Dr James Winterburn and Ben Dolman
Chemical Engineering and Analytical Science
Outstanding benefit to society through research

Innovative biosurfactant separation process

Initiative

James and Ben (PhD student) have developed an innovative biosurfactant separation process which increases fermentation productivity by more than two fold. This has the potential to open up new biosurfactant markets by lowering the price, making the use of these environmentally friendly, renewable and biodegradable biosurfactants more widespread. The biosurfactant separation process they’ve developed continually removes the biosurfactant from the bioreactor as it is produced.

Having developed this improved integrated production and separation process in the lab they have run trials with industrial partners up to 100L scale, funded by BBSRC, EPSRC, Croda and Allied Carbon Solutions. This work has come out of Ben’s very successful PhD project which has led to a patent filing, pilot scale technology trials and the creation of a company. The company created has received initial funding from Deep Science Ventures and the business will be grown by furthering involvement with commercial biosurfactant producers to bring cost savings in biosurfactant production to market.

James and Ben recently won the BBSRC Innovator of the Year competition in the Early Career category in recognition of their work, which included a £10,000 prize.

How James and Ben have made a difference

The biosurfactant production process that James and Ben have developed has already attracted commercial interest from investors and surfactant manufacturers, with the potential for the increased use of renewable and environmentally friendly biosurfactants being significant. The cost reduction possible with the separation technology can help make this market expansion a reality. James is actively involved in outreach and public engagement activities and has given several talks in schools and colleges on the theme of biosurfactant production to raise awareness of the need for alternatives to chemicals derived from crude oil.

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