

# Environmental Science Water Research & Technology

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## IN THIS ISSUE

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### Cover

See Amy L. Pochodylo and  
Damian E. Helbling,  
pp. 54-65.  
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Sci.: Water Res. Technol.*,  
2017, 3, 54.

### Inside cover

See Branko Kerkez *et al.*,  
pp. 66-77.  
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from *Environ. Sci.: Water Res.  
Technol.*, 2017, 3, 66.

## PERSPECTIVE

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### A proposed nomenclature for biological processes that remove nitrogen

Max Weißbach, Craig S. Criddle, Jörg E. Drewes  
and Konrad Koch\*

A consistent terminology is proposed to resolve present inconsistencies and to facilitate distinct communication about biological nitrogen removal processes.

## CRITICAL REVIEWS

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### Emerging investigators series: a critical review of decision support systems for water treatment: making the case for incorporating climate change and climate extremes

William J. Raseman, Joseph R. Kasprzyk,\*  
Fernando L. Rosario-Ortiz, Jenna R. Stewart  
and Ben Livneh

We present potential impacts of climate on drinking water treatment and review decision support systems for these utilities.

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**Mining valuable minerals from seawater: a critical review**

Pariyurnanda Loganathan, Gayathri Naidu and Saravanamuthu Vigneswaran\*

Methods of extracting valuable minerals from seawater and seawater brines generated in desalination plants are critically reviewed in this paper.

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**PAPERS**

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**Emerging investigators series: prioritization of suspect hits in a sensitive suspect screening workflow for comprehensive micropollutant characterization in environmental samples**

Amy L. Pochodylo and Damian E. Helbling\*

A suspect screening workflow was developed and applied to a series of samples collected from a small urban water system to identify and confirm the occurrence of 112 organic micropollutants.

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**Emerging investigators series: building a theory for smart stormwater systems**

Abhiram Mullapudi, Brandon P. Wong and Branko Kerkez\*

Smart stormwater systems will transform cities into coordinated and real-time controlled treatment plants.

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**Evaluation of pollutant removal efficiency of a bioretention basin and implications for stormwater management in tropical cities**

Jia Wang, Lloyd H. C. Chua and Peter Shanahan\*

Field-scale bioretention basin performance in treating a full suite of nutrients is critically evaluated in the data-scarce tropics.

**Eukaryotic community diversity and spatial variation during drinking water production (by seawater desalination) and distribution in a full-scale network**

A. Belila, J. El-Chakhtoura,\* P. E. Saikaly,  
M. C. M. van Loosdrecht and J. S. Vrouwenvelder

Characterization of eukaryotic community dominated by fungi for drinking water distribution network fed by reverse osmosis seawater desalination plant.

**Human health trade-offs in the disinfection of wastewater for landscape irrigation: microplasma ozonation vs. chlorination**

Shengkun Dong, Jun Li, Min-Hwan Kim, Sung-Jin Park,  
J. Gary Eden, Jeremy S. Guest\* and Thanh H. Nguyen\*

Microplasma ozonation provided more human health protection than chlorination for irrigational water reuse disinfection.

**Synergistic effect of combined colloidal and organic fouling in membrane distillation: Measurements and mechanisms**

Wenli Qin, Jianhua Zhang, Zongli Xie,\* Derick Ng,  
Ying Ye, Stephen R. Gray and Ming Xie\*

We examined the synergistic effect of combined fouling in MD process with three organic foulants – alginate, bovine serum albumin, and humic acid – in the presence of colloidal silica particles.

**A mechanistic understanding of the degradation of trace organic contaminants by UV/hydrogen peroxide, UV/persulfate and UV/free chlorine for water reuse**

Wei Li, Tushar Jain, Kenneth Ishida and Haizhou Liu\*

Climate change and population growth pose increasing challenges to the availability of freshwater resources.

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**Development of electro-active forward osmosis membranes to remove phenolic compounds and reject salts**

Jingguo Li, Qing Liu, Yanbiao Liu\* and Jianping Xie\*

A composite membrane that integrated forward osmosis with the electro-oxidation process was developed and achieved both effective removal of phenolic compounds (>92% at 2.5 V) and good salt rejection (>98%).

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**Characterization of chemical composition and bacterial community of corrosion scales in different drinking water distribution systems**

Haibo Wang, Chun Hu,\* Lang Yin, Sujia Zhang and Lizhong Liu

There is a relationship between biochemical function and chemical composition of corrosion scales, and  $\text{Fe}_3\text{O}_4$  formation reduced iron release.

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**The role of chloride ions in plasma-activated water treatment processes**

Ghazaleh Haghghat, Amirreza Sohrabi,\* Parmiss Mojir Shaibani, C. W. Van Neste, Selvaraj Naicker and Thomas Thundat

We investigated the role of chlorine ions in the treatment and post treatment stages of non-thermal plasma treatment of water.

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**Mesoporous lignite-coke as an effective adsorbent for coal gasification wastewater treatment**

Hongguang An, Zhenqiang Liu, Xiaoxin Cao,\* Jilin Teng, Wenhua Miao, Junfeng Liu, Ruozheng Li and Peng Li

Mesoporous lignite-coke as an effective adsorbent for high molecular weight refractory compounds in coal gasification wastewater treatment.

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**Correction: Solar thermal decomposition of desalination reject brine for carbon dioxide removal and neutralisation of ocean acidity**

P. A. Davies