

Seminar on Nanobubbles: An Emerging Frontier in Environmental and Agricultural Applications

Organizers:



國家重金屬污染防治
工程技術研究中心
(香港分中心)

Chinese National Engineering Research Center for
Control and Treatment of Heavy Metal Pollution
(Hong Kong Branch)



水技術中心

WATER TECHNOLOGY CENTER

Seminar Details

Date: 27th Aug 2021 (Friday)

Time: 13:00 – 15:00

Venue: Rm 5583 (Lift 29/30)

Quota*: 40 (HKUST CIVIL faculty/students/staff, CNERC-CTHMP member/affiliate institutions)

Zoom: Zoom ID: 984 6672 8445

Password: 097635

Link: <https://hkust.zoom.us/j/98466728445?pwd=SHQyeGpuTEZ4VUxQQnhEOVdSY2dSQT09>

Speaker: Prof. Samir Kumar Khanal

Topic: Nanobubbles: An emerging frontier in environmental and agricultural applications

Registration: <https://forms.gle/FNJxYT26bqrq7ndU6>

* Quota for attending in person is on first come first serve basis. For enquiry, please contact Ms. Yuhua ZHANG at yuhuazhang@ust.hk

Speaker:

Samir Kumar Khanal is Professor of Environmental Engineering, Dept. of Molecular Biosciences and Bioengineering, University of Hawai'i at Mānoa (UHM) and Dept. of Biology, Hong Kong Baptist University, Hong Kong. Prof. Khanal started his tenure-track faculty position in 2008 at UHM. Before joining UHM, he was a Post-doctoral Research Associate for 2 years and then Research Assistant Professor for 4 years in the Dept. of Civil, Construction and Environmental Engineering at Iowa State University. He received BS (Hons) in Civil Engineering from Malaviya National Institute of Technology, Jaipur, India, and MS in Environmental Engineering from Asian Institute of Technology, Bangkok, Thailand. His PhD degree is in Environmental Engineering from the Hong Kong University of Science and Technology, Hong Kong. Prof. Khanal is globally recognized researcher in the field of anaerobic digestion, nanobubble technology, aquaponics and waste-to-resources. He has supervised/mentored 14 PhD, 20 MS, 26 UG and 13 high school students, 12 Post-docs, 15 Visiting Scholars, and 2 Junior Researchers. He has over 125 refereed publications in top-rated international journals, 17 book chapters, and 10 books including one best-selling book and one textbook to his name. Prof. Khanal has also delivered over 120 plenary/keynote/invited/guest lectures nationally/internationally and is one of the most productive researchers with Scopus H-index of 43.0 (citation ~6600) and Google Scholar H-index of 52.0 (citations ~11,000). He is globally renowned in the field of anaerobic digestion, bioenergy, aquaponics and nano-bubble technology applications. As evidenced from his achievements and research impact, Prof. Khanal was awarded the highly prestigious Board of Regents' Medal for Excellence in Research by the University of Hawai'i at Manoa (2018), Elsevier's Impactful Research Award (2018), CTAHR Dean's Award for Excellence in Research by the College of Tropical Agriculture and Human Resources, University of Hawai'i at Manoa (2016), Outstanding Alumni Award-2021 by the Dept. of Civil and Environmental Engineering, The Hong Kong University of Science and Technology, and Ashok Pandey Research Excellence Award - 2021 by International Bioprocessing Association (IBA). Prof. Khanal also was ranked world's top 2% scientists by Stanford University's Study (<https://data.mendeley.com/datasets/btchxktzyw/2>). He is an Associate Editor of Bioresource Technology and serves on the Editorial Board/Advisory Board of four other journals. He has also served as a leading guest editor of several special issues related to Anaerobic Digestion and Waste-to-Resources for Bioresource Technology. He has served on various committees of other professional societies, including International Bioprocessing Association (IBA). Prof. Khanal is a professional engineer in the state of Iowa.

Seminar Description:

Title: *Nanobubbles: An emerging frontier in environmental and agricultural applications*

Abstract: There has been growing interest on diverse applications of nanobubble technology in recent years. Nanobubbles (NBs) have several unique attributes, such as their high mass transfer rate, high electrostatic interaction, their longevity in aqueous phase and their potential to form reactive oxygen species (ROS) among others. These attributes open-up new opportunities in enhancing microbial-mediated processes, especially in environmental remediation and removal of recalcitrant compounds, and in agriculture including aquaculture and hydroponic/biaponics/aquaponic system. In this presentation, background information about NBs and their properties, and various potential applications, will be discussed. One example of how NB technology can be applied in aquaculture and aquaponic systems (Aquaponics recycles nutrient-rich aquaculture effluent for vegetable/fruit production), will be covered.