REFRESH

Smart, circular recycling of wind turbine blades

Partner focus

circe

Co-funded by
the European Union

CIRCE

Spain

CIRCE is a technology centre founded in 1993, seeking to provide innovative solutions for a Sustainable Development. CIRCE's research centre consists of a highly qualified and multidisciplinary team.

CIRCE's mission is to improve the competitiveness of companies by generating and transferring technology through market-oriented R&D and training activities in the fields of sustainability and resource efficiency, energy networks and renewable energies. CIRCE's activities deal with topics as diverse as smart grids, smart mobility, industry 4.0, energy efficiency and circular economy.



CIRCE's role in the project

Microwave-assisted blade recycling

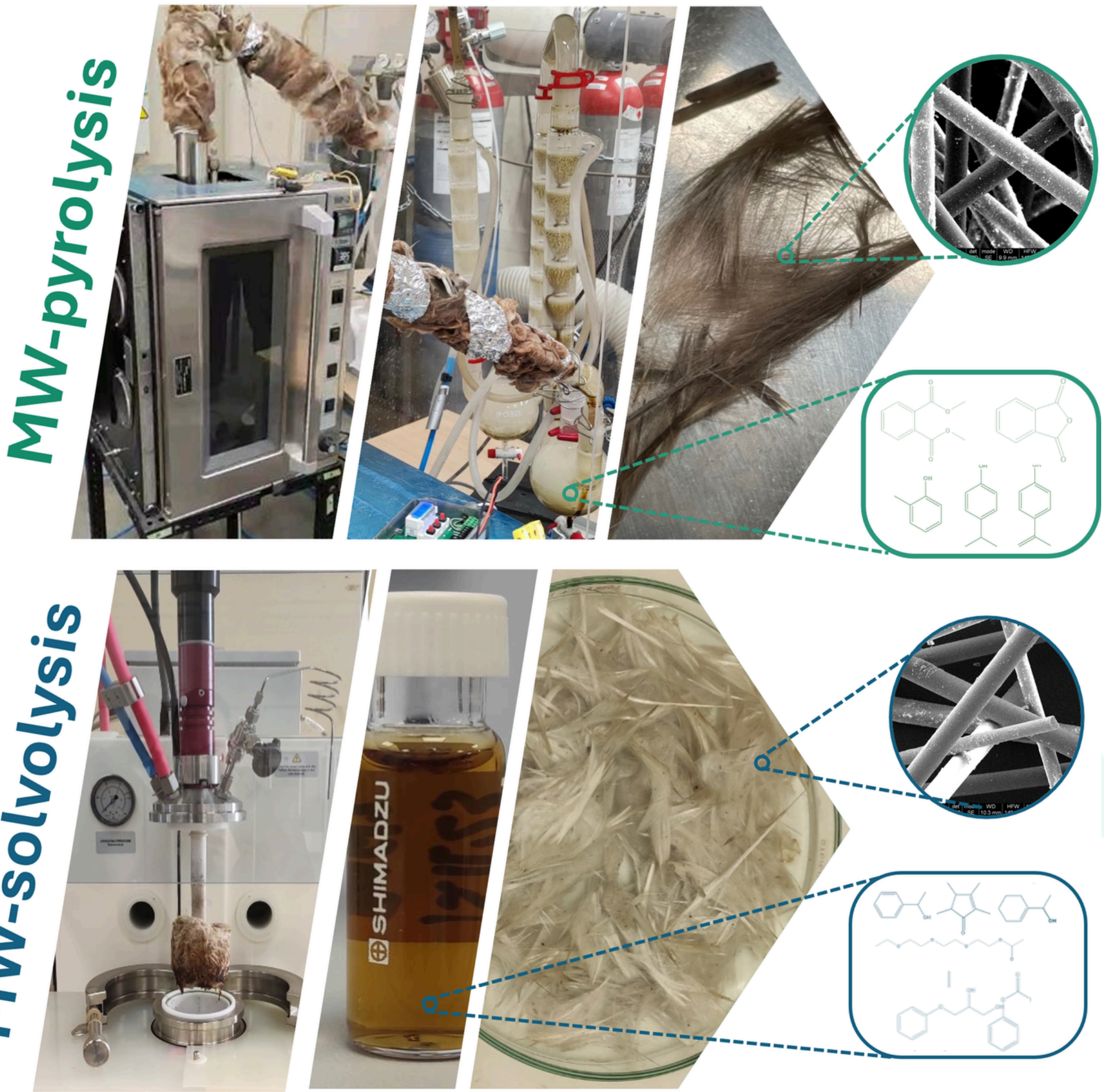
CIRCE is advancing alternative energy-efficient thermal and thermo-chemical processes based on **microwave-assisted heating (MWH) technology** for the recycling of glass fibres and valorisation of resins from decommissioned blades.

- Experimental MWH pyrolysis and MWH solvolysis at bench-scale units using shredded blade waste.
- Characterisation of recycled fibres, pyrolysis oils, chemical building blocks and energy efficiency of MWH processes to assess their techno-economic viability.



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Microwave-assisted pyrolysis and solvolysis



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“CIRCE’s aim has been to experimentally validate a MW-assisted composites recycling technology and gain insight into its potential and limitations.

Based on the benchmarking MW-pyrolysis and MW-solvolysis experimental findings, we performed a techno-economic assessment to evaluate the viability of each technology as well as their energy efficiency and process scalability.

By the end of the project, we will have a clear picture on further development steps to be conducted towards the commercialisation of a first-of-a-kind MW-based energy-efficient blade recycling process for enhanced quality of reclaimed fibres and oils.”



Dr Ignacio Julián
Technology Project Manager, CIRCE

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www.refresh-project.eu

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