

SynCTI SEMINAR SERIES

NUS Synthetic Biology for Clinical and Technological Innovation (NUS SynCTI)
Member of Singapore Consortium for Synthetic Biology (Sinergy)



Dr Cao Bin

School of Civil and Environmental Engineering
Nanyang Technological University

Biofilm Biology-Informed Biofilm Engineering

Biofilm represents the predominant mode of growth of microorganisms in natural, engineered and medical habitats. Microbial biofilms can be either beneficial or detrimental in different settings. While an enhanced understanding of the fundamentals of biofilm biology is required to fully control detrimental biofilms and to harness the power of beneficial biofilms, progress in biofilm research in recent years has enabled designing and improving biofilm bioprocesses for a desirable performance in various chemical, energy and environmental applications. In this presentation, examples of biofilm biology-informed biofilm engineering enabled by multidisciplinary approaches will be discussed.

Biography

Dr. Cao is an Associate Professor in the School of Civil and Environmental Engineering (CEE) and a Principal Investigator (PI) in Singapore Centre for Environmental Life Sciences Engineering (SCELSE), NTU. He obtained his Ph.D. degree in Chemical and Biomolecular Engineering from National University of Singapore. He then worked on U.S. DOE-funded projects during his postdoctoral training in Washington State University and Pacific Northwest National Laboratory. Since he joined NTU in Dec 2011, his research efforts have been focused on biofilm engineering - a highly interdisciplinary research topic at the interface between engineering and microbiology. Dr. Cao's specific research interests cover (i) elucidation of fundamental mechanisms in biofilm-mediated environmental processes and biofilm-contaminant interactions and (ii) development of novel approaches to harnessing the power of beneficial biofilms and combating detrimental biofilms for environmental biotechnological applications. Dr. Cao is now serving as an Associate Editor for journal *Water Research* and an Assistant Editor for journal *Applied Biochemistry and Biotechnology*.

8 March 2018, Thursday | 4 pm to 5 pm
Centre for Translational Medicine, MD6-04-01A
CeTM SMART CLASSROOM
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