

Investigating opportunities for bio-mass derived platform chemicals

Identifying products that can be derived from biomass-based platform chemicals and developing the associated market opportunities for renewable chemicals in the UK, is a key focus of FROPTOP - a joint special interest group involving the Chemistry Innovation and Biosciences Knowledge Transfer Networks, the Royal Society of Chemistry (RSC) and the Institution of Chemical Engineers (IChemE).

In 2007, Lucite International approached FROPTOP for help in building research project collaborations in the UK. The company was specifically interested in working with Professor Martyn Poliakoff CBE, and his team at Nottingham University, to investigate whether platform chemicals - which can be generated by biotechnology processes - can be converted cost effectively into feedstocks for its polymerisation processes to make products such as acrylic baths, sinks and work surfaces.

As a result of this connection, an initial three month feasibility project - jointly funded by FROPTOP and Lucite - was established with Nottingham University's Business Partnership Unit.

This project has led to a longer term collaboration between Lucite and Nottingham University that has resulted in a successful bid for an Industrial CASE Award in Chemistry Innovation's 2008 call.

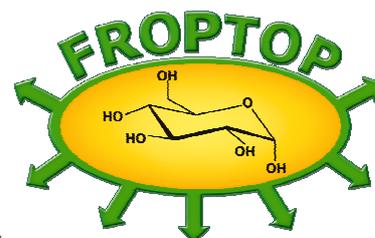
Formally set up in Autumn 2008, the Industrial CASE project is investigating the underlying chemistry, role of catalysts and use of supercritical fluids in the selective production of methacrylic acid using renewable natural sugar acids.

FROPTOP (From Renewable Platform Chemicals to Value Added Products) is a joint Special Interest Group of the Chemistry

Innovation & Bioscience Knowledge Transfer Networks, the Royal Society of Chemistry (RSC) and the Institution of Chemical Engineers (IChemE) that works with industry, Government, academia and other networks to develop the market for renewable chemicals in the UK.

FROPTOP covers the gap between renewable, biomass derived 'platform chemicals' and existing chemical and biochemical processes. Its principle aim is to identify the portfolio of products to be derived from biomass-based platform chemicals and also the tools needed to convert these renewable chemicals in a sustainable way.

FROPTOP was responsible for administering a fund - set up by the Biosciences KTN and the Centre of Excellence for Biocatalysis, Biotransformations and Biocatalytic Manufacture (CoEBio3) at the University of Manchester - for industrial biocatalysis projects that seek to improve the acceptance of biocatalytic manufacturing in industry.



Lucite International is the largest producer of methacrylate monomers, methyl methacrylate and methacrylic acid (MAA) in the world. The company produces over 700kte each year globally, including 200kte at its plant on Teesside in the North of England. Currently all of this material is produced from petrochemical based feedstocks and the company is now exploring options for switching production to renewable resources, initially using natural sugar.

