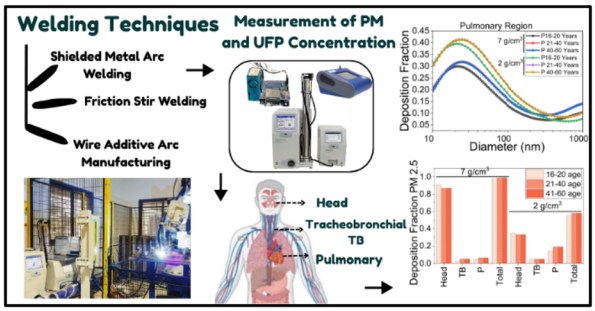
Open Access Article. Published on 12 January 2026. Downloaded on 1/24/2026 8:53:37 PM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

PAPERS

59

Occupational health risks from welding emissions: exposure and deposition of PM_{10}, $PM_{2.5}$, and ultrafine particles across welding methods

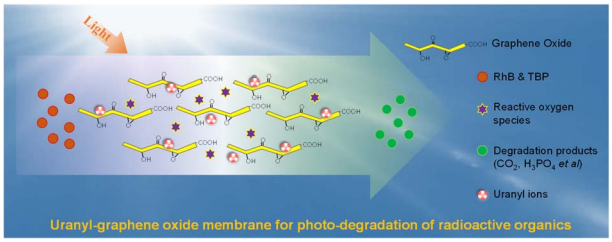
Rubal Dhiman, Adarsh Prakash, Subhrajyoti Saroj, Priyabrata Sahoo, Anirudha Ambekar, Sachin D. Kore, Thaseem Thajudeen* and Sarath K. Guttikunda



78

Uranyl–graphene oxide composite membranes for enhanced photocatalytic tributyl phosphate degradation

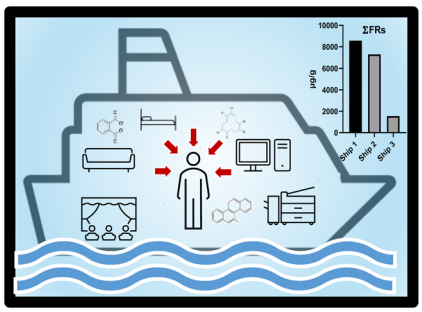
Jiahui Ying, Liqin Huang, Shanshan Yu, Shuang Liu, Zhe Wang,* Jing Chen* and Yuexiang Lu*



86

Flame retardants in dust from the indoor environments of expedition cruise ships

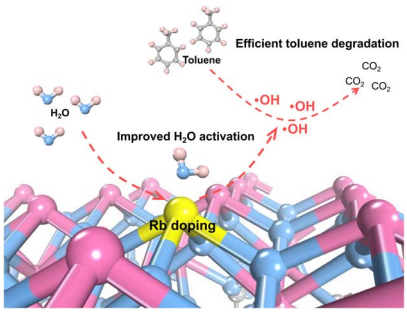
Veronica van der Schyff,* Verena Meraldi, Andrew Luke King, Simona Rozárka Jílková, Ondřej Audy, Petr Kukučka, Jiří Kohoutek and Lisa Melymuk



98

Alkali metal ion-doped $Bi_2O_2CO_3$ enhances ·OH generation *via* interfacial water activation for efficient toluene photodegradation

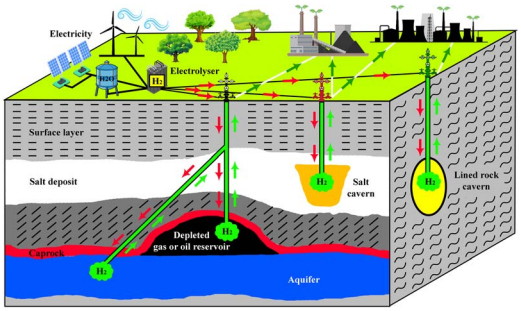
Hong Wang,* Shujun Liu, Yanjuan Sun and Fan Dong*



Open Access Article. Published on 12 January 2026. Downloaded on 1/24/2026 8:53:37 PM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

PAPERS

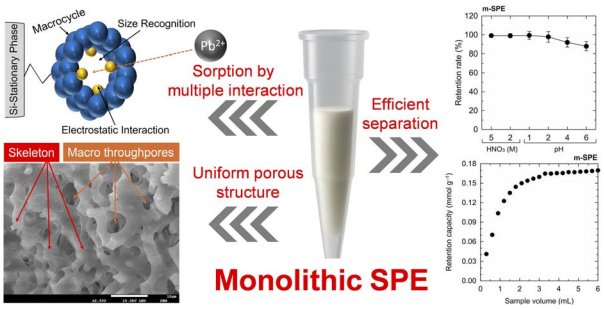
107



Multi-criteria framework for ranking geological sites in underground hydrogen storage

Soha Iranfar, Farshad Sadeghpour, Mahmood Shakiba,* Meysam Naderi and Aliakbar Hassanpouryouzband*

118



Monolithic *vs.* particle-based solid-phase extraction for selective separation of lead from aqueous matrices

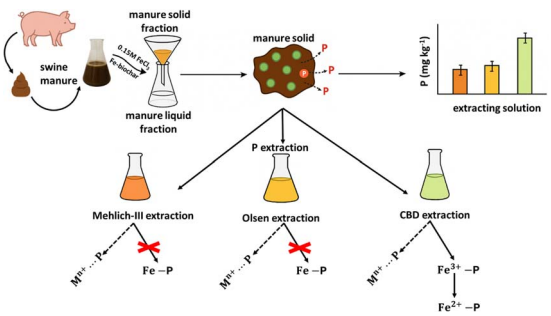
Pranta Sarker, Ismail Rahman,* Kouki Yunoshita, M. Ferdous Alam, Yoshiaki Furusho, Asami S. Mashio and Hiroshi Hasegawa*

129

Assessing fluoride concentrations in Iowa's groundwater and drinking water: implications for public health and water management

Darrin A. Thompson,* Sophie M. Pierce, John C. Flunker, Daniel W. Gilles, Rick Langel, Abdul Quraishi, Alex Sukalski, Steven M. Levy, David M. Cwiertny and Keith E. Schilling

143



Augmenting manure solids as scaffolding for phosphorus release/retention *via in situ* iron-phosphate complexes procured with Fe-biochar + $FeCl_3$ treatment

Krishna Yadav, Chumki Banik and Santanu Bakshi*

This journal is © The Royal Society of Chemistry 2026

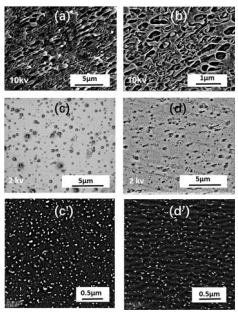
Open Access Article. Published on 12 January 2026. Downloaded on 1/24/2026 8:53:37 PM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

PAPERS

156

Mechanical recycling of multiphase contaminated plastic waste *via* physical compatibilization: a study on rheological, morphological and mechanical properties

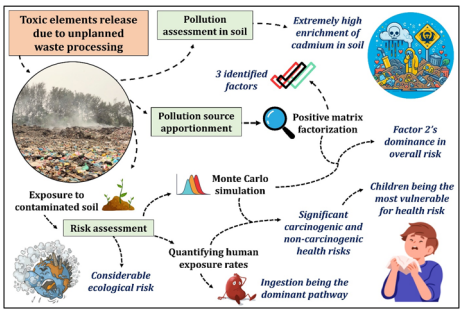
Hu Qiao, Geraldine Cabrera, Abderrahim Maazouz and Khalid Lamnawar*



169

Utilizing PMF and Monte Carlo-based models to evaluate toxic metal enrichment pathways, sources, and public health risks in an unplanned urbanized dumpsite soil

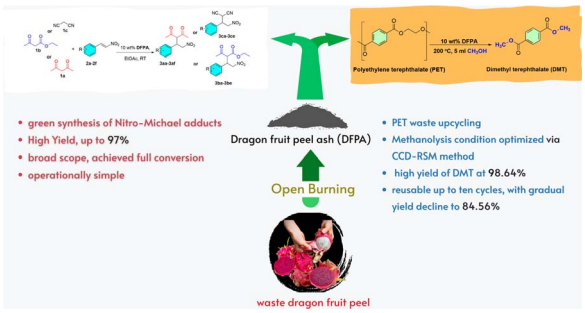
Hrithik Nath, Sajal Kumar Adhikary, Srabanti Roy, Sunjida Akhter, Ummey Hafsa Bithi, Mohammed Abdus Salam, Abu Reza Md. Towfiqul Islam and Md. Abu Bakar Siddique*



192

A dragon fruit peel-derived heterogeneous catalyst for Michael addition reactions and methanolysis of PET waste: a green and dual-functional approach

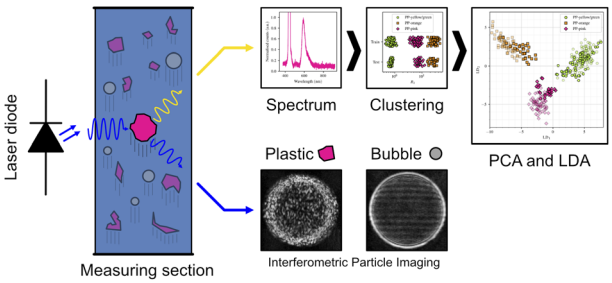
Vanlalngaihawma Khiangte, Samson Lalhmangaihzuala, Z. T. Laldinpuii and Khiangte Vanlaldinpuia*



206

A non-contact *in situ* approach for detecting fluorescent microplastic particles in flowing water using fluorescence spectroscopy

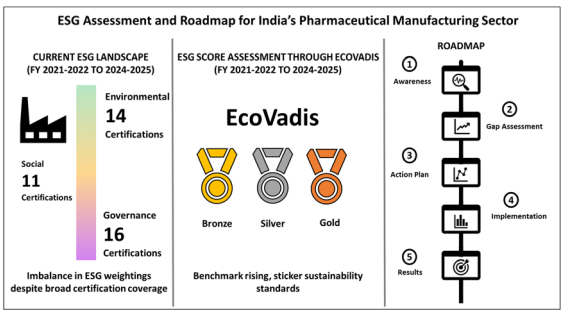
Nico Merck,* Jonas Otto, Martin Schaeper and Nils Damaschke



Open Access Article. Published on 12 January 2026. Downloaded on 1/24/2026 8:53:37 PM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

PAPERS

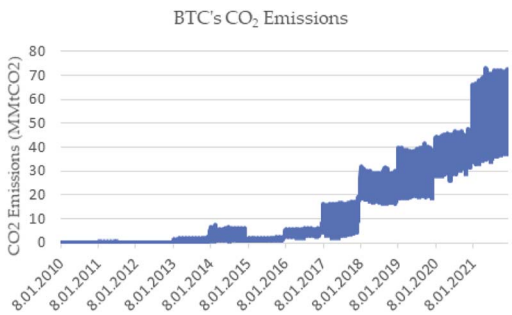
221



Driving ESG excellence in the pharmaceutical sector through an analytical approach: a roadmap for score improvement

Gursharan Singh and Ashutosh Kumar*

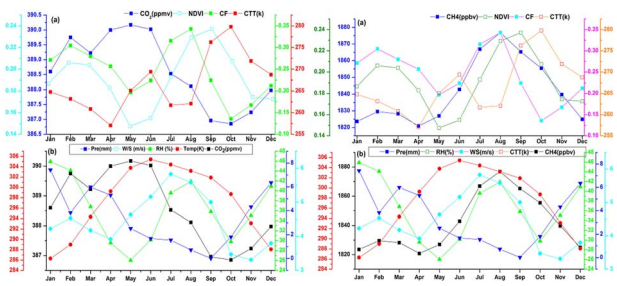
239



Identifying the key drivers of Bitcoin's emissions

Gamze Alkan* and Halil Özekicioğlu

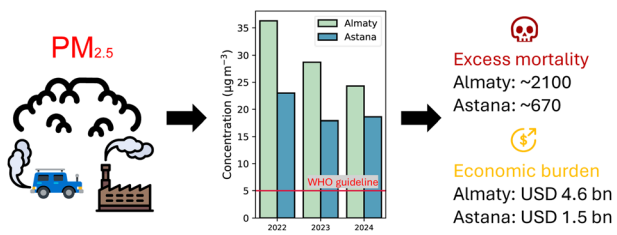
257



Tropospheric carbon dioxide and methane temporal variability using atmospheric infrared sounding data: a case study of Pakistan

Bahadar Zeb,* Khan Alam, Allah Ditta,* Mazhar Sajjad and Maqbool Ahmad

281



Urban $PM_{2.5}$ pollution in Kazakhstan: health burden and economic costs

Aset Muratuly, Ravkat Mukhtarov, Ivan Radelyuk, Ferhat Karaca and Nassiba Baimatova*

This journal is © The Royal Society of Chemistry 2026