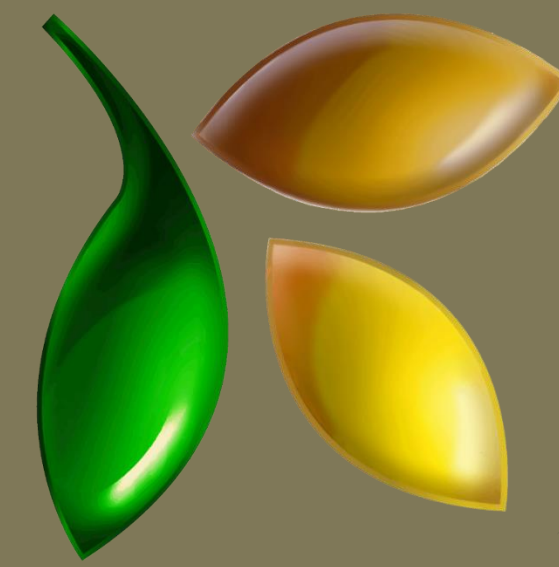


# Horizon 2020 Projects Involving Celignis Biomass Analysis Laboratory



**Celignis**  
Analytical

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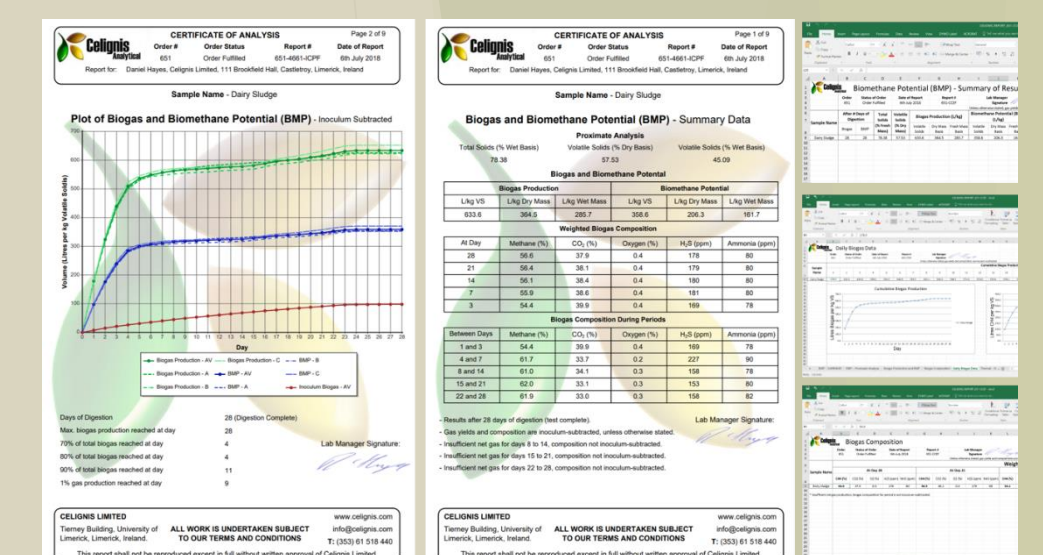
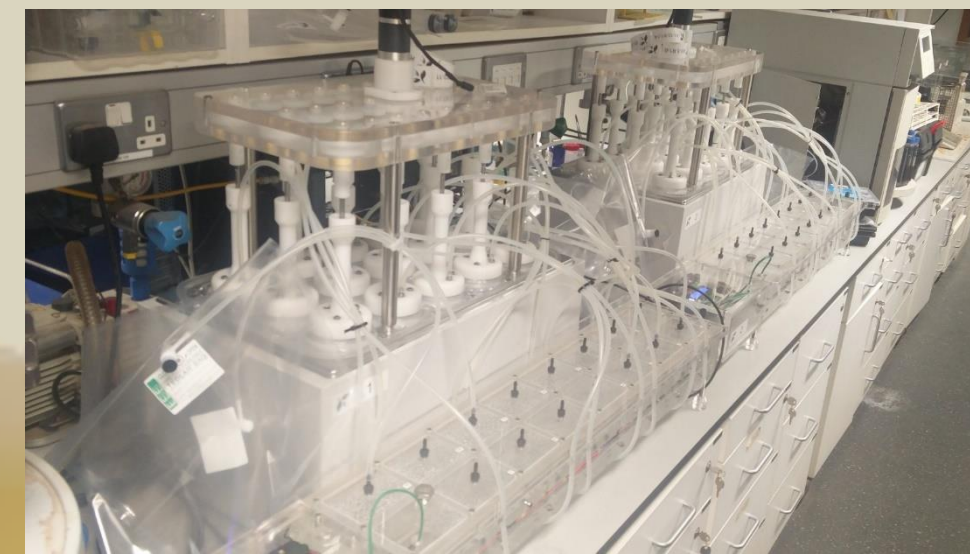
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## About Celignis

Celignis is a dedicated biomass analysis laboratory that provides our clients with the most precise data, allowing them to make best use of their biomass feedstocks and optimise their biomass conversion processes. We offer a range of services relevant to the bioeconomy, including:

- Characterisation of biomass for advanced biofuel production.
- Evaluation of anaerobic digestion feedstocks and process outputs.
- Properties related to biomass combustion (e.g. calorific value).
- Physical properties of biomass (e.g. particle size of wood chips).
- Analysis of aquatic biomass (e.g. seaweed).
- Profiling of the liquid outputs of biomass conversion processes.
- Fermentation trials.

We are in Limerick and are a spin-out from research at UL which led to significant improvements in the analysis of biomass. We are also currently active in several biomass research projects funded by Horizon 2020.



## UNRAVEL

- UNRAVEL is a Research and Innovation Action funded by the Biomass Based Industries Joint Undertaking (BBI-JU) that started in June 2018.
- The project concerns improving a pre-treatment process for the conversion of lignocellulosic biomass, with a particular focus on forestry residues.
- Some of the main objectives are:
  - Achieve at least 80% delignification, 90% glucan recovery, 80% yield of monomeric hemicellulose sugars and less than 1% solvent loss.
  - Achieve 95+% lignin recovery and 99% solvent recovery from the liquor.
  - Develop an economically-viable process for purifying the hemicellulose hydrolysate to ferment the sugars to chemical building blocks.
  - Achieve over 90 percent sugar conversion, over 20 percent reduction of hydrolysis time and 20 percent reduction of enzyme dosage.
- Celignis's roles concern the detailed analysis of biomass extractives and to design processes to recover the most valuable constituents. We will also investigate the impact of extractives-removal on pre-treatment efficiency, working towards an optimal set of economical process conditions.

## ENABLING

- ENABLING is the initiative of 16 partners in 13 EU + associated countries.
- Its goal is to support spreading best practices and innovation in the provision (production, pre-processing) of biomass for the BBI (Bio-Based Industry)
- In particular, it aims at creating appropriate conditions for the development of efficient biomass to BBPs (Bio-Based Products and Processes) value chains.
- ENABLING is based on the consortium's vision that the biomass to BBPs value chains can enhance economic growth, a sound management of natural resources and positively contribute to job-creation
- The project involves the establishment of an Innovation Brokerage Platform that is expected to lead to the following impacts:
  - Between 30-40% increase in the supply of biomass to the BBI.
  - About 20% increased efficiency in supply of biomass for the BBIs.
  - Support the creation of 10 new businesses in the biomass to BBPs sector.
- Celignis's activities within the project are focused on applying our expertise in biomass chemistry and conversion technologies in developing value chains.



## Project Consortium



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## Acknowledgements

The UNRAVEL project has received funding from the Bio Based Industries Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 792004. For more information please refer to the project website at [www.unravel-bbi.eu](http://www.unravel-bbi.eu).

## Acknowledgements

ENABLING has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 774578. For more information refer to the project website at [www.enabling-project.com](http://www.enabling-project.com).

