ICWRER Special Session Proposal

2022 International Conference on Water Resources and Environment Research (ICWRER)

**Special Session Title**

***Nutrient Recycling and Recovery for Smart Water Treatment and Management***

**Session Organizer**

**Chair**

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**Session Description**

As the human population increases and environmental requirements become more stringent, the need for sustainable water management systems that meet regulatory standards and reduce energy consumption has become a top priority in the water industry. In addition, recycling and recovery of nutrient and renewable energy production from wastes are one of major components in future smart cities. This includes novel technologies and their applications for sustainable water and wastewater management and renewable energy productions. Recently, many research projects, such as symbiotic microalgae-bacterial processes for advanced wastewater treatment, renewable biohydrogen production from wastewater, microbial fuel cells (MFCs) for wastewater treatment, and sustainable approach for harmful algal bloom control and nutrient removal, have been initiated and supported by federal and industrial funding agencies, indicating that the urgent need of a vision to synergistically explore the wide-ranging technological advances towards better serving urban residents for smart water management.

Therefore, we propose to organize a special session at the 2022 ICWRER conference by inviting scientists from multidisciplinary research areas to discuss the following topics:

1. Strategies and technologies for nutrient and energy recovery from wastewater
2. Sustainable approaches to remove nutrient and emerging contaminants for smart water and management
3. Advanced material for nutrient removal and pollution control.

Invited Speakers:

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| Invited Speaker | Affiliation | Presentation Title |
| Diana Ordonez  | Department of Civil, Environment, and Construction Engineer, University of Central Florida, USAdiana\_ordonez@Knights.ucf.edu  | Nutrient removal via zero-valent iron based green environmental media (IFGEM) |
| Xiangmeng Ma | School of Resources, Environment and Materials, GuangXi University, China maxiangmeng@gxu.edu.cn   | Enhanced lipid production of microalgae Tetradesmus obliquus FACHB-12 in synthetic wastewater with sustainable carbon recycle |
| Keug-Tae Kim | Department of Environmental & Energy Engineering, University of Suwon, South Koreakkt38@suwon.ac.kr | Nutrient recovery from wastewater treatment  |
| Woo Hyoung Lee | Department of Civil, Environment, and Construction Engineer, University of Central Florida, USAwoohyoung.lee@ucf.edu  | Energy recovery using bioelectrochemical systems in wastewater treatment  |
| Meng Wang  | Department of Energy and Mineral Engineering, Pennsylvania State University, USAmxw1118@psu.edu  | Algae-based resource recovery |