Open Access Article. Published on 27 May 2025. Downloaded on 5/11/2026 2:14:56 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

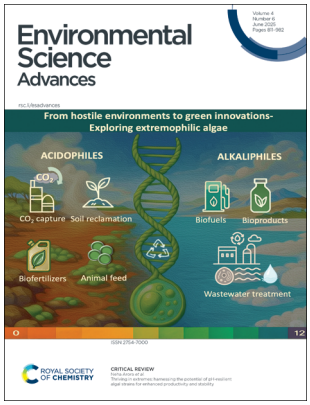
Environmental Science: Advances

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 4(6) 811–982 (2025)



Cover
See Neha Arora *et al.*, pp. 884–900. Image reproduced by permission of Neha Arora from *Environ. Sci.: Adv.*, 2025, **4**, 884. Partially generated using Google Gemini.

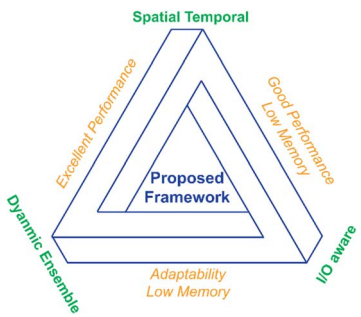
Inside cover
See Ryota Nakajima *et al.*, pp. 901–911. Image reproduced by permission of JAMSTEC from *Environ. Sci.: Adv.*, 2025, **4**, 901.

PERSPECTIVE

817

AI for enhanced water quality data imputation: a deep learning perspective

Ishan Prasad Banjara, Suman Poudel, Kalam Pariyar, Deepesh Upreti, Antigoni Zafeirakou and Shukra Raj Paudel*

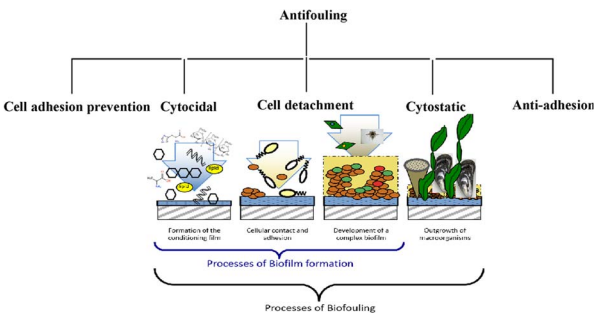


TUTORIAL REVIEWS

824

Polymers for anti-fouling applications: a review

Waham Ashaier Laftah* and Wan Aizan Wan Abdul Rahman



ROYAL SOCIETY OF CHEMISTRY

Royal Society of Chemistry approved training courses

Explore your options.
Develop your skills.
Discover learning that suits you.

Courses in the classroom, the lab, or online

Find something for every stage of your professional development. Search our database by:

- subject area
- location
- event type
- skill level

Members **get at least 10% off**

Visit **rsc.li/cpd-training**

SAVE 10%

Registered charity number: 207890

This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

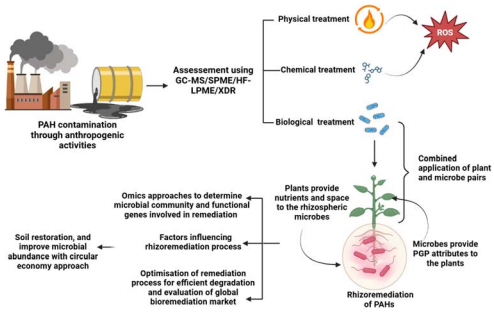
Open Access Article. Published on 27 May 2025. Downloaded on 5/11/2026 2:14:56 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

TUTORIAL REVIEWS

842

Environmental restoration of polyaromatic hydrocarbon-contaminated soil through sustainable rhizoremediation: insights into bioeconomy and high-throughput systematic analysis

Nandita Das, Vijay Kumar, Kamlesh Chaure and Piyush Pandey*

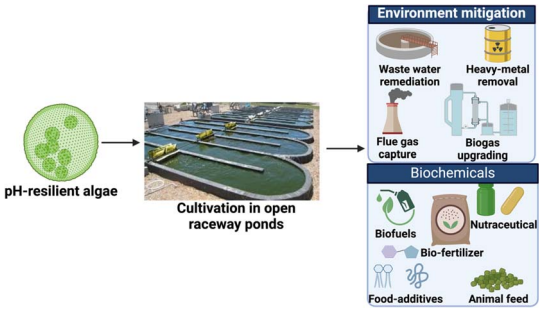


CRITICAL REVIEW

884

Thriving in extremes: harnessing the potential of pH-resilient algal strains for enhanced productivity and stability

Neha Arora,* Shweta Tripathi, George P. Philippidis and Shashi Kumar

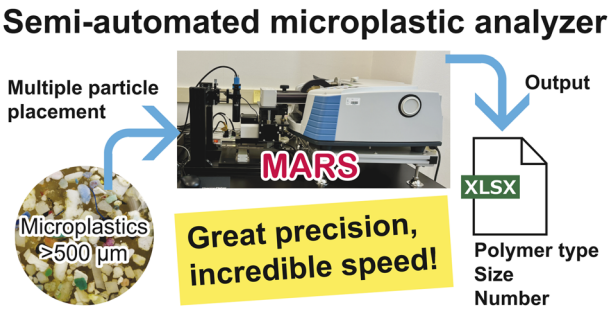


PAPERS

901

Development of a novel semi-automated analytical system of microplastics using reflectance-FTIR spectrometry: designed for the analysis of large microplastics

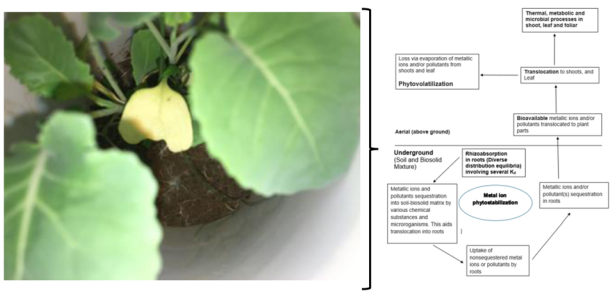
Ryota Nakajima,* Hiromi Sawada, Shinichiro Hayashi, Akishi Nara and Mitsunari Hattori



912

The effect of biosolid/soil composition on growth and uptake of zinc (Zn) by broccoli (*Brassica oleracea* var.) under greenhouse conditions

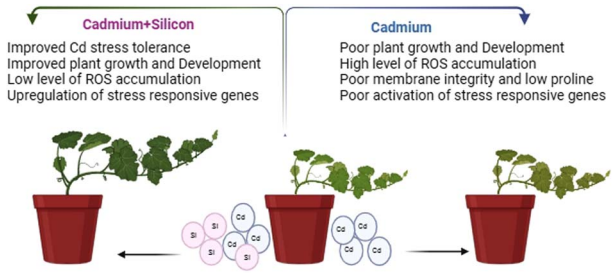
Kefa K. Onchoke,* Brett P. Horalan Jnr. and Robert B. Friedfeld



PAPERS

Open Access Article. Published on 27 May 2025. Downloaded on 5/11/2026 2:14:56 AM.
This article is licensed under a Creative Commons Attribution 3.0 Unported Licence.

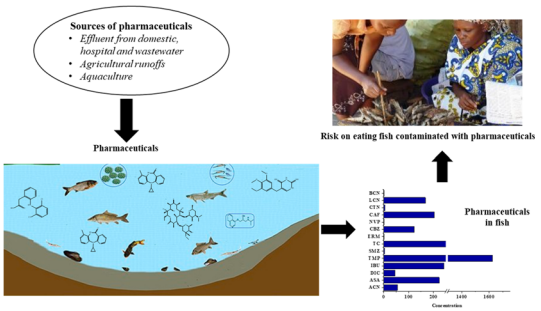
921



Silicon alleviates cadmium toxicity in muskmelon (*Cucumis melo*): integrative insights from photosynthesis to antioxidant activity to gene expression

Ram Krishna, Mohammad Shahid, Waquar Akhter Ansari,* Khalid Mashay Al-Anazi, Mohammad Abul Farah, Durgesh Kumar Jaiswal, Akhilesh Yadav, Sudhakar Pandey and Md Azizul Haque*

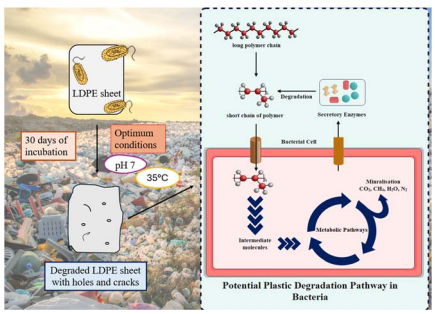
938



Occurrence and distribution of selected pharmaceuticals in fresh fish along the Kenyan coast and assessment of potential human health risks

Veronica Wayayi Ogolla Wanjeri, Eric Okuku, Jane Catherine Ngila, Edward Waiyaki, Joseph Kamau Nyingi and Patrick Gathura Ndungu*

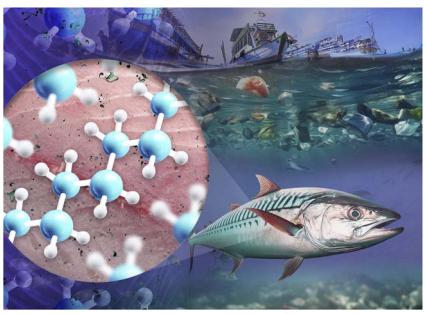
952



Introducing the LDPE degrading microbes of sedimentary systems: from dumpsite to laboratory

Anita Tirkey and Lata Sheo Bachan Upadhyay*

964



Morphochemical information on microplastic fibers found in edible tissue of local commercial fishes from the South China Sea and the Straits of Malacca for potential human consumption

Yusof Shuaib Ibrahim, Nur Izzati Abd Razak, Nur Sakinah Roslan, Ku Mohd Kalkausar Ku Yusof, Ahmad Ammarluddin Mohd Ali, Nor Fatihah Omar, Chingakham Chinglenthoiba, Nurul Najihah Mohamad and Sabiqah Tuan Anuar*

This journal is © The Royal Society of Chemistry 2025