

Stokes Lectureship at GMIT in Biological Science

Post Title: Sustainable Biofuels and Applications

Funding Agency: Science Foundation Ireland (Stokes Lectureship)

Description: The existing direction of natural resource management within Ireland has been conditioned by our status as an island, until recently isolated in energy infrastructure terms from mainland Europe, our non-nuclear policy position, set against a mix of indigenous fossil fuel resources in the form of peat and natural gas at a level which still entails a high rate of import dependency. This has been further conditioned over the past decade or more by subscription as a member of the EU to common policies in respect of market liberalisation, fair competition and environmental protection, particularly in response to the UN Convention on Climate Change, notably the Kyoto protocol. While economic growth and energy consumption has been somewhat decoupled in Ireland, energy demand has increased significantly over the last 10-15 years. There are economic implications for Ireland's energy commitments both at a global and international level. There has been significant growth in green house emissions, whereby in 2003 GHG emissions were 25% above 1990 level compared to a the reference target of 13%.

There presently exists the Alternative Energy Requirement Programme, administered by the Department of Communications, Marine and Natural Resources, which allows the Government to achieve the target of increasing the supply of electricity produced from renewable energy sources including biofuel in line with Ireland's commitments at EU level. Energy produced from biomass is considered to be carbon neutral, which, therefore, provides a method of reducing the nation's production of carbon dioxide in line with international commitments under the Kyoto Protocol.

Research Environment: The Stokes Lecturer will investigate the barriers identified to date in understanding Bio-energy pathways, a typical pathway including fuel supply to energy conversion. Continuing from this investigation there are a number of possible applications with suitable heat load characteristics to insure overall conversion efficiency and high load factors of energy is varied. This will include alternative Biofuel applications. Knowing that the cost is generally not economically competitive with fossil fuel technologies particularly where no account is taken of externalities, the successful applicant will investigate the utilization of the natural moisture contained in bio-mass as the main heat transfer and hydrolytic agents, products such as Lignin (can be added to a host of materials to replace oil-derived resources such as binders and disoersants) etc.

Requirements/Background: The successful candidate will hold a PhD with three years relevant experience in Bio-energy or Bio-mass Research.

Project Start-Date: January, 2008

Project Duration: 5 Year Fixed Term

Conditions: SFI Award is valued at €90,000 per annum

Further Information on the Project: Dr. Patrick Walsh, Hydrocarbon Alternatives Research Group

Please submit a detailed Curriculum Vitae along with a covering letter clearly indicating the post title to:

**Human Resources Department,
Galway-Mayo Institute of Technology,
Dublin Road, Galway.
Email: hr@gmit.ie
Telephone No.: (091) 742763/742767/742737
Fax No.:(091) 770545**

Latest date for receipt of application is: 12 noon on Friday 25th May, 2007