

Using digital tools to turn sugarcane waste into valuable products

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Summary

Biomass waste is an important feedstock for producing sustainable fuels and chemicals, reducing our dependency on fossil-based resources. This study explored the most effective processes to turn sugarcane bagasse into bio-based sustainable chemicals.



Aims

- Develop and apply novel digital modelling techniques ABE process analysis, design and optimisation
- Investigate separation techniques and feasibility
- Understand bio-waste carbon utilisation efficiency for production of biofuels

Outcomes

- Developed and compared dynamic models to understand carbon utilisation efficiency of ABE fermentation process
- Investigated different product separation techniques, minimising energy use and waste emissions
- Follow on 4-year PhD project secured



"Our project has enhanced the efficient use of sugarcane waste for biofuel production, improving carbon utilisation and reducing energy consumption, which will shape future sustainable chemical processes."
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