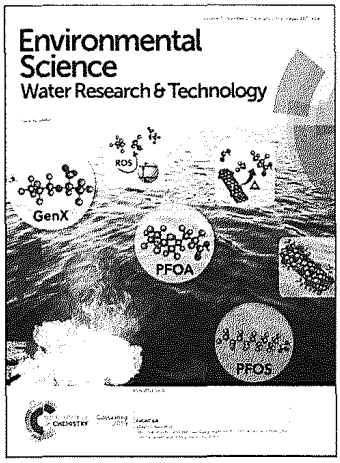
Environmental Science Water Research & Technology

rsc.li/es-water

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.

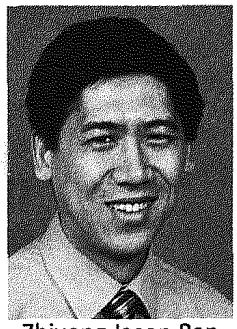
IN THIS ISSUE

ISSN 2053-1400 CODEN ESWRAR 5(2) 187–434 (2019)

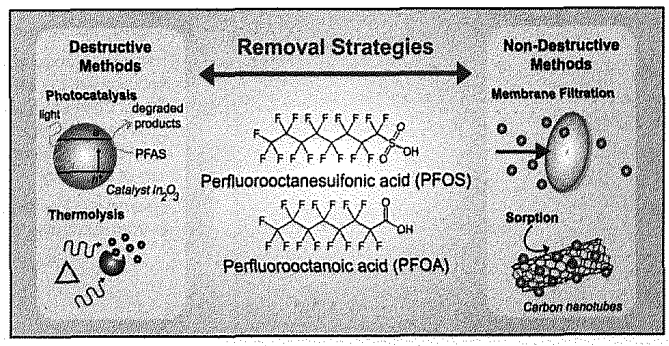


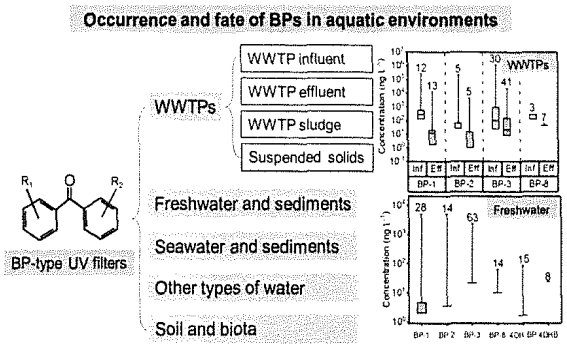
Cover
See Onur G. Apul *et al.*, pp. 198–208.
Image reproduced by permission of Onur G. Apul from *Environ. Sci.: Water Res. Technol.*, 2019, **5**, 198.

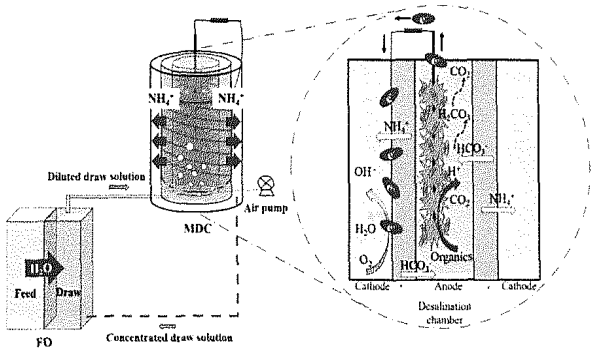
EDITORIAL

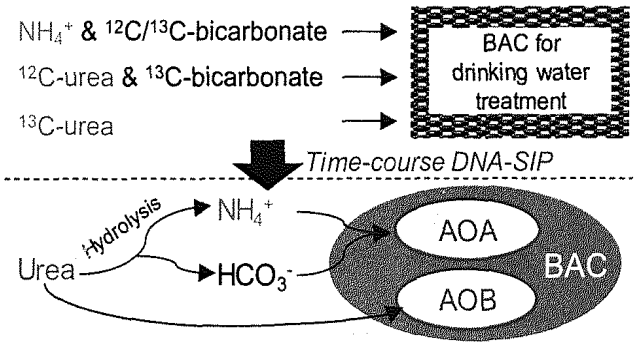

Zhiyong Jason Ren

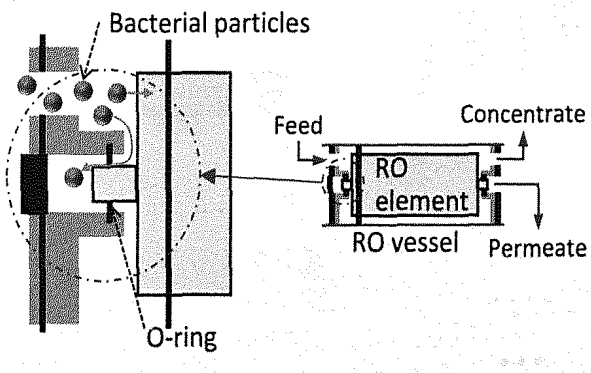
FRONTIER



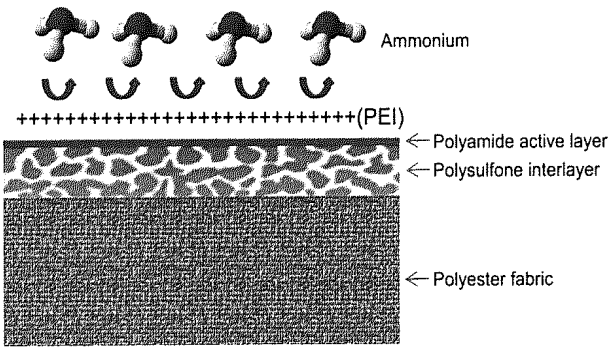








246

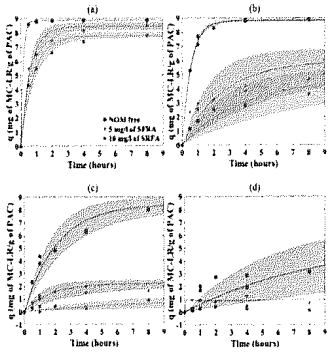


Concentrating ammonium in wastewater by forward osmosis using a surface modified nanofiltration membrane

Shahryar Jafarinejad, Hosung Park, Holly Mayton, Sharon L. Walker and Sunny C. Jiang*

Enhancing ammonium rejection by PEI modification.

256

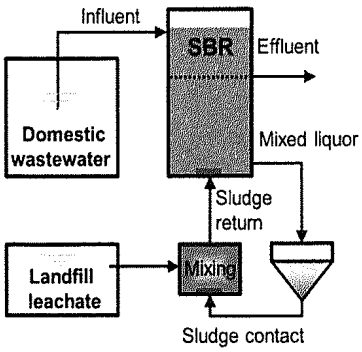


The influence of natural organic matter on the adsorption of microcystin-LR by powdered activated carbon

Asnika Bajracharya, Yen-Ling Liu and John J. Lenhart*

In this study, microcystin-LR (MC-LR) adsorption to four different types of powdered activated carbon (PAC) was evaluated to provide insight into the use of PAC to treat water containing MC-LR.

268

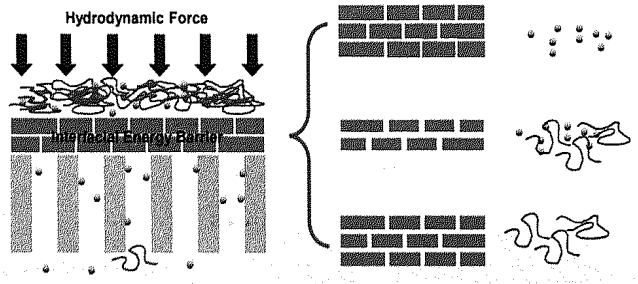


Effect of blending landfill leachate with activated sludge on the domestic wastewater treatment process

Min Zheng, Siqi Li, Qian Dong, Xia Huang and Yanchen Liu*

A sludge contact is proposed to form high-level free ammonia exposure for co-treatment of landfill leachate with domestic wastewater.

277



Ultrafiltration membrane fouling performance by mixtures with micromolecular and macromolecular organics

Kuo Gao, Tian Li,* Junxia Liu, Bingzhi Dong and Huaqiang Chu*

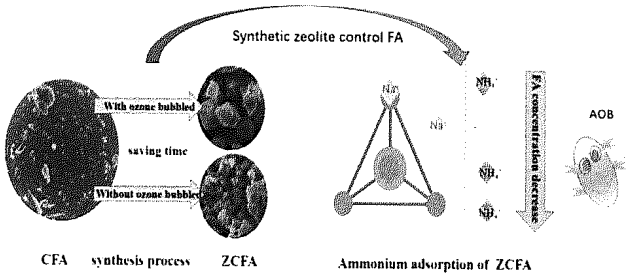
Ultrafiltration membrane fouling caused by mixtures of micromolecules (humic acid, HA) and macromolecules (sodium alginate, SA) was studied in a comprehensive manner.

287

Application of a synthetic zeolite as a storage medium in SBRs to achieve the stable partial nitrification of ammonium

Jing Chen, Xiaojun Wang,* Zhenguo Chen, Xinghui Feng and Xiaokun Chen

Free ammonia (FA) is the growth substrate for ammonia-oxidizing bacteria (AOB), but a high concentration of FA could also inhibit AOB activities.

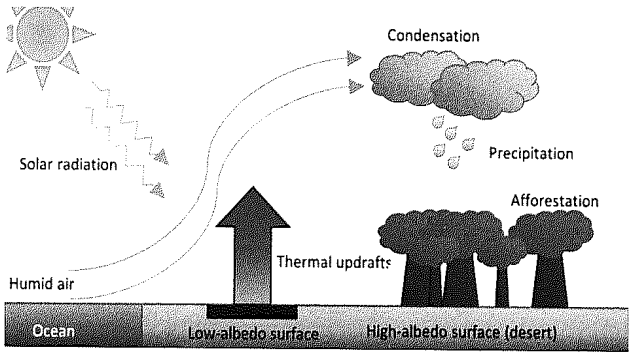


296

Engineering artificial thermal mountains for large-scale water management and carbon drawdown

G. W. Knox,* C. R. McInnes, P. L. Younger and W. T. Sloan

This paper investigates the potential for artificial low-albedo surfaces to induce precipitation, and subsequently, capture carbon.

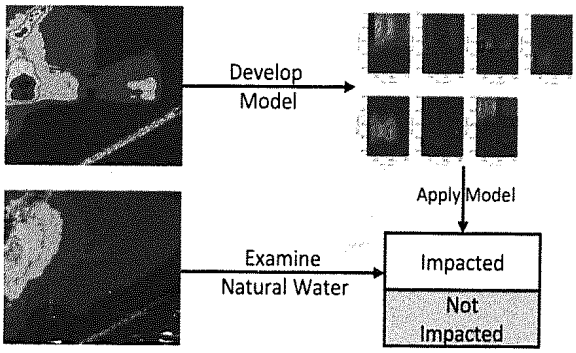


315

Fluorescence excitation emission matrices for rapid detection of polycyclic aromatic hydrocarbons and pesticides in surface waters

Ye Z. Yang,* Nicolás M. Peleato, Raymond L. Legge and Robert C. Andrews

Rapid water quality assessment was evaluated using an automated fluorescence analysis system.

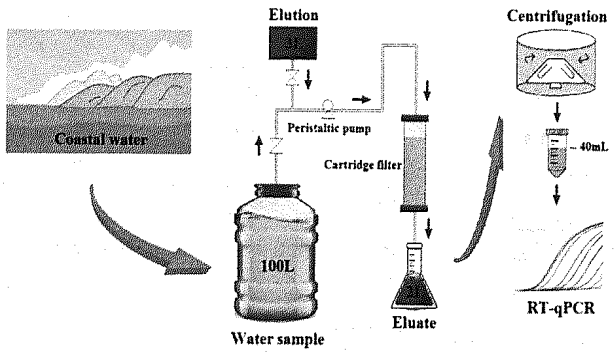


325

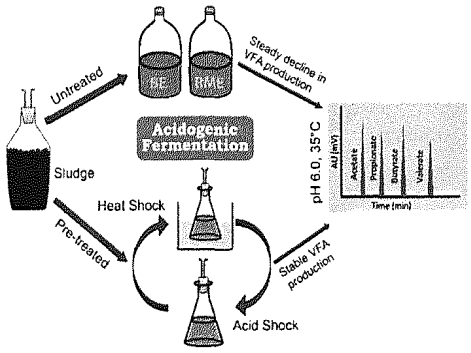
Assessment of an electropositive granule media filter for concentrating viruses from large volumes of coastal water

Jing Miao, Han-Ji Jiang, Zhong-Wei Yang, Dan-yang Shi, Dong Yang, Zhi-Qiang Shen, Jing Yin, Zhi-Gang Qiu, Hua-Ran Wang, Jun-Wen Li and Min Jin*

The EGM filter exhibits virus recovery rates higher than 88% from large volumes of coastal water irrespective of the water quality.



334

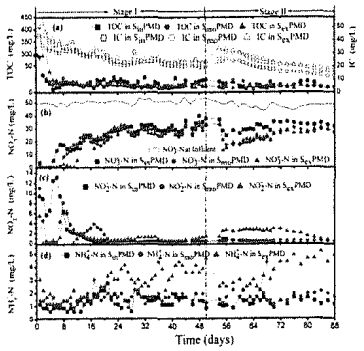


Enhancing the volatile fatty acid production from agro-industrial waste streams through sludge pretreatment

U. Jayakrishnan, Deepmoni Deka and Gopal Das*

Acidogenic bioconversion of agro-industrial effluents into potential biopolymer production media was accomplished by sludge modification with subsequent bioprocess assessment.

346

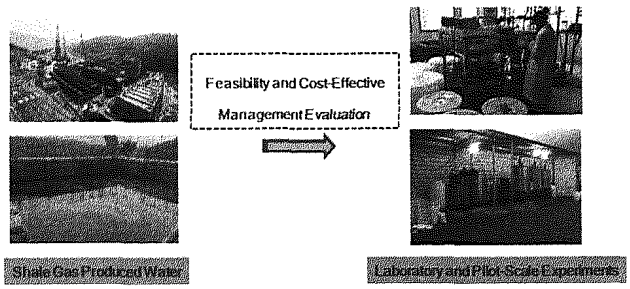


Effect of sawdust dosage and hydraulic retention time (HRT) on nitrate removal in sawdust/pyrite mixotrophic denitrification (SPMD) systems

Shunlong Jin, Chuanping Feng,* Shuang Tong,* Nan Chen, Hengyuan Liu and Jiamin Zhao

Pyrite plays an important role in nitrate-contaminated aquifer remediation.

358

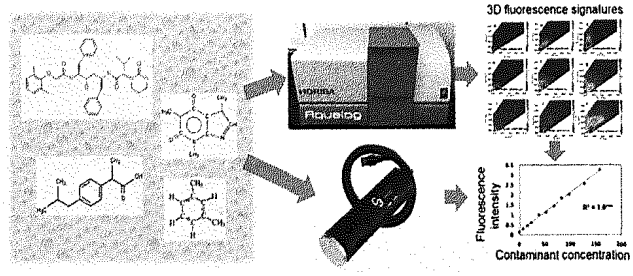


Feasibility evaluation of the treatment and recycling of shale gas produced water: a case study of the first shale gas field in the Eastern Sichuan Basin, China

Zhaoji Zhang,* Yiling Zhuang, Junjie Li, Zejun Zhou and Shaohua Chen*

Laboratory and pilot-scale feasibility evaluation of cost-effective treatment and recycling of shale gas produced water.

370



Assessing the potential of fluorescence spectroscopy to monitor contaminants in source waters and water reuse systems

Joseph Wasswa,* Natalie Mladenov and William Pearce

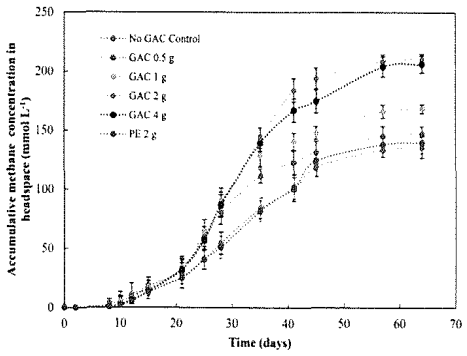
It is of ongoing interest to evaluate real-time instruments for monitoring water contaminants for source water control and water reuse system performance applications.

383

Overcoming ammonia inhibition in anaerobic blackwater treatment with granular activated carbon: the role of electroactive microorganisms

Anna Patrícya Florentino, Ahmed Sharaf, Lei Zhang and Yang Liu*

Methanogenesis and enrichment of microorganisms capable of interspecies electron and/or hydrogen exchange was investigated with addition of granular activated carbon (GAC) to batch anaerobic digesters treating vacuum collected blackwater with high ammonia concentration.

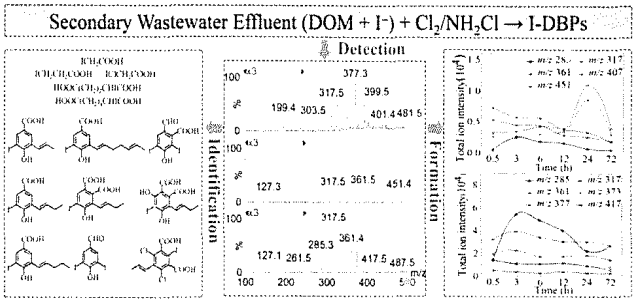


397

Detection, identification and control of polar iodinated disinfection byproducts in chlor(am)inated secondary wastewater effluents

Yan Huang, Yangyang Zhang, Qing Zhou, Aimin Li, Peng Shi, Jingfan Qiu* and Yang Pan*

Disinfection of wastewater effluents could generate numerous toxic disinfection byproducts (DBPs) during wastewater reclamation owing to the complexity of their dissolved organic matter.



406

Inexpensive microbial dipstick diagnostic for nitrate in water

Kelly G. Aukema and Lawrence P. Wackett*

A rapid, inexpensive, bio-strip was developed for visual quantitation of nitrate in water.

417

Fluorescence spectroscopic characterisation of algal organic matter: towards improved *in situ* fluorometer development

Sara I. Khan, Arash Zamyadi, Narasinga Rao Hanumanth Rao, Xiang Li, Richard M. Stuetz and Rita K. Henderson*

Fluorescence based characterisation of the algal organic matter, when combined with cell pigmentation measurements, may improve the specificity and robustness of online fluorometers.