

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(2) 295–608 (2026)



Cover
See Constantine Parinos, Nikolaos Thomaidis *et al.*, pp. 416–434. Image reproduced by permission of Nikolaos Thomaidis from *Environ. Sci.: Adv.*, 2026, 5, 416.



Inside cover
See Amauri Antonio Menegário *et al.*, pp. 435–449. Image reproduced by permission of Raquel de Carvalho Gradwoll from *Environ. Sci.: Adv.*, 2026, 5, 435.

CRITICAL REVIEWS

304

Industrial and public infrastructure as local sources of organic contaminants in the Arctic

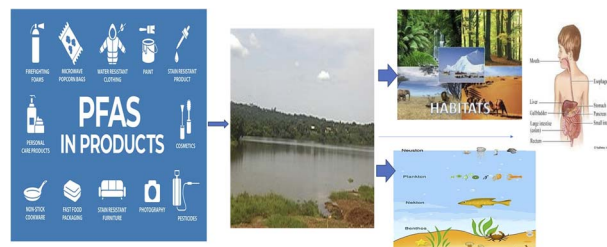
R. Kallenborn,* G. W. Gabrielsen, K. Vorkamp, L.-O. Reiersen, A. Evenset, K. B. Pedersen, S. Corsolini, N. Ademollo, Y. Li, Z.-F. Zhang, H. A. Langberg, W. F. Hartz, F. von Hippel, D. Muir, C. A. de Wit, M. J. Gunnarsdottir, P. E. Jensen, G. M. Kirkelund, G. Breedveld, S. Bengtson Nash, J. L. Lyche and E. Barbaro



348

Environmental fate behavior and risk implications of legacy and emerging PFAS across multiple media: a spatiotemporal perspective from Africa and beyond

John Kanayochukwu Nduka,* Chioma Juliet Alluwo, Chideraa Courage Offor* and Ogechi Irene Eboh-Ajoku



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

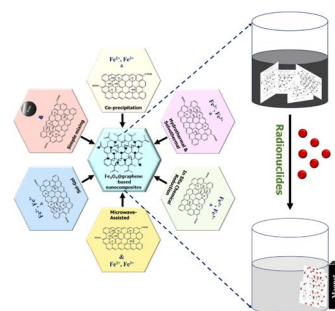


CRITICAL REVIEWS

369

Magnetic graphene nanocomposites: a new frontier in radioactive waste remediation

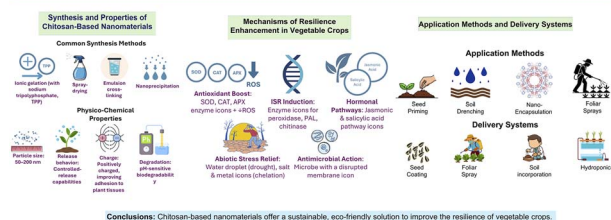
M. Mahiuddin,* Abhijit Barua, A. B. M. Nazmul Islam, M. Saiful Islam Monir, Abdur Rahman, Samir Mallick, Joshua T. Moore, Tasneem A. Siddiquee, Zinnat Rahman and Ismail Rahman*



393

Nano-charged resilience: harnessing chitosan-based nanomaterials for enhanced vegetable crop adaptation in sustainable agriculture

Qudrat Ullah, Waqas Haider, Muhammad Qasim, Muhammad Waqar, Thanet Khomphet, Mujahid Farid* and Zaki ul Zaman Asam

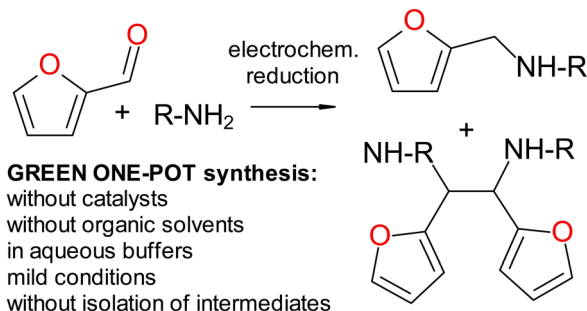
Nano-Charged Resilience: Harnessing Chitosan-Based Nanomaterials for Enhanced Vegetable Crop Adaptation in Sustainable Agriculture

COMMUNICATION

411

Green valorisation of biowastes – electrochemical “one-pot” reductive amination of furfural on a graphite electrode in water

Joel Donkeng-Dazie,* Lucie Koláčná, Martin Lamač and Jiří Ludvík*

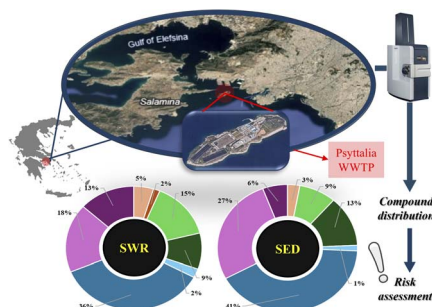


PAPERS

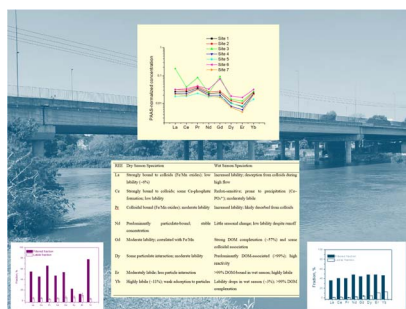
416

Occurrence, distribution and risk assessment of organic micropollutants in the Saronikos Gulf, Greece, utilizing LC-TIMS-HRMS

Rallis Lougkovois, Constantine Parinos,* Georgios Gkotsis, Maria-Christina Nika, Ioannis Hatzianestis, Alexandra Pavlidou and Nikolaos Thomaidis*



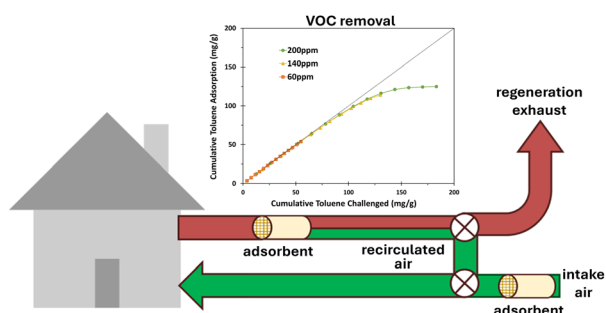
435



Fractionation of rare earth elements in water samples from the Paraíba do Sul River

Raquel Carvalho Gradwohl, Melina Borges Teixeira Zanatta, Luiz Felipe Pompeu Prado Moreira, Lucas Pellegrini Elias, Jose Lucas Martins Viana and Amauri Antonio Menegário*

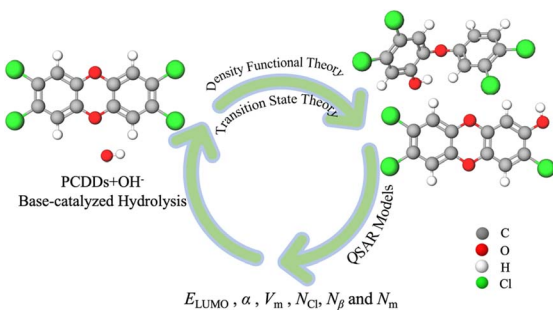
450



Toluene adsorption and capacity regeneration using zeolite-based monolith and activated carbon fiber felt

Melanie Moses-DeBusk,* Mengjia Tang, Kai Li, Keju An, William P. Partridge and Kashif Nawaz

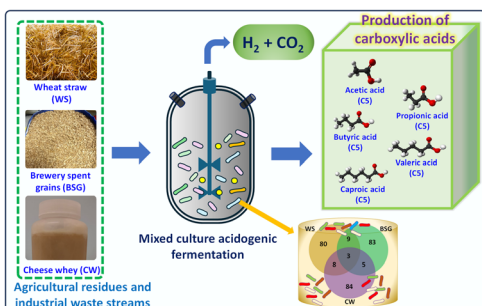
463



Mechanistic insights into the base-catalyzed hydrolysis of PCDDs via QSAR and DFT approaches

Kun Xie and Haiqin Zhang*

470



Acidogenic valorization of agricultural residues and industrial waste streams: substrate composition regulating the microbial community and metabolites

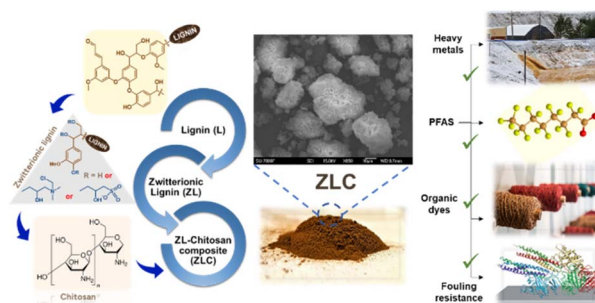
Omprakash Sarkar,* Ulrika Rova, Paul Christakopoulos and Leonidas Matsakas*



485

Multifunctional lignin biocomposite for broad-spectrum water purification

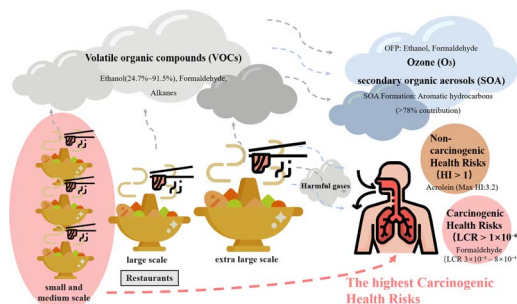
Sritama Mukherjee,* Salvatore Lombardo and Ulrica Edlund*



499

Characteristics and health risk assessment of VOCs from typical hot pot restaurants in Chongqing, China

Xiaohui Hua, Jian Zhang, Xinyu Zhang, Houjian Yang, Meng Wang, Zhiyun Luo* and Hailin Wang*



510

Process intensification by resonant vibratory mixing for samarium–cobalt magnet leaching with deep eutectic solvents

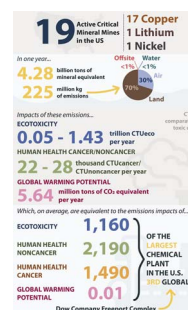
Zainab Nasrullah,* Frank Agyemang, Mehran Saddat and Richard LaDouceur



522

Life cycle inventory data for critical mineral mining: recommendations and new U.S. data compendium

Jenna N. Trost, Daniel Zitomer, Natalia Gutiérrez Rodríguez and Jennifer B. Dunn*



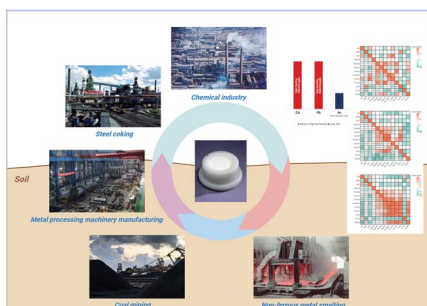
534



Rate of weathering of Cold Lake Blend diluted bitumen at different water temperatures taking into consideration uncontrolled environmental factors

Thomas King,* Brian Robinson, Jennifer Mason and Michel Boufadel

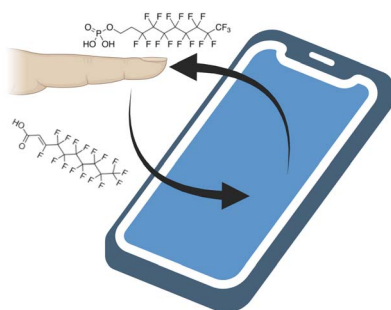
543



Kinetic characteristics of heavy metals in soils in urban derelict contaminated lands

Yiming Sun, Yanying Li, Qiuyu Rong, Lan Wei and Qingbao Gu*

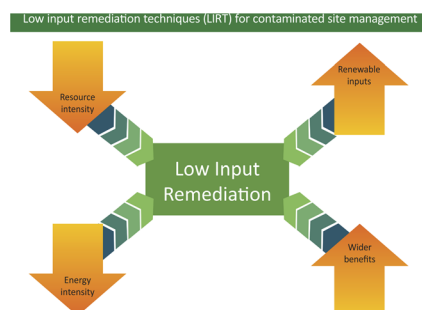
556



Assessing per- and polyfluoroalkyl substance (PFAS) exposure from cell phone contact

Sierra T. Peskett, Salma A. Abu Odeh and Amy A. Rand*

567



Low input remediation techniques for contaminated site management

Paul Bardos,* Jinyu Lai, Lisa Pizzol, Antonio Sellitri, Nazaré Couto, Virginie Derycke, Dominique Guyonnet, Timothy M. Vogel, Jurate Kumpiene and Andrew Cundy



591

Spatial analysis of human fecal waste in rural Oromia, Ethiopia: biomethane and nutrient recovery potential

Thomas Ayalew Abebe,* Semella Sebastian and Gudina Terefe Tucho

