

Background

The development of novel biotechnological platforms, specifically designed to produce valuable biofuels from organic waste residues is essential for Ireland and the EU to transform the economy from one heavily reliant on imported fossil fuels to a more indigenous low carbon economy, centred on energy efficiency, renewable energy and smart networks.

Such platforms are being developed in the SFI Research Professorship “Innovative Energy Technologies for Biofuels, Bioenergy and a Sustainable Irish Bioeconomy”, awarded to Prof. Piet Lens at The University of Galway. Novel and disruptive bioenergy production technologies are being developed by predictive modeling and adaptive process control of the anaerobic digestion of organic matter. The work plan involves three approaches: i) anaerobic digestion for enhanced methane production and direct grid injection; ii) steering the anaerobic degradation of organic matter towards diversification of the biofuel mix, including biohydrogen, biopropanol/biobutanol and bioelectricity; and iii) production of biofuels from waste(water) inorganics, i.e. sulfur and ammonium.

The innovative research program will exploit fundamental scientific investigations to realise the full potential of these bioprocesses as commercially viable biofuel production and biorefinery systems.

Information

Registration fee:

There is no fee for this event.

Location:

Microsoft Teams Event

[CLICK HERE FOR THE LINK](#)

Time zone: London Time (GMT)

Contact: Dr. Simon Mills

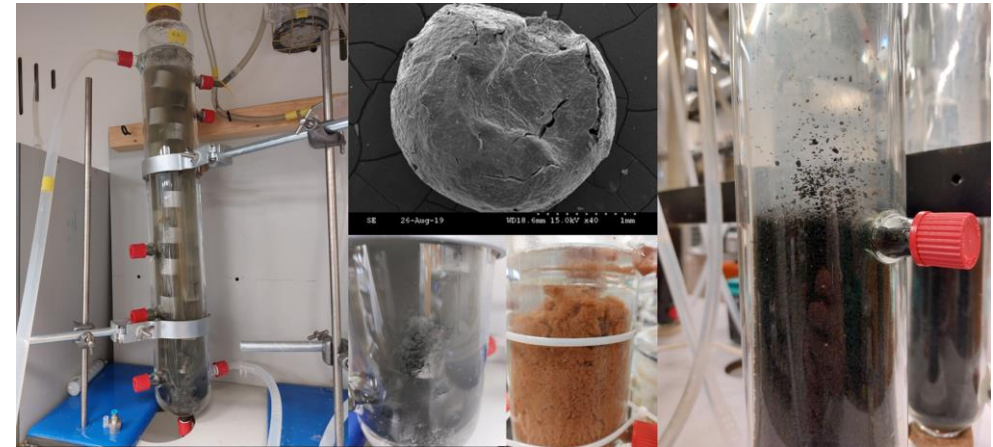
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Online Seminar

Trends in Environmental Biotechnology



Biofilms for environmental biotechnologies

October 13th, 2022
On-line event from:
University of Galway,
Galway, Ireland



SFI Research Professorship scheme

Attracting outstanding research talent to Ireland is one of the principal ambitions of SFI. The recruitment of world-leading scientists and engineers helps to build the national research base and enhance Ireland's reputation as a location to carry out high-impact, high-quality research. The SFI Research Professorship Programme supports national strategic priorities by assisting Research Bodies in the recruitment of world-leading researchers for Professorial Chairs in targeted scientific areas in all areas within SFI's legal remit.



Discipline of Microbiology, University of Galway

The University of Galway has a strong tradition of research and scholarship within an academic environment that emphasizes the student experience. The University of Galway is a leading international, research-intensive university, ranked among the top 250 universities in the world and is named the 2017 University of the year. The vibrant community of researchers at Microbiology investigate important problems in the areas of Infectious Diseases, Energy and the Environment and Marine Microbiology. Since its foundation in 1965, Microbiology at The University of Galway has a sustained track record of publishing in leading disciplinary journals, winning national and international research funding and commercial collaborations leading to important licensing agreements.



MaREI is the Marine and Renewable Energy research, development and innovation Centre supported by Science Foundation Ireland. It combines the expertise of a wide range of research groups and industry partners, with the shared mission of solving the main scientific, technical and socio-economic challenges across the marine and renewable energy sectors. MaREI is coordinated by the Environmental Research Institute (ERI) at University College Cork and has over 230 researchers in twelve 3rd level and research institutes in Ireland working with collaborators in more than 36 countries and 75 industry partners.



The Ryan Institute focuses on four thematic research areas, namely (1) Marine & Coastal, (2) Energy & Climate Change, (3) Agriculture & BioEconomy, and (4) Environment & Health. The Ryan Institute is comprised of 12 Research Centres/Clusters spanning these four thematic research areas. At present, the Ryan Institute is the University of Galway's largest research institute comprised of 91 Research Groups and 12 Research Centres/Clusters that are responsible for over 500 funded research projects comprising circa. 20% of the overall research income of the University of Galway. The 91 Research Groups (each lead by a Ryan Institute Principal Investigator) within the Ryan Institute collectively consist of at least 470 full time researchers, including 90 Postdoctoral Fellows, 50 Research Assistants, and over 240 PhD students.

Programme

10:00-10:15 Opening of the event
Piet Lens, University of Galway, Ireland

Keynote lecture

10:20-10:50 Operation of aerobic granular sludge for municipal wastewater treatment at Nordic climate – experiences from full-scale and laboratory scale systems
Britt Marie-Wilen, Chalmers, Sweden

Session 1: Analytics for the study of biofilms

Chair: Amitap Khandelwal, University of Galway, Ireland
11:00-11:20 Ultra-high field NMR and MRI for non-invasive imaging of biofilms
Julia Krug, Wageningen University, the Netherlands
11:30-11:50 Microbial Ecology of Different-Sized Microbial Aggregates in a Full-Scale Aerobic Granular Sludge Plant
Muhammad Ali, Trinity College, Dublin

12:00-13:00 Lunch Break

Session 2: Microbial interactions in biofilm reactors

Chair: Simon Mills, University of Galway, Ireland
13:00-13:20 Multidimensional perspectives on microbial interactions in anaerobic digestion systems
Guangxue Wu, University of Galway, Ireland
13:30-13:50 Biofilm-membrane hybrid systems: Improved performance by engineering biofilm physical structure
Peter Desmond, RTH Aachen, Germany

Session 3: Biofilm reactors for nitrogen removal

Chair: Eleftheria Ntagia, University of Galway, Ireland
14:00-14:20 Autotrophic denitrification in sphalerite-based systems
Erica Dasi, University South Florida, USA
14:30-14:50 MABR for enhanced nitrogen removal – learning for 10 years or research
Barry Heffernan, Oxymem, Ireland

15:00-15:30 Coffee Break

Session 4: Biofilm reactors for industrial wastewater treatment

Chair: Juan Castilla Archilla, University of Galway, Ireland
15:30-15:50 Biofilm reactors for the conversion of gaseous feedstocks
Eoin Casey, UCD, Ireland
16:00-16:20 BIOBED - EBS - The new generation of high-rate anaerobic systems
Santiago Pacheco-Ruiz, Veolia, the Netherlands

16:30-16:45 Closure of the day
Piet Lens, University of Galway, Ireland