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Editorial

Special Issue on Challenges in Biological Wastewater Treatment and Resource Recovery

Based on the report of the United Nations Department of Economic and Social Affairs, the world population is expected to grow from current 7.3 billion to 9.7 billion by 2050, which will increase water stress owing to rising water demand in agriculture, domestic and industrial sectors. The United Nations World Water Development Report has indicated that global water demand is expected to continue increasing by about 1% per year until 2050 and 80% of wastewater has been discharged into the ecosystem without being treated or reused.

To facing the challenges of increasing water demand and ensuring water-food-energy security, advanced biological wastewater treatment technologies have been widely employed to save resource and enhance water supply through the implementation of water recycling and reuse. A number of biological treatment processes have also been further developed and upgraded to utilise or capture useful contents/resources in wastewater (i.e. organics, nutrients and thermal heat). Thus, more recent research studies have been focused on energy production and nutrient recovery from wastewater.

To produce high quality treated water for recycling and reuse as well as to better use energy sources in wastewater, the design and operation of biological wastewater treatment processes are of great importance. Moreover, how to efficiently recover resources from wastewater plays a key role in transforming the traditionally energy-consuming wastewater treatment to a potential energy producer.

After launching the first issue in Mar 2018, the editorial team of Bioresource Technology Reports (BITE B), led by Prof. Duu-Jong Lee, has been putting utmost efforts to make BITEB a high-quality international journal. Being one of the special issues proposed for BITEB, this special issue draws attention to current and future challenges on biological wastewater treatment, as well as issues of resource and nutrient recovery from wastewater.

The types of articles in this special issue include reviews and original research papers, covering a variety of biological treatment processes such as anaerobic treatment, membrane bioreactor, algal technology, microbial fuel cells, microbial electrochemical systems, aerobic granular sludge processes, constructed wetlands and Anammox. Emerging issues addressing resource and energy recovery, energy efficiency, and greenhouse gas production and mitigation during biological wastewater treatment are also well-discussed.

We would like to express our deepest gratitude to the authors and reviewers who have made valuable contributions to this special issue by sharing their knowledge and expertise. We also want to show our sincere appreciation to Prof. Duu-Jong Lee (the Editor-in-Chief), Dr. Adam Fraser (the Publishing Editor), Mr. Leonard Daniel (the Journal Manager), and Ms. Wendy Ye (the SI Content Manager) for their great support in publishing the special issue.

Guest Editors

Wenshan Guo

School of Civil and Environmental Engineering,

University of Technology Sydney, Australia
E-mail address: wguo@uts.edu.au

Zhongfang Lei
Graduate School of Life and Environmental Sciences,
University of Tsukuba, Japan
E-mail address: lei.zhongfang.gu@u.tsukuba.ac.jp

Jie Wang
School of Environmental and Chemical Engineering,
Tianjin Polytechnic University, China
E-mail address: wangjie@tjpu.edu.cn

Dong Wei
School of Resources and Environment,
University of Jinan, China
E-mail address: weidong506@163.com