

SINGAPORE

## New S\$6.5m facility at NTU by SCELSE and Carl Zeiss to boost used water treatment and environmental life sciences engineering research in Singapore



(Left to Right): Mr Mark Mooi, Regional Division Manager BioSciences, Carl Zeiss Southeast Asia; Mr Ven Raman, Managing Director, Carl Zeiss Southeast Asia; Professor Yehuda Cohen, Deputy Director, SCELSE; Professor Staffan Kjelleberg, Director, SCELSE. Photo courtesy of NTU.

The Singapore Centre on Environmental Life Sciences Engineering (SCELSE), launched a S\$6.5m Advanced Biofilm Imaging Facility at Nanyang Technological University (NTU) in partnership with optical and opto-electronic leader Carl Zeiss.

SCELSE, a first-of-its-kind research institution that aims to harness the powers of micro-organisms for environmental and water sustainability, is a S\$120 million center funded by the Singapore government. With the new facility and state-of-the-art imaging equipment from Carl Zeiss, SCELSE aims to become the first research center in the world to achieve real-time observation of how bacteria interact with each other and to conduct unique DNA testing so as to develop new research techniques not possible before in this field.

This new facility is part of a long-term collaboration between SCELSE and Carl Zeiss that was inked today. Leveraging advanced imaging technologies from Carl Zeiss such as the high-resolution, high-sensitivity laser scanning confocal system, SCELSE will embark on bacteria research projects in used water treatment, public health and other critical environmental life sciences

engineering research in Singapore.

Professor Staffan Kjelleberg, SCELSE Director, said: "Through its partnership with Carl Zeiss, SCELSE has become the first institution in the world to use such advanced imaging equipment in pushing the frontiers of environmental life sciences, enabling us to achieve a deeper understanding of bacterial interactions in numerous environments. Our students and researchers are already working on several environmental projects such as used water treatment and surface waterways. We are confident that this new collaboration with Carl Zeiss will help deliver ground-breaking findings and intellectual property to help strengthen Singapore's position as a global leader in environmental life sciences engineering R&D."

This is the first time that Carl Zeiss is working with a partner in the field of environmental life sciences engineering. As part of the MOU agreement, the optical and opto-electronic leader and SCELSE will explore ways to make optimal use of the systems for research in this emerging field of study.

Ven Raman, Managing Director of Southeast Asia, Carl Zeiss, added: "Carl Zeiss

is very excited to partner SCELSE, a world-class research group helmed by pioneers in environmental life sciences engineering. We are looking forward to working closely with SCELSE to explore the unexplored area of bacterial interaction, and harness that knowledge for important projects such as water treatment and public health for the benefit of all Singaporeans."

Professor Yehuda Cohen, Deputy Director of SCELSE, emphasized that their purpose in studying biofilms is not to kill bacteria but to understand how they co-exist together. He further elaborated that understanding how they work together would allow researchers to interfere with all the negative effects of bacteria. The ultimate goal would be to develop biofilms that can deliver the processes that is wanted. According to Professor Cohen, there is a common language that has enabled researchers to communicate with the bacteria in biofilm so that the bacteria can be moved in and out of different phases for study. Researchers at SCELSE will be manipulating this as part of their work to understand in greater detail the interactions occurring within biofilms.

The Advanced Biofilm Imaging Facility by SCELSE and Carl Zeiss is located at 60 Nanyang Drive, School of Biological Sciences, Nanyang Technological University.

*Edited by APBN*



Professor Yehuda Cohen, Deputy Director of SCELSE, explaining advanced research techniques in environmental life sciences engineering using ZEISS microscopes.