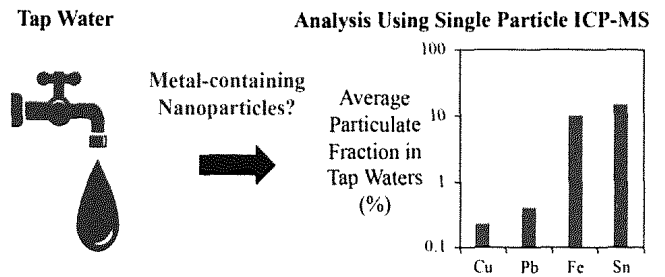


1923

Using single-particle ICP-MS for monitoring metal-containing particles in tap water

Arjun K. Venkatesan,* Blanca T. Rodríguez, Aurelie R. Marcotte, Xiangyu Bi, Jared Schoepf, James F. Ranville, Pierre Herckes and Paul Westerhoff

This study provides the feasibility of using a single-particle ICP-MS technique for convenient and routine monitoring of engineered nanomaterials in tap water.

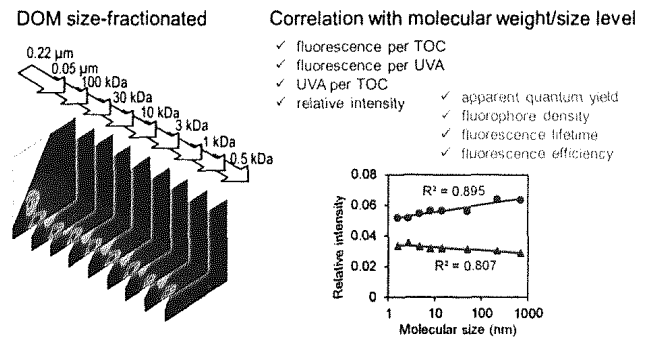


1933

Correlating fluorescence spectral properties with DOM molecular weight and size distribution in wastewater treatment systems

Kang Xiao,* Yuexiao Shen, Jianyu Sun, Shuai Liang, Huiju Fan, Jihua Tan, Xiaomao Wang, Xia Huang* and T. David Waite

By systematically exploring the EEM spectra, some fluorescence variables are found to correlate with the molecular weight/size (MW) levels of DOM and may usefully reflect the MW in wastewater treatment systems.

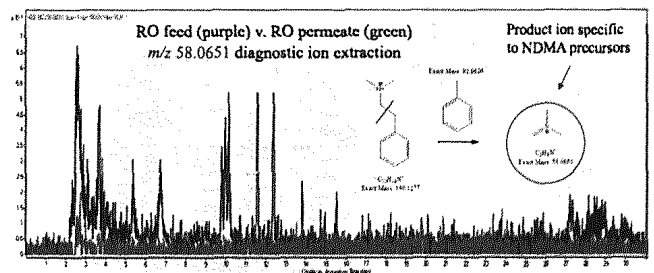


1944

Non-target mass spectrometry analysis of NDMA precursors in advanced treatment for potable reuse

Shannon L. Roback,* Imma Ferrer, E. Michael Thurman, Kenneth P. Ishida, Megan H. Plumlee, Andrew Poustie, Paul Westerhoff and David Hanigan

Non-target high-resolution mass spectrometry was used to track the occurrence and removal of NDMA precursors during advanced treatment for reuse.

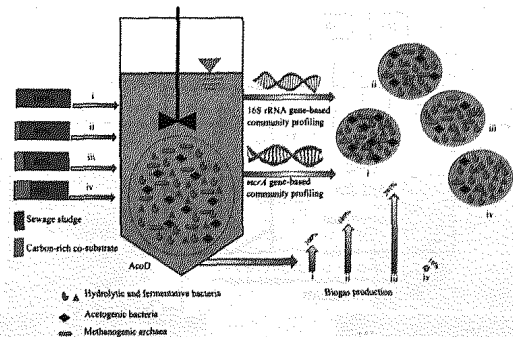


1956

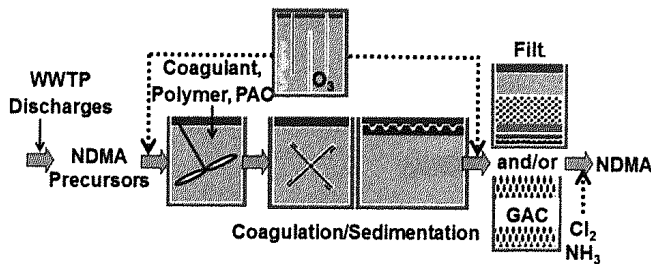
Impact of anaerobic co-digestion between sewage sludge and carbon-rich organic waste on microbial community resilience

Anh Q. Nguyen, Richard Wickham, Luong N. Nguyen, Hop V. Phan, Brendan Galway, Heriberto Bustamante and Long D. Nghiem*

This study examines the changes in microbial community diversity and structure in response to anaerobic co-digestion (AcoD) between sewage sludge and a carbon-rich organic waste.



1966

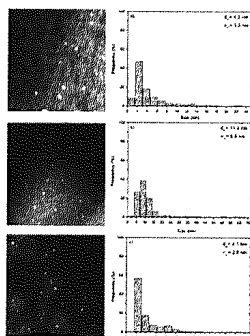


Behavior of NDMA precursors at 21 full-scale water treatment facilities

Stuart W. Krasner,* Paul Westerhoff, William A. Mitch, David Hanigan, Daniel L. McCurry and Urs von Gunten

A source-to-tap evaluation of the origin and fate of chloramination *N*-nitrosodimethylamine (NDMA) precursors at 21 full-scale drinking water plants was conducted.

1979

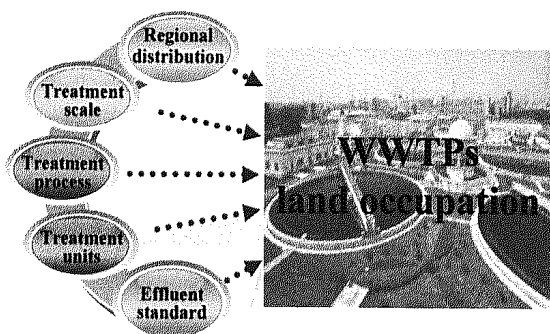


Exploration of the treatment of fish-canning industry effluents by aqueous-phase reforming using Pt/C catalysts

A. S. Oliveira, J. A. Baeza, L. Calvo,* N. Alonso-Morales, F. Heras, J. Lemus, J. J. Rodriguez and M. A. Gilarranz

In the current work, an exploratory study on the application of catalytic aqueous phase reforming (APR) to the treatment of fish-canning wastewater was performed for the first time.

1988

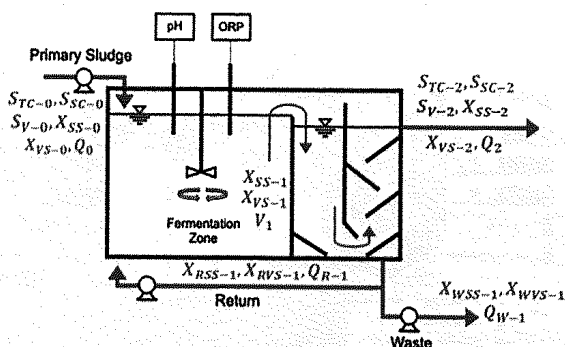


Assessment of land occupation of municipal wastewater treatment plants in China

Yan He,* Yishuang Zhu, Jinghan Chen, Minsheng Huang,* Guohua Wang, Weiguo Zou, Pan Wang and Gongming Zhou

The tense deficiency of available land resources is becoming one of the bottlenecks in dealing with wastewater treatment plant (WWTP) management issues.

1997



Estimation of biokinetic parameters in the acid fermentation of primary sludge using an anaerobic baffled reactor

Allen Kurniawan, Yanuar Chandra Wirasembada, Ki Young Park, Young Mo Kim, Jin Hur and Jinwoo Cho*

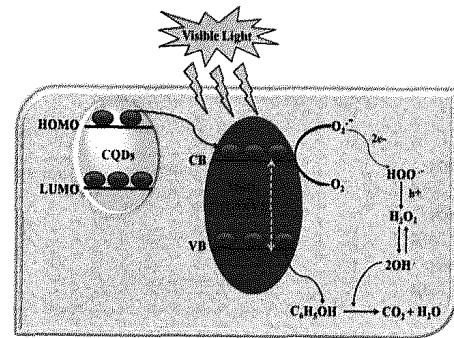
Biokinetic models of anaerobic baffled reactor (ABR) type-acid fermentation with a short hydraulic retention time (HRT) of four days were proposed for obtaining high concentrations of volatile fatty acids (VFAs) based on the dynamic microbial growth rate.

2012

Fluorescent carbon dot decorated MnO_2 nanorods for complete photomineralization of phenol from water

Akansha Mehta, Amit Mishra and Soumen Basu*

Using MnO_2 @CQDs the photocatalytic degradation of phenol was tested and under optimum operational parameters, phenol degradation efficiency was found to be $\sim 90\%$ with a high rate constant $R = 0.029 \text{ min}^{-1}$.

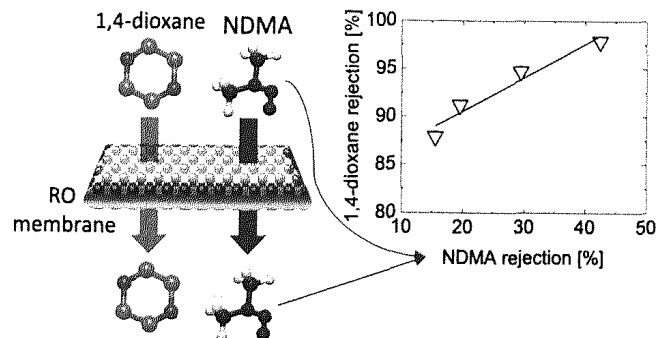


2021

Online monitoring of *N*-nitrosodimethylamine for the removal assurance of 1,4-dioxane and other trace organic compounds by reverse osmosis

Takahiro Fujioka,* Hitoshi Kodamatani, Haruka Takeuchi, Hiroaki Tanaka and Long D. Nghiem

Online monitoring of *N*-nitrosodimethylamine (NDMA) during reverse osmosis (RO) treatment was effective in ensuring the removal of trace organic chemicals, particularly 1,4-dioxane.

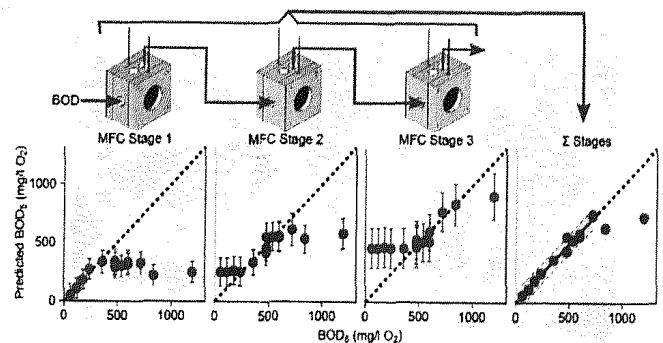


2029

Extending the dynamic range of biochemical oxygen demand sensing with multi-stage microbial fuel cells

Martin W. A. Spurr, Eileen H. Yu, Keith Scott and Ian M. Head*

With multi-stage MFCs the dynamic sensing range for BOD can be significantly increased allowing for monitoring of higher strength wastewaters.

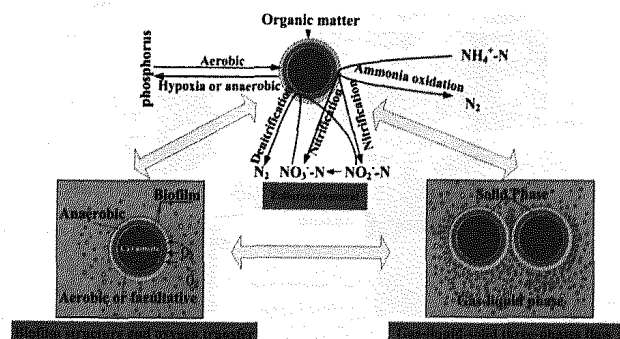


2041

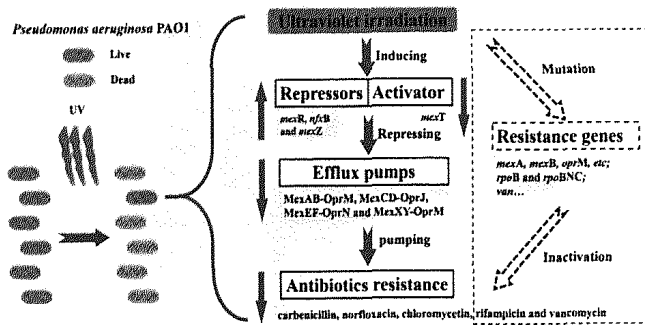
Effect of aeration rates on hydraulic characteristics and pollutant removal in an up-flow biological aerated filter

Jiehui Ren, Wen Cheng,* Tian Wan, Min Wang and Meng Jiao

Aeration rates could improve the pollutant removal by forming the suitable distribution of flow field, dissolved oxygen and microbial community.



2051

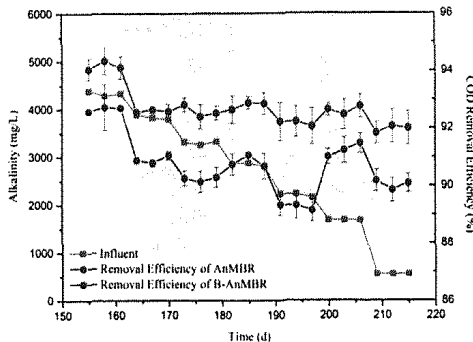


Ultraviolet irradiation sensitizes *Pseudomonas aeruginosa* PAO1 to multiple antibiotics

Fuzheng Zhao, Qing Hu, Hongqiang Ren and Xu-Xiang Zhang*

UV irradiation disturbs the regulatory system of efflux pump proteins to sensitize *P. aeruginosa* to multiple antibiotics. The increasing susceptibility to rifampicin and vancomycin might be caused by UV-mediated mutations in antibiotic resistance genes.

2058



Effect of bamboo charcoal amendment on an AnMBR in the aspect of anaerobic habitat and membrane fouling

Lu Ye, Tian Xia, Hui Chen, Liangliang Ling, Xiangyang Xu, Pedro J. J. Alvarez and Liang Zhu*

The effect of bamboo charcoal (BC) amendment on the anaerobic habitat such as alkalinity and membrane fouling in an anaerobic membrane bioreactor (AnMBR) was investigated in this study.

2070

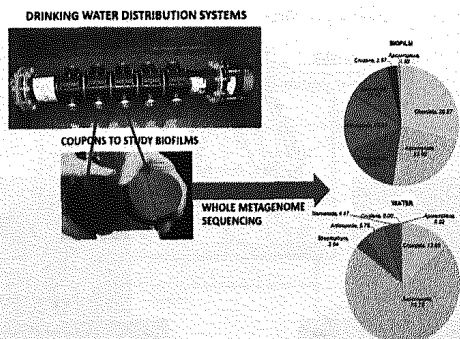


Cellulose-based water purification using paper filters modified with polyelectrolyte multilayers to remove bacteria from water through electrostatic interactions

Anna Ottenhall,* Jonatan Henschen, Josefin Illergård and Monica Ek*

Bacteria are removed from contaminated waters through adsorption onto the modified cellulose fiber surface in paper filters with pores larger than the bacteria.

2080



Whole metagenome sequencing of chlorinated drinking water distribution systems

Isabel Douterelo,* Carolina Calero-Preciado, Victor Soria-Carrasco and Joby B. Boxall

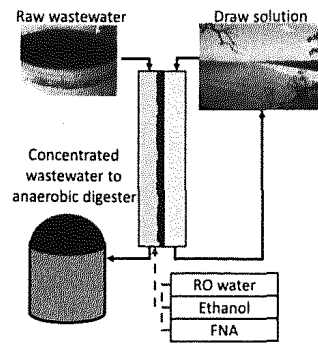
This research highlights the potential of whole metagenome sequencing to help protect drinking water quality and safety.

2092

Evaluating the membrane fouling formation and chemical cleaning strategy in forward osmosis membrane filtration treating domestic sewage

Nur Hafizah Ab Hamid, Liu Ye,* David K. Wang, Simon Smart, Emmanuelle Filloux, Thibault Lebouteiller and Xiwang Zhang

Free nitrous acid (FNA) shows strong potential as an effective cleaning reagent in fouling control in a forward osmosis filtration system, with a relatively longer time required.

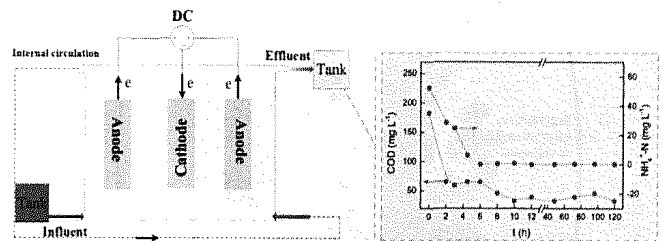


2104

Organic and nitrogen load removal from bio-treated landfill leachates by a dual-anode system

Jing Ding, Junqiu Jiang, Liangliang Wei, Yuxuan Geng, Qingliang Zhao,* Yixing Yuan and Dionysios D. Dionysiou*

An efficient dual-anode system integrating anodic oxidation and electrocoagulation was developed for the removal of pollutants from bio-treated landfill leachate.

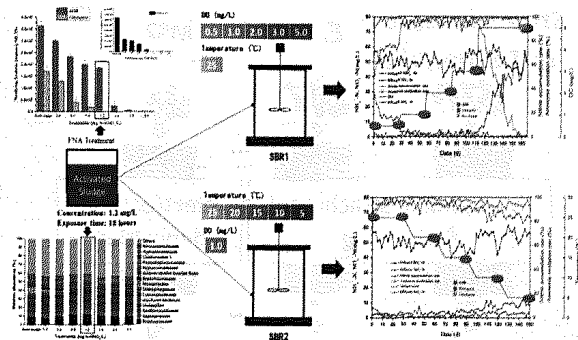


2113

Comprehensive assessment of free nitrous acid-based technology to establish partial nitrification

Cancan Jiang, Shengjun Xu, Rui Wang, Sining Zhou, Shanghua Wu, Xiangui Zeng, Zhihui Bai, Guoqiang Zhuang and Xuliang Zhuang*

Treating activated sludge with free nitrous acid (FNA) to selectively eliminate nitrite-oxidizing bacteria (NOB) and retain ammonium-oxidizing bacteria (AOB) is increasingly regarded as a promising technology for achieving partial nitrification.

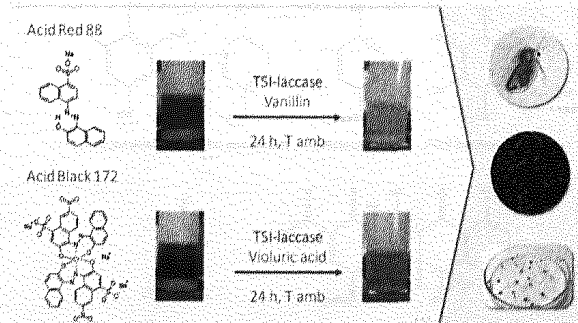


2125

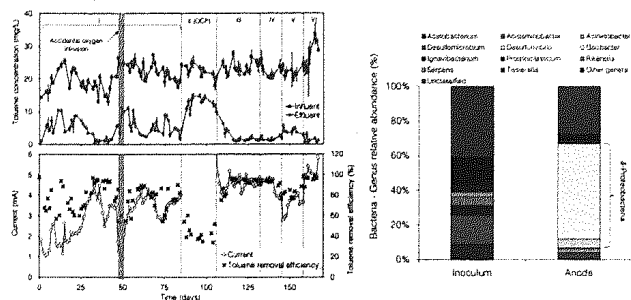
Biodegradation of acid dyes by an immobilized laccase: an ecotoxicological approach

Larissa Gioia,* Karen Ovsejevi, Carmen Manta, Diana Míguez and Pilar Menéndez

An efficient degradation of two azo dyes by the immobilized laccase of *Trametes villosa* and its ecotoxicological assessment are reported.



2136

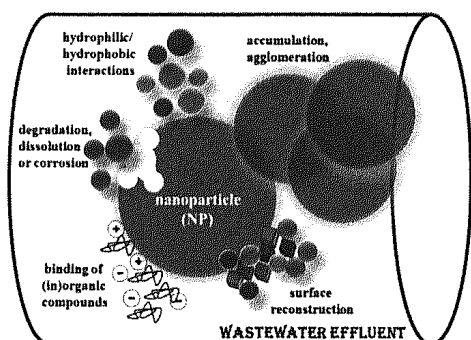


Anaerobic electrogenic oxidation of toluene in a continuous-flow bioelectrochemical reactor: process performance, microbial community analysis, and biodegradation pathways

Enza Palma, Matteo Daglio, Anna Espinoza Tofalos, Andrea Franzetti, Carolina Cruz Vigg, Stefano Fazi, Marco Petrangeli Papini and Federico Aulenta*

High-rate anaerobic oxidation of toluene was achieved in a continuous-flow bioelectrochemical system.

2146

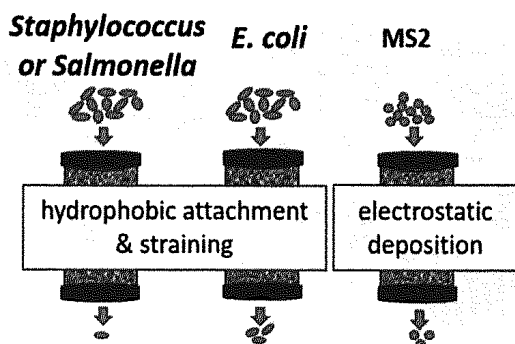


Behavior of silver nanoparticles in wastewater: systematic investigation on the combined effects of surfactants and electrolytes in model systems

Ivona Capjak, Maja Zebić Avdičević, Maja Dutour Sikirić, Darija Domazet Jurašin, Amela Hozić, Damir Pajić, Slaven Dobrović, Walter Goessler and Ivana Vinković Vrček*

pH, electrolytes and surfactants affected the stability of AgNPs in artificial test water system.

2160

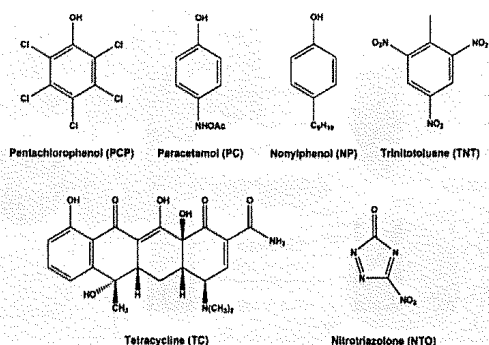


Role of microbial cell properties on bacterial pathogen and coliphage removal in biochar-modified stormwater biofilters

A. R. M. Nabiul Afrooz, Ana K. Pitol, Dianna Kitt and Alexandria B. Boehm*

Bacterial pathogens and pathogen indicators suspended in stormwater are removed to a greater extent in biochar-augmented sand biofilters than sand biofilters; the processes governing the removal are distinct.

2170



Bismuth titanate modified and immobilized TiO₂ photocatalysts for water purification: broad pollutant scope, ease of re-use and mechanistic studies

Gylen Odling, Zhi Yi Pong, Gavin Gilfillan, Colin R. Pulham and Neil Robertson*

Bi₄Ti₃O₁₂-TiO₂ on glass beads photodegrades pollutants including consumer-product precursors, pesticides, drugs and explosives.

2179

Pulsed electrochemical and electroless techniques for efficient removal of Sb and Pb from water

Saba Mosivand,* Lorena M. A. Monzon, Iraj Kazeminezhad, Anup Kumar and J. Michael D. Coey

Two innovative electrochemical approaches for removing both antimony and lead from water using sacrificial iron sheets are reported; a pulsed method for fast coagulation and a slower electroless method with high efficiency, low cost and no requirement for electrical energy. The study covers laboratory samples and mine wastewater.

