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Treatment of Energetic Containing Wastewater in a Sequential Anaerobic-aerobic Membrane Bioreactor (MBR) System: Effectiveness and Microbial Community Dynamics

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ABSTRACT: To address the pressing issue of unintended detonation risks posed by shock or heat from conventional munitions, a series of groundbreaking energetic formulations have been meticulously developed and tested over the years. Yet, the wastewater generated during the production and disposal of both legacy and modern insensitive munitions (IM) presents a complex challenge that complicates effective treatment strategies. In this seminar, I will share the findings from our recent study, where we employed an anaerobic-aerobic membrane bioreactor (MBR) system to tackle the treatment of these challenging energetic compounds. In addition to performance monitoring, we also explored how the microbial community structure evolves over time, shedding light on the dynamic biological processes involved. These findings contribute to safer and more effective management of energetic wastewater.

BIOGRAPHY: Dr. Kung-Hui (Bella) Chu is a Professor of Zachry Department of Civil and Environmental Engineering at Texas A&M University, College Station, Texas. Dr. Chu's expertise lies in environmental biotechnology and engineering, addressing challenging issues in the soil, water, and waste-food-energy nexus. Her research team focuses on bioremediation and biodegradation of priority and emerging contaminants, production of bioenergy and bioplastics, and sustainable development of aquaculture. Her research has been funded by federal and state agencies, including SERDP, ESTCP, NSF, EPA, USDA, and Texas Department of Transportation.

Seminar Details

Friday,Oct 10, 2025
2:30pm – 4:00pm

UH Campus
Classroom & Business Building
Room CBB 104

Online via Teams https://www.cive.uh.edu/research/beyer-distinguished-lecture