

Invitation

Specialized microbial consortia for overcoming ammonia inhibition during biomethanation of ammonia-rich substrates

Thursday, 19th of September 2019
5:00 p.m.

Room "Keryneia"
Andreas Themistokleous Building
Cyprus University of Technology
Athinon Street, Lemesos



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University of
Technology

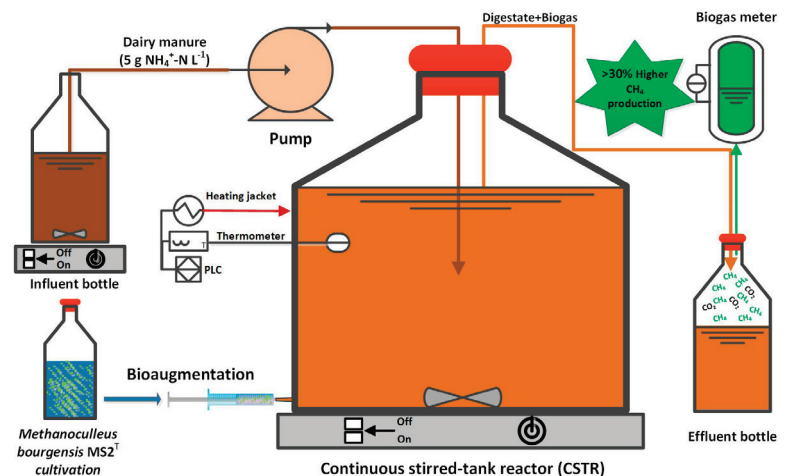
The Department of Environmental Science and Technology of the Cyprus University of Technology invites you to a lecture on:

Specialized microbial consortia for overcoming ammonia inhibition during biomethanation of ammonia-rich substrates

Speaker: Dr. Ioannis Fotidis

Abstract

Biogas from anaerobic digestion (AD) is a renewable energy carrier, which plays an important role in substituting fossil fuel and contributing to the reduction of greenhouse gas emission. A variety of biomasses is used already as feedstock of AD process, e.g. agricultural biowaste, forestry residual and municipal sewage sludge, etc. Recently, 2nd and 3rd generation ammonia-rich biomasses, such as animal manures, slaughterhouse waste, food waste, microalgae etc. are becoming an attractive feedstocks due to their high methane production potential. However, high ammonia levels have been reported to cause process instability indicated by volatile fatty acids (VFA) accumulation and low methane production, and even complete process collapse. Ammonia inhibition can cause more than 30% loss of the methane potential of full-scale biogas reactors digesting ammonia-rich substrates. Thus, bioaugmentation with ammonia-tolerant methanogenic cultures was proposed as a time-saving solution to increase methane yield in ammonia inhibited reactors.





Curriculum vitae Dr. Ioannis Fotidis

He received his PhD, from the Aristotle University of Thessaloniki (AUTH), Greece. After graduation, he started working at the Department of Environmental Engineering in the Technical University of Denmark (DTU) as Postdoc, Researcher, Senior Researcher and now Associate Professor. Furthermore, he is a visiting professor in School of Civil Engineering Southeast University Nanjing, China. His research is focusing on anaerobic microbiology, anaerobic biotechnology, biofuels, anaerobic digestion and biorefinery concepts-biomass conversion/fermentation (bioethanol, biosuccinic acid, etc.). Furthermore, he has established for the first time, a novel bioremediation process (bioaugmentation) that completely counteracts the ammonia toxicity effect in anaerobic reactors using acclimatized archaea. He has 32 published and 3 submitted ISI publications (H-index 16, >1000 citations) in well-known scientific journals.