

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 National University Ireland Galway. Novel and disruptive bioenergy production technologies will be 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. sulphur 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 Live
[CLICK HERE FOR THE LINK](#)

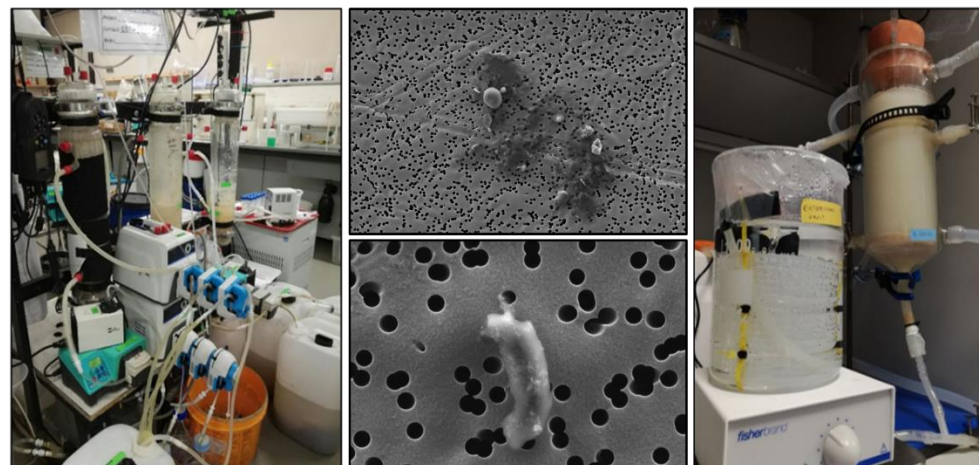
Alternate link to join: <https://shorturl.at/hAGY0>

Contact:

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Online Seminar

Trends in Environmental Biotechnology



Water quality monitoring and control:
Towards energy efficient and sustainable
water treatment

November 19th, 2020
NUIG, 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.



OÉ Gaillimh
NUI Galway

Discipline of Microbiology, NUIG

NUI Galway has a strong tradition of research and scholarship within an academic environment that emphasizes the student experience. NUI 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 NUI 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.



Energy · Climate · Marine

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 200 researchers working across 13 academic institutions collaborating with over 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 NUI 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 NUI 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

14:00 Opening of the event

Chair: Dr Chiara Cassarini, NUI Galway

Plenary talk

14:05 – 14:30 **Water/energy – interactions. What are they and why do they matter?**

Dr Eoghan Clifford, Senior Lecturer, NUI Galway

Session 1: Water quality management – Sensing and detection

14:30 – 14:50 **Online real-time water quality sensing using artificial intelligence**

Dr Kevin Fitzgibbon, Co-ordinator at Water Systems and Services Innovation Centre, Nimbus, Cork Institute of Technology

14:50 – 15:10 **Detection of Verotoxigenic E. coli in Irish private wells**

Dr Liam Burke, Lecturer, NUI Galway

15:10 – 15:30 **Discussion**

Open questions session

15:30 Coffee Break

Session 2: Wastewater treatment and energy recovery

15:45 – 16:05 **Utilising algae and duckweed to bioremediate freshwater aquaculture discharge**

Mr Damien Toner, Development and Innovation Executive, BIM

16:05 – 16:25 **Energy systems integration in wastewater treatment plants: Challenges and opportunities**

Dr Recep Kaan Dereli, Assistant Professor, University College Dublin

16:25 – 16:45 **Discussion**

Open questions session

16:45 Closure of the day

Prof Piet Lens, NUI Galway