

SPIRE
Infoday Brussels
14th Oct 2016

***USALCAST -
EFFICIENT ALUMINUM
CASTING PROCESS BY
ULTRASOUNDS***

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eurecat!

SPIRE
Sustainable Process Industry through
Resource and Energy Efficiency

- Eurecat is the leading Technology Centre in Catalonia, 2nd in Spain.
- Born in May 2015 as the result of the integration of 6 large Tech Centres: Ascamm, Barcelona Media, BDigital, Cetemmsa, CTM and CTNS.
- Over 450 professionals generating an income volume of €40 million.

EURECAT has an intensive expertise on applied research dealing with the use of Ultrasonic treatments in molten metals, centred on:

- | | |
|--------------------------------------|--------------------------------|
| - Metal degassing | - Semi-solid processing |
| - Metal cleaning | - Grain refining |
| - Microstructure modification | - Particle dispersion |

➡ Ultrasounds, microwaves, combinations thereof

EURECAT coordinates several projects in ultrasonic treatment of metals, such as: www.ultrassm.cat/en/, www.ultragassing.eu, www.doshormat.eu

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USALCAST project idea

Title: *Efficient Aluminum casting process by Ultrasounds*

Main concept:

Applying ultrasounds for an optimised processing of Aluminium casting: upscaling of a small-scale demonstrated technology.

Main objective:

To demonstrate that ultrasound modules can be efficiently applied to different Aluminum casting steps (e.g. degassing, shape casting, ...) at industrial scale resulting in flexible, energy efficient and techno-economical viable processes.

SPIRE key component: Applications

SPIRE key action: KA 3.2: New processes for energy and resource efficient materials applied in sectors down the value chain

SPIRE H2020 Topic: SPIRE-09-2017 Pilot lines based on more flexible and down-scaled high performance processing

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USALCAST expected impact

USALCAST-based modules for light alloys processing will result in:

- High quality parts with 50% reduced scrap rate.
- Reduced material consumption as thickness and weight of the parts can be reduced in a 20 % due to the ultrasonic moulds.
- Environmental impact of US degassing: no gas consumption and no gas release into the atmosphere vs. standard rotor degassing.
- Operating costs reduction up to 20% due to the longer life of fungibles and increased tool lifetime via reduced melt temperature.
- Solutions compatible with existing production lines for a wide adoption.
- Replicable to other materials beyond Al: Mg, Cu...



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EXISTING PROJECT CONSORTIUM

Eurecat Technology Centre (EURECAT, ES), RTD, Foundry Lab
Role: Use of Ultrasounds in Aluminum Degassing and Moulding



Austrian Institute of Technology (AIT, AT), RTD, Light Metals Team
Role: Use of Ultrasounds in Aluminum Shape Casting Tools



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LOOKING FOR PARTNERS

Looking for industrial partners providing applications in the following sectors:

- Automotive end-users, mainly TIER1 manufacturers
- Aluminium die caster
- Ultrasound generation components supplier
- Light alloys tool maker
- Mechatronics experts

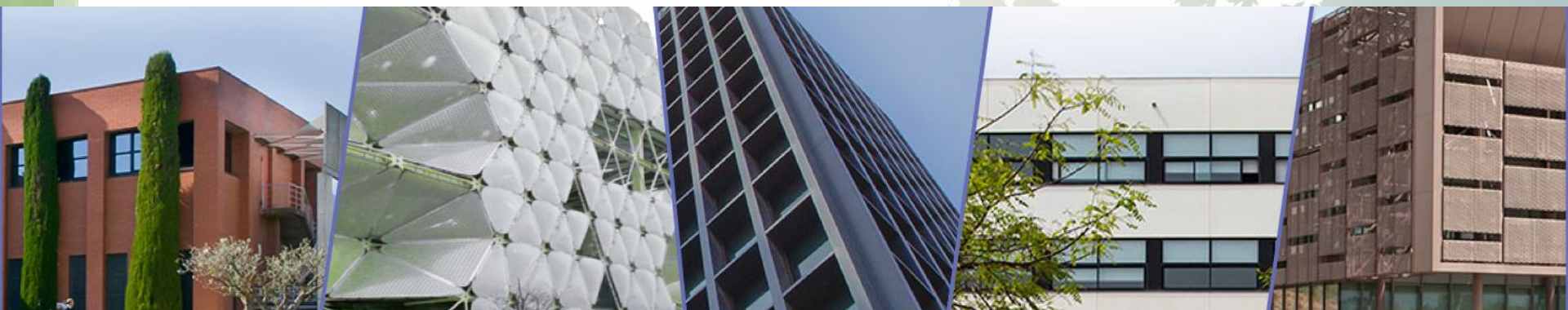


Open to consider merging with other proposals to increase the Project scope.

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CONTACT DETAILS



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Public Programmes

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