



SPIRE and Catalysing the Circular Economy BROKERAGE EVENT

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MICROWAVES AS AN INNOVATIVE PRODUCTION TECHNOLOGY

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+ 100 Employees
Annual Budget > 5 M€
External funding > 2M€
2 Spin-off

Relevant Experience in EU PROJECTS



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- 79 H2020 projects
- > 32 MEUR financed



MICROSHOE

Microwaves as an Innovative Production Technology



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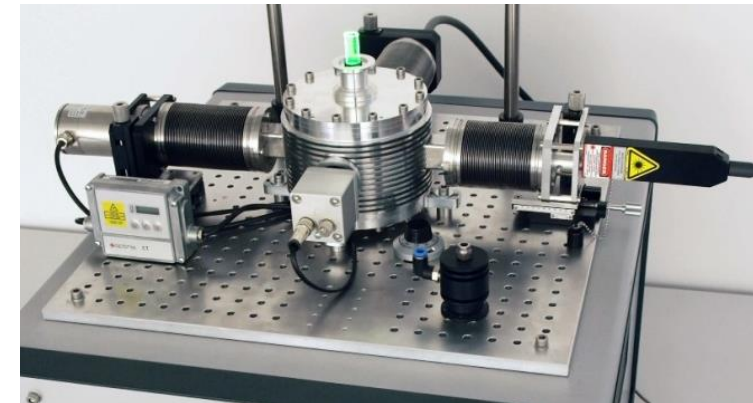
Industrial Microwave Heating

- Design and manufacturing
- From Lab (TRL4) to Pre-industrial scale (TRL6-7)
- Including in-situ and real-time control.
- Optimization of process efficiency and product quality.

Materials' characterisation

- Determination of the material interaction with the microwave fields
- Advanced in-situ characterization up to more than 1000°C

Complete engineering support for the development of microwave demo units



Advanced equipment for in situ monitoring of ultra-fast microwave heating processes

Microwaves as an Innovative Production Technology

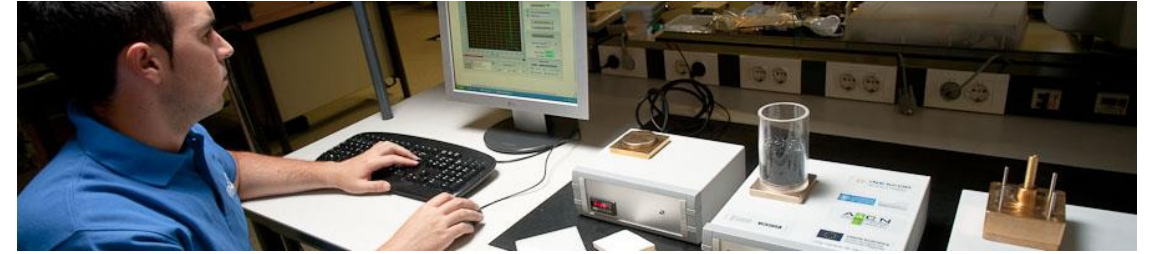


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Facilities

- One of the best independent microwave design and test facilities in Spain, including an excellent starting-up hardware and software equipment.
- Unique advanced in-situ characterisation equipment up to more than 1000°C
- Combination of mw with other techniques such as Raman spectroscopy.
- Integration with theoretical research and electromagnetic modelling.



Complete laboratory solutions

Our Outcomes

- Successfully installed in industry (chemical, ceramic, polymers)
- From Lab (TRL4) to industry (TRL6)
- Patents covering the entire spectrum of heating applications solutions.
- Strong industrial partners network and contacts with relevant stakeholders

CE-SPIRE-02-2018: Processing of material feedstock using non-conventional energy sources (IA)

CE-SPIRE-03-2018: Energy and resource flexibility in highly energy intensive industries (IA 50%)

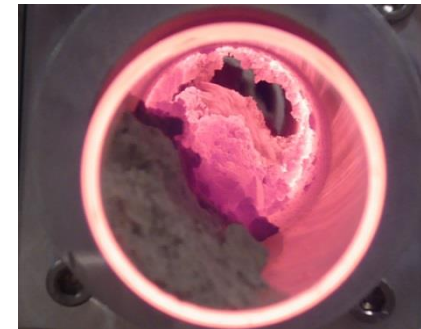
Available technology

- Innovative production technology (microwave) allowing flexibility:
 - ✓ Compact equipment that can be containerised
 - ✓ Portable pilot plants for small productions
- Developed at TRL6 in several sectors: ceramic, polymers, metals, etc.
- Demonstrated energy savings and increased efficiency



TRL6 - Microwave applicators in industry plants

Portable Flexible Modular

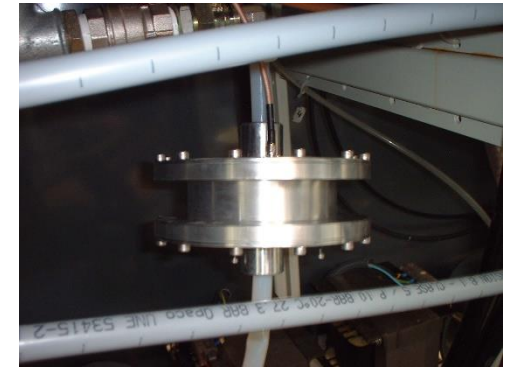
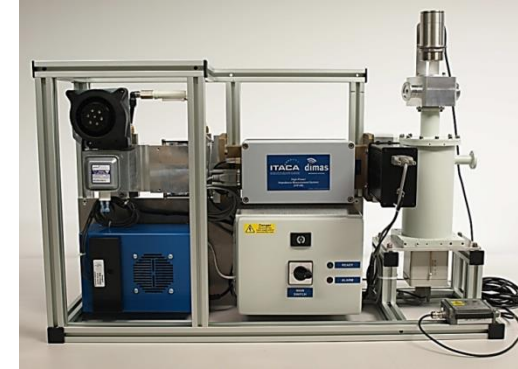


Microwave technology for continuous-flow high-temperature processes

CE-SPIRE-05-2019: Adaptation to variable feedstock through retrofitting (IA)

Available Technology

- Microwave sensors for lab and on line monitoring
 - ✓ Feedstock composition, moisture, etc.
 - ✓ Contamination of components
- Non-invasive, non contact
- For liquid, powder, solid materials, nanomaterials, etc.
- Successfully installed in industry (chemical, ceramic, polymers)



Microwave applicators and sensors for in-situ and real-time control of the process



Microwave Division (DiMaS) Partners

More than 20 years addressing
industry heating processes



Join Our Network





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