

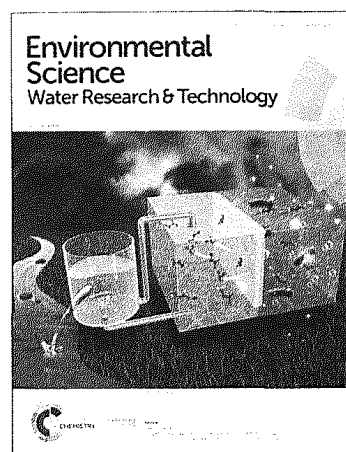
Environmental Science Water Research & Technology

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IN THIS ISSUE

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See Zhen He *et al.*,
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Technol.*, 2019, 5, 19.

EDITORIAL

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A journal with real impact: responsive, reliable, and thought-provoking

Paige J. Novak*

Paige J. Novak summarizes recent news from *Environmental Science: Water Research & Technology* and looks forward to further developments in 2019.



Paige Novak

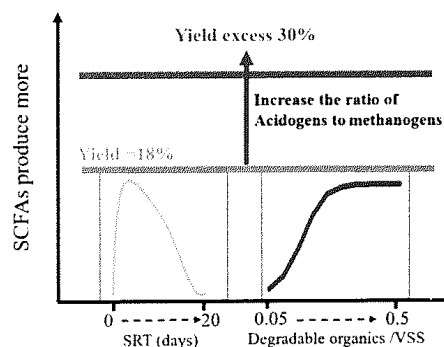
COMMUNICATION

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Short-chain fatty acid (SCFA) production maximization by modeling thermophilic sludge fermentation

Zhiqiang Zuo, Min Zheng,* Huilei Xiong, Hanchang Shi, Xia Huang and Yanchen Liu*

Devising a model to optimize organic and microbial community inputs, temperature and solid retention time for production of more short-chain fatty acids.

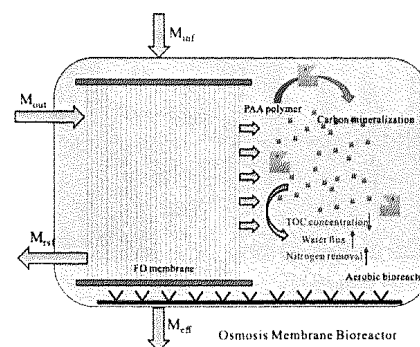


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Mitigation of solute buildup by using a biodegradable and reusable polyelectrolyte as a draw solute in an osmotic membrane bioreactor

Yuli Yang, Hailiang Song and Zhen He*

Biodegradable draw solutes can help alleviate the accumulation of draw solutes in an osmotic membrane bioreactor through biodegradation, and thus achieve better water recovery and contaminant removal.

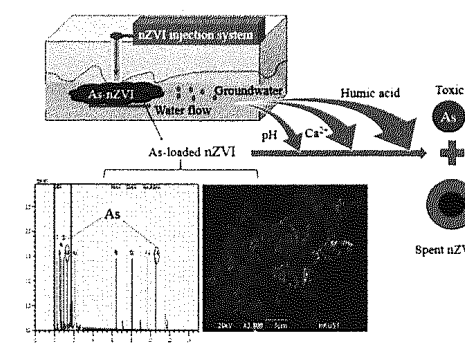


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Effects of geochemical conditions, surface modification, and arsenic (As) loadings on As release from As-loaded nano zero-valent iron in simulated groundwater

Zhigang Yu, Junyi Huang, Liming Hu, Weilan Zhang* and Irene M. C. Lo*

This manuscript makes a significant research impact regarding the fate of As-loaded nZVI particles under different geochemical conditions of groundwater downstream.

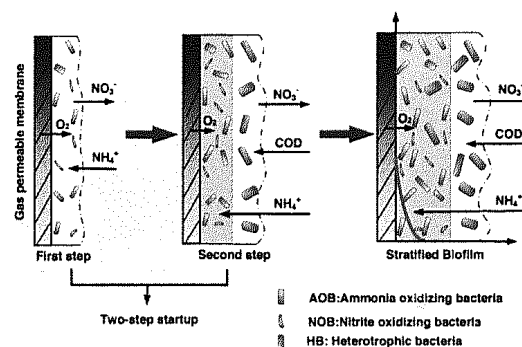


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Two-step startup improves pollutant removal in membrane-aerated biofilm reactors treating high-strength nitrogenous wastewater

Rongchang Wang,* Xu Zeng, Yanan Wang, Tong Yu and Zbigniew Lewandowski

MABRs with a two-step startup facilitate the formation of layered distribution of nitrifiers and denitrifiers and have higher pollutant removal rates.

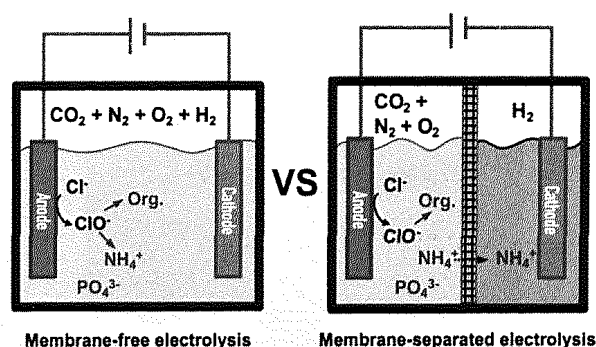


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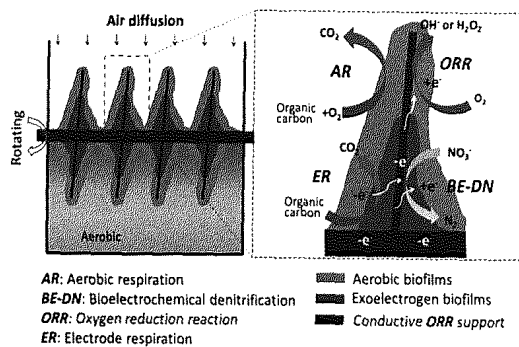
Membrane-separated electrochemical latrine wastewater treatment

Yang Yang, Lin Lin, Leda Katebian Tse, Heng Dong, Shaokun Yu and Michael R. Hoffmann*

Membrane electrolysis is shown to be durable over one month of continuous operation.



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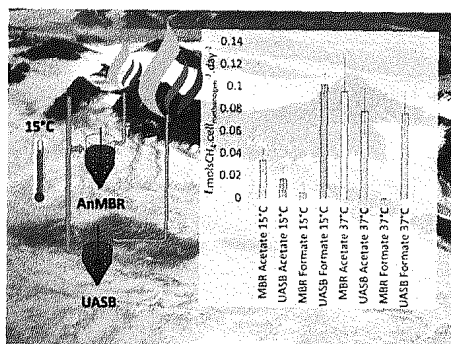


Aerobic microbial electrochemical technology based on the coexistence and interactions of aerobes and exoelectrogens for synergistic pollutant removal from wastewater

Shuiliang Chen,* Robert Keith Brown, Sunil A. Patil, Katharina J. Huber, Jörg Overmann and Uwe Schröder

A new concept of aerobic microbial electrochemical technology allowed combining the merits of both aerobes and exoelectrogens at the same solid-liquid interface for efficient and synergistic pollutants removal from wastewater.

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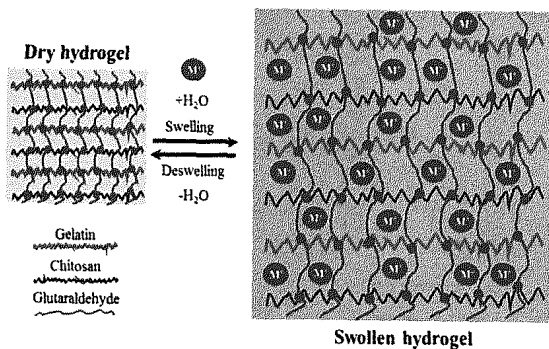


High rate domestic wastewater treatment at 15 °C using anaerobic reactors inoculated with cold-adapted sediments/soils – shaping robust methanogenic communities

Evangelos Petropoulos,* Yongjie Yu, Shamas Tabraiz, Aminu Yakubu, Thomas P. Curtis and Jan Dolting

To choose the reactor format in which to employ a low temperature adapted seed for wastewater treatment, we compared a UASB and an AnMBR_{UASB (UF)} reactor at low HRT and temperature (15 °C).

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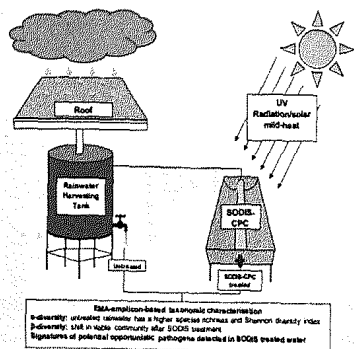


Gelatin-chitosan hydrogel particles for efficient removal of Hg(II) from wastewater

Saifullah Lone,* Dong Ho Yoon, Hyangmoo Lee and In Woo Cheong*

Composite hydrogel particles synthesized by crosslinking of gelatin and chitosan are examined for the adsorption of Hg(II) metal ions in an aqueous medium. This work reports a straightforward, robust, scalable, and environment-friendly approach towards easy monitoring and removal of heavy metal ions from aqueous mixtures.

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EMA-amplicon-based taxonomic characterisation of the viable bacterial community present in untreated and SODIS treated roof-harvested rainwater

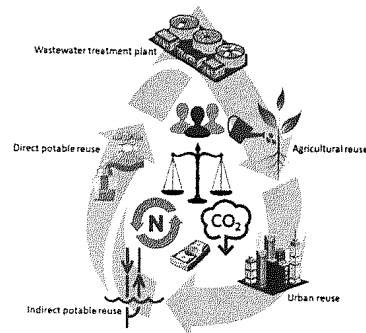
André Strauss, Brandon Reyneke, Monique Waso, Thando Ndlovu, Casparus J. Brink, Sehaam Khan and Wesal Khan*

Illumina next generation sequencing coupled with ethidium monoazide bromide (EMA) was used to characterise and compare the viable bacterial community present in roof-harvested rainwater pre- and post-treatment.

A multi-criteria sustainability assessment of water reuse applications: a case study in Lakeland, Florida

Nader Rezaei, Nancy Diaz-Elsayed, Shima Mohebbi, Xiongfei Xie and Qiong Zhang*

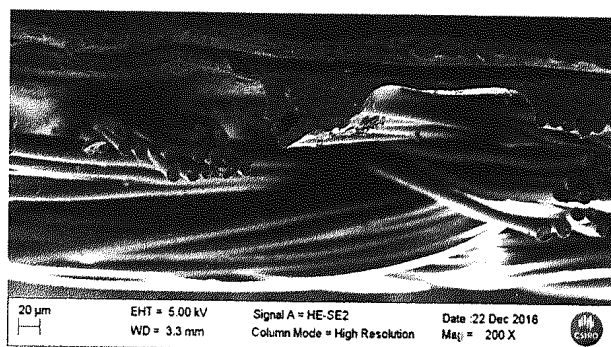
Alternative water reuse applications were evaluated while considering a holistic sustainability perspective that accounted for environmental, economic, and social dimensions.



Depletion of VOC in wastewater by vacuum membrane distillation using a dual-layer membrane: mechanism of mass transfer and selectivity

Jianhua Zhang,* Na Li, Derrick Ng, Ikechukwu A. Ike, Zongli Xie and Stephen Gray*

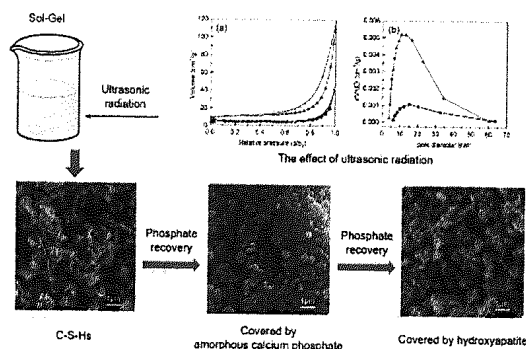
Mechanism of the organic selectivity and mass transfer resistance of the dual-layer membrane in vacuum membrane distillation.



Phosphate recovery from wastewater using calcium silicate hydrate (C-S-H): sonochemical synthesis and properties

Zhihao Zhang, Xuejiang Wang* and Jianfu Zhao

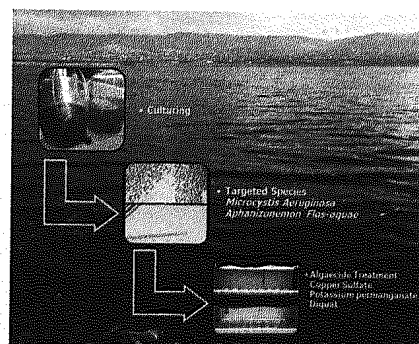
We developed a novel sonochemical method for the synthesis of single-phase C-S-H at room temperature and investigated the structure and phosphate recovery properties of C-S-H.



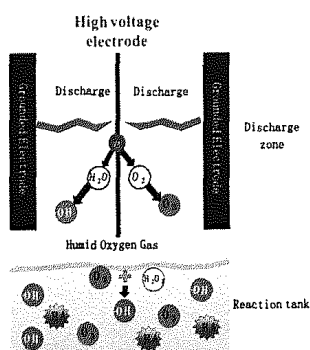
Quantifying the efficacy of diquat dibromide in controlling *Microcystis aeruginosa* and *Aphanizomenon flos-aquae* in comparison to copper sulfate and potassium permanganate

Sara Dia, Ibrahim Alameddine* and Mutasem El-Fadel

Cyanobacterial harmful algal blooms (HABs) are an emerging problem worldwide, affecting many important freshwater systems.



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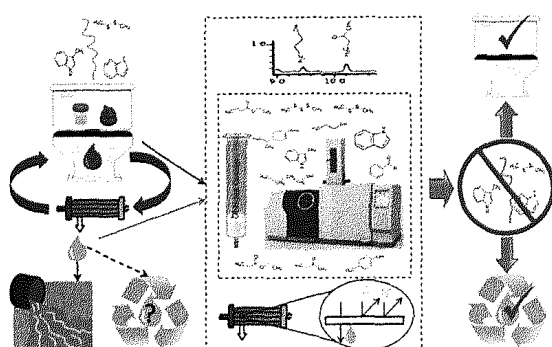


Humic acid removal by gas-liquid interface discharge plasma: performance, mechanism and comparison to ozonation

Y. Cui, J. Yu,* M. Su, Z. Jia, T. Liu, G. Oinuma and T. Yamauchi

A novel advanced oxidation process (AOP) based on plasma in gas-liquid interface discharge was evaluated for humic acid removal. Much better performance was obtained compared to ozonation. The OH^\cdot radicals generated by reaction of *in situ* produced ozone and H_2O_2 during discharge process were mainly responsible for the removal.

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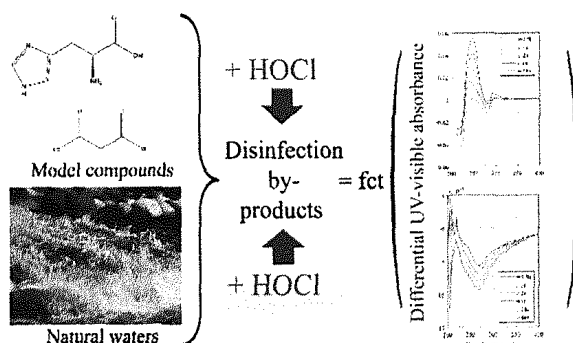


Quantification of liquid phase faecal odourants to evaluate membrane technology for wastewater reuse from decentralised sanitation facilities

E. Mercer, C. J. Davey, P. Campo, D. Fowler, L. Williams, A. Kolios, A. Parker, S. Tyrrel, C. Walton, E. Cartmell, M. Pidou and E. J. McAdam*

A liquid phase method to treat faecal odourants at source using membrane technology, consequently encouraging facility and water reuse acceptance.

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Understanding the behaviour of UV absorbance of natural waters upon chlorination using model compounds

Nicolas Beauchamp,* Caetano Dorea, Christine Beaulieu, Christian Bouchard and Manuel Rodriguez

This paper is the first to assess the chemical structures responsible for specific changes observed in the shape of the UV-visible absorbance spectra, and their relationship to disinfection by-products.