

SAFFS: Sustainable acrylic fabrics from seaweed

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Summary

This project builds on previous internal funding and our idea to use fermentation and renewable seaweed feedstock to produce bio-based acrylic acid - a platform chemical used in e.g. textiles, super-absorbents, paints and adhesives.

Aims

- Engineer bacteria to convert seaweed extract to acrylic acid via aerobic fermentation.
- Overcome yield and cost limitations of other bio-acrylic acid synthesis methods.
- Obtain an optimised seaweed fermentation method to yield acrylic acid on a small-scale.
- Investigate purification of acrylic acid from complex seaweed extract.

Outcomes

- Developed an efficient method to extract our substrate from seaweeds.
- Engineered a model bacterial strain to produce and export acrylic acid.
- Developed a scalable method for processing aqueous seaweed extract via fermentation to yield acrylic acid at 95% efficiency.



“BBNet funding enabled us to develop a scalable method for bioacrylate production from seaweed waste – described by industry as the holy grail for this platform chemical”
Professor Jonathan Todd
University of East Anglia

This proof-of-concept project was awarded by the Biomass Biorefinery Network and funded by BBSRC. For more information visit bbnet-nibb.co.uk.