

Biorefining of lipids from microalgae as high-value oils and bioenergy commodities

Applications are invited for **one** Research M.Sc. fellowship in the School of Science, Department of Environmental Science, Institute of Technology Sligo to commence September 2017.

The realisation of Ireland's smart economy requires improving competitiveness in promising research disciplines such as biotechnologies. Microalgae constitute an under-explored natural source of biochemicals and have been the focus of increased attention due to the high commercial potential associated with the discovery of new bioactive compounds. Advances in microalgal biotechnology have allowed the biorefining of high value metabolites with wide nutritional or pharmaceutical applications including polyunsaturated fatty acids (PUFAs), phycocolloids, antioxidants, stable-isotope biochemicals, biotoxins, fluorescent pigments or other bioactive molecules.

The proposed research focuses on the use of microalgae for the biorefining of high-value oils (eg. omega-3 unsaturated fatty acids) and lipids amenable to conversion into biodiesel. These aspects will be addressed using laboratory-based experiments and state of the art methodologies aiming at i) characterising the lipid signature of newly isolated microalgal strains, ii) modulating the micronutrient profile of cultivation media for increased lipid yields, iii) upscaling microalgal growth in photobioreactors and iv) assessing the suitability of lipid profiles for conversion into bioenergy.

Funding, available for three years, includes a stipend of €13,000 per annum plus institutional registration fees, with possibility of conversion to Ph.D. after two years. Motivated candidates, with a strong interest in environmental microbiology and advanced instrumentation, must have or be expecting to gain a B.Sc. in Bioanalytical Sciences or related discipline at the 1st class honours level. Informal enquiries and full application (*curriculum vitae*, cover letter and contact details of two academic referees) to be sent by 28th July to:

Dr. Nicolas Touzet,
School of Science,
Centre for Environmental Research, Sustainability & Innovation,
Department of Environmental Science,
Institute of Technology Sligo,
Sligo, Ireland.

E-mail: touzet.nicolas@itsligo.ie