

# ACTIVATED SLUDGE 2019

## OPERATION AND CONTROL OF ACTIVATED SLUDGE PROCESSES USING MICROBIOLOGICAL ANALYSIS

 Ljubljana,  
5 TH -7 TH  
JUNE 2019

The activated sludge process is the most commonly used biological wastewater treatment process in the world. Activated sludge can biodegrade many organic pollutants, oxidize and remove reduced nitrogen compounds and promote the enhanced removal of phosphate from municipal and industrial wastewaters. Solid backgrounds in process engineering and microbiology are required for the diagnosis, control and resolution of common activated sludge process problems such as deterioration of settling properties, foam formation and loss of specialized organisms.

### KEYNOTE LECTURERS

#### David Jenkins

is Professor Emeritus of Civil and Environmental Engineering at the University of California at Berkeley where he taught and conducted research from 1960 to 1999. His interests are in wastewater treatment processes and water chemistry. He is an Honorary Life Member of IWA and WEF and member of the US national Academy of Environmental Engineering. Dr. Jenkins is the recipient of numerous awards that include the IWA Global Water Award and the Samuel Harry Jenkins Award. From WEF he has received the Fair, Camp, Eddy, Pohland and Gasgoine medals. Professor Jenkins continues to be professionally active in consulting, writing and teaching.

#### Steven Leach

is a senior staff scientist with Novozymes Biologicals, Inc. He has more than 30 years of experience with wastewater biology, including fermentation, filament identification, treatment process evaluation, and onsite analysis during upsets, chlorination, and recovery. He has worked on the installation and start-up of over 20 fixed-film reactors units throughout the country. Steve is widely recognized for his expertise in identifying filaments and protists. He has completed onsite visits to wastewater treatment plants throughout North and South America, Europe, and Asia.



[www.sludge-events.com](http://www.sludge-events.com)



[sludge2019@bia.si](mailto:sludge2019@bia.si)



JAVNO PODJETJE  
CENTRALNA ČISTINA NAPRAVA  
DOMZALE-KAMNIK d.o.o.

# SPECIALIZED COURSE SCHEDULE

## Wednesday June 5th

08.30 - 09.00	Registration
09.00 - 09.30	<b>Welcome address and introduction to the course</b> , Rok Štravs; BIA d.o.o, Slovenia
09.30 - 10.15	<b>The activated sludge process</b> , David Jenkins, University of California at Berkeley, USA
10.15 - 10.45	<b>The activated sludge community</b> , Steve Leach, Novozymes; Philadelphia, Pennsylvania, USA
10.45 - 11.00	Discussion
11.00 - 11.30	Coffee Break
11.30 - 12.15	<b>Filamentous bulking sludge - causes, control strategies and options for domestic and industrial systems</b> , David Jenkins; University of California at Berkeley, USA
12.15 - 13.00	<b>Protozoa as indicators of activated sludge quality</b> , Steve Leach, Novozymes; Philadelphia, Pennsylvania, USA
13.00 - 13.15	Discussion
13.15 - 14.30	Lunch
14.30 - 15.15	<b>Solids separation problems</b> , David Jenkins; University of California at Berkeley, USA
15.15 - 16.00	<b>Management of the deammonification process with physico-chemical and biological analysis</b> , Marjeta Levstek, Barbara Brajer Humar; JP WWTP Domžale-Kamnik d. o. o., Slovenia
16.15 - 16.30	Discussion

## Thursday June 6th

08.30 - 09.15	<b>Activated sludge foaming - causes, control strategies and options</b> , David Jenkins; University of California at Berkeley, USA
09.30 - 10.15	<b>Characterization of activated sludge through FISH-can this be directly used for plant operation?</b> Jiri Snaidr; Vermicon Germany
10.00 - 10.15	Discussion
10.15 - 10.30	Coffee Break
10.30 - 13.00 / 14.00 - 16.30	<b>Laboratory and Tutorial Session:</b>
10.30 - 10.45	<b>Basic microscopy: an important skill for WWTP operators</b> (bright field and phase contrast observation), Božo Jernejčič; Tehnooptika, Slovenia
10.45 - 11.15	<b>Laboratory:</b> introduction (sample handling and preparation, staining procedures Neisser and Gram)
11.15 - 12.45	<b>Microscopic observation of filamentous bacteria – foaming:</b> dominant filamentous organisms types
12.45 - 13.45	Lunch
13.45 - 15.15	<b>Microscopic observation of filamentous bacteria – foaming:</b> dominant filamentous organisms types
15.15 - 15.30	Coffee Break
15.30 - 17.00	<b>Case studies by the participants from their WWTP</b>

## Friday June 7th

08.30 - 09.00	<b>Experience of ultra fine bubble technology usage in WWTP</b> Boštjan Veronik, Waboost, Slovenia
09.00 - 09.30	<b>Future development of microbial analytics and process control in activated sludge wastewater treatment</b> , Rok Štravs; BIA d.o.o, Slovenia
09.30 - 09.45	Discussion
09.45 - 10.15	<b>Course summary and certificate presentations</b>
10.15 - 10.30	Coffee Break
10.30 - 15.00	<b>Excursion to Domžale-Kamnik wwtp</b>