

EDITORIAL

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A new year at *Environmental Science: Water Research & Technology*

David M. Cwiertny

David Cwiertny, Editor-in-Chief of *Environmental Science: Water Research & Technology*, welcomes you to the first issue of 2018.

CRITICAL REVIEWS

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Aerobic granulation for future wastewater treatment technology: challenges ahead

S. J. Sarma* and J. H. Tay*

Aerobic granules were discovered around 20 years back.

CRITICAL REVIEWS

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A review of sanitation technologies to achieve multiple sustainable development goals that promote resource recovery

Kevin D. Orner* and James R. Mihelcic

This study critically reviews literature and provides material flows of nitrogen, phosphorus, and carbon to determine the ability of existing sanitation technologies and strategies that can be deployed to safely recover resources and thus achieve multiple sustainable development goals.

COMMUNICATION

33

Capacitive deionization for nutrient recovery from wastewater with disinfection capability

Zheng Ge, Xi Chen, Xia Huang and Zhiyong Jason Ren*

This study demonstrates that capacitive deionization can be effectively used for the removal and recovery of dominant nitrogen (ammonium) and phosphorus (phosphate salts) species present in wastewater.

PAPERS

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Mitigating oil spills in the water column

Edward Barry, Joseph A. Libera, Anil U. Mane, Jason R. Avila, David DeVitis, Keith Van Dyke, Jeffrey W. Elam* and Seth B. Darling*

The scale and scope of uncontrolled oil spills can be devastating.

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Effect of PAC particle layer on the performance of gravity-driven membrane filtration (GDM) system during rainwater treatment

A. Ding, J. Wang, D. Lin, X. Cheng, H. Wang, L. Bai, N. Ren, G. Li and H. Liang*

The gravity-driven membrane filtration (GDM) process is very suitable for decentralized drinking water or rainwater treatment due to low maintenance (no backwashing, physical flushing and chemical cleaning) and low energy consumption.

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Electrochemical deposition for the separation and recovery of metals using carbon nanotube-enabled filters

Megan P. O'Connor, Riley M. Coulthard and Desiree L. Plata*

A carbon-nanotube enabled electrochemical filter was developed to separate and recover metals from mixed metal waste streams.

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Methane-driven microbial fuel cells recover energy and mitigate dissolved methane emissions from anaerobic effluents

Siming Chen and Adam L. Smith*

The effluents of mainstream anaerobic treatment processes such as anaerobic membrane bioreactors (AnMBRs) contain dissolved methane that represents a large fraction of the available energy (approximately 50% at 15 °C) and a significant greenhouse gas (GHG) emission if released to the atmosphere.

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Rapid nitrite production *via* partial denitrification: pilot-scale operation and microbial community analysis

Zheng Si, Yongzhen Peng, Anming Yang, Shujun Zhang, Baikun Li, Bo Wang and Shuying Wang*

Achieving nitrite accumulation *via* partial denitrification (PD) is a novel technique to supply sufficient nitrite for the anammox process which is used to treat carbon-limited wastewater.

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Characterization of urea hydrolysis in fresh human urine and inhibition by chemical addition

Hannah Ray,* Daniella Saetta and Treavor H. Boyer

This research tested acids, metals, and fluoride as inhibitors for urea hydrolysis in both real and synthetic, fresh human urine.