ICWRER Special Session Proposal

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

**Special Session Title**

***Applications of Remote Sensing and Internet of Things (IoT) in Environmental Monitoring***

**Session Organizers**

**Chair**

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**Session Description**

Environmental monitoring and management are activities of global importance. Data derived from the air (or space)-borne sensors and internet of things (IoT) devices are widely used to identify spatial and temporal patterns in the major interrelated global environmental systems (atmosphere, biosphere, water, soil, and urban infrastructures). Remote sensing and IoTs can undertake a wide range of applications for environmental planning and management. These applications include coastal applications, hazard assessments, water management, waste management, greenhouse gas emissions, and pollution control. These analyses all aid in the effective planning and management of the land, water, air, and its resources. Currently, research agencies, including the United States Environmental Protection Agency (US EPA), United States Department of Agriculture (USDA), Environmental Research & Education Foundation (EREF), etc., are looking into advanced remote sensing and IoT technologies for environmental monitoring. For example, US EPA encourages studies in innovative technologies for measuring nutrient pollution in the water and air pollutions using satellites and portable or remote sensors. These technologies enhance current monitoring activities and provide faster and more cost-effective information on nutrients and other pollutants that affect water quality.

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) the application and challenges of remote sensing and IoT technologies for environmental monitoring under the changing climate;

(2) strategies and technologies for monitoring the emerging contaminants in the environment.

Speakers:

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| Invited Speakers | Affiliation | Presentation Title |
| Ni-Bin Chang | Professor, Department of Civil, Environmental, and Construction Engineering, University of Central Florida, Orlando, FL, USA, Email: nchang@ucf.edu | Remote Sensing-based Ecological Assessment of Watershed Canopy Dynamics under Intermittent Extreme Weather Impact |
| Venkataraman Lakshmi | Professor, Engineering Systems and Environment, University of Virginia, Charlottesville, VA, USA, Email: vlakshmi@virginia.edu | Observing the Terrestrial Water Cycle from Space: Era of Big Data to Solve Global Water Problems |
| Hongbo Su | Associate Professor, Department of Civil, Environmental and Geomatics Engineering, Florida Atlantic University, Boca Raton, FL, USA, Email: suh@fau.edu | Developing an IoT Sensor Network for Air Quality Monitoring – a Testbed at FAU Boca Campus |
| Xiaowen Wang | Associate Professor, Faculty of Geoscience and Environmental Engineering, Southwest Jiaotong University, Chengdu, China, Email: insarwxw@swjtu.edu.cn | Remote Sensing of Active Rock Glaciers in Southeastern Tibetan Plateau: Distributions, Kinematics, and Hydrological Significance |
| Patrick Sun | Assistant Professor, Department of Civil, Environmental, and Construction Engineering, University of Central Florida, Orlando, FL, USA, Email: Peng.Sun@ucf.edu | Solid Waste Management and Operation Using Unmanned Aerial Vehicles Sensing Technologies |