

To new beginnings and a better alternative

David M. Cwiertny

David M. Cwiertny, Editor-in-Chief of *Environmental Science: Water Research & Technology*, introduces the inaugural issue.

Meet the *Environmental Science: Water Research & Technology* Board Members

Profiles of the *Environmental Science: Water Research & Technology* Editorial Board Members.

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The water energy food nexus – challenges and emerging solutions

John Machell, Kevin Prior, Richard Allan
and John M. Andresen

Water, energy and food are the pillars upon which society can further advance. This note outlines some of the challenges and emerging solutions.

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Pitfalls and progress: a perspective on achieving sustainable sanitation for all

Michael R. Templeton

This article provides a perspective on the reasons behind why we have not yet achieved sustainable sanitation for all, *i.e.* universal access to some form of improved toilet and sludge management services, and presents research needs and strategies for moving closer to this goal.

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Bioelectrochemical systems for nitrogen removal and recovery from wastewater

M. Rodríguez Arredondo, P. Kuntke,* A. W. Jeremiasse,
T. H. J. A. Sleutels, C. J. N. Buisman and A. ter Heijne

Removal of nitrogen compounds from wastewater is essential to prevent pollution of receiving water bodies. Bioelectrochemical systems enable energy-efficient nitrogen removal and even recovery of ammonia from wastewaters.

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Combined biological and abiotic reactions with iron and Fe(III)-reducing microorganisms for remediation of explosives and insensitive munitions (IM)

Jolanta B. Niedźwiecka and Kevin T. Finneran*

Military explosives and insensitive munitions (IM) are a significant hazard to all natural and engineered environments.

Quantification of corrosion inhibitors used in the water industry for steam condensate treatment: the indirect electroanalytical sensing of morpholine and cyclohexylamine

Athanasios V. Kolliopoulos, Jonathan P. Metters and Craig E. Banks*

Corrosion inhibitors are widely used in the water industry for steam condensate treatment.

Microbial capacitive desalination for integrated organic matter and salt removal and energy production from unconventional natural gas produced water

Casey Forrestal, Zachary Stoll, Pei Xu* and Zhiyong Jason Ren*

An integrated microbial capacitive desalination system removed both organic contaminants and salts from unconventional natural gas produced water with positive energy production.

Anaerobic membrane bioreactor treatment of domestic wastewater at psychrophilic temperatures ranging from 15 °C to 3 °C

A. L. Smith, S. J. Skerlos and L. Raskin*

This paper demonstrates the viability of anaerobic membrane bioreactors (AnMBRs) for domestic wastewater treatment at temperatures as low as 6 °C.

Inactivation kinetics and mechanisms of viral and bacterial pathogen surrogates during urine nitrification

Heather N. Bichel, Ariane Schertenleib, Alexandra Fumasoli, Kai M. Udert and Tamar Kohn*

Biological nitrification stabilizes nutrients in urine for fertilizer production but is insufficient as a stand-alone technology for sanitization of source-separated urine.

Graphene in the Fe₃O₄ nano-composite switching the negative influence of humic acid coating into an enhancing effect in the removal of arsenic from water

Blain Paul,* Vyom Parashar and Ajay Mishra

The humic acid coating was influenced by graphene in the Fe₃O₄ nano-composite, which turned out to be an enhancing effect in the removal of arsenic from water.

Modified guar gum/SiO₂: development and application of a novel hybrid nanocomposite as a flocculant for the treatment of wastewater

Sagar Pal,* Abhay Shankar Patra, Soumitra Ghorai, Amit Kumar Sarkar, Raghunath Das and Supriyo Sarkar

The hybrid nanocomposite g-GG/SiO₂ showed excellent flocculation efficiency, which is a powerful alternative to the literature known flocculants.

Phosphate removal using modified Bayoxide® E33 adsorption media

Jacob Lalley, Changseok Han, Gayathri Ram Mohan, Dionysios D. Dionysiou, Thomas F. Speth, Jay Garland and Mallikarjuna N. Nadagouda*

Newly developed surface-modified Bayoxide® E33 showed potential for phosphate removal applications.

Analysis and understanding of amido black 10B dye degradation in aqueous solution by electrocoagulation with the conventional oxidants peroxomonosulfate, peroxydisulfate and hydrogen peroxide

Kadarkarai Govindan,* Mohan Raja, Subramanian Uma Maheshwari and Michael Noel

Degradation of amido black 10B dye by electrocoagulation processes assisted by conventional oxidants: peroxomonosulfate, peroxydisulfate and hydrogen peroxide.