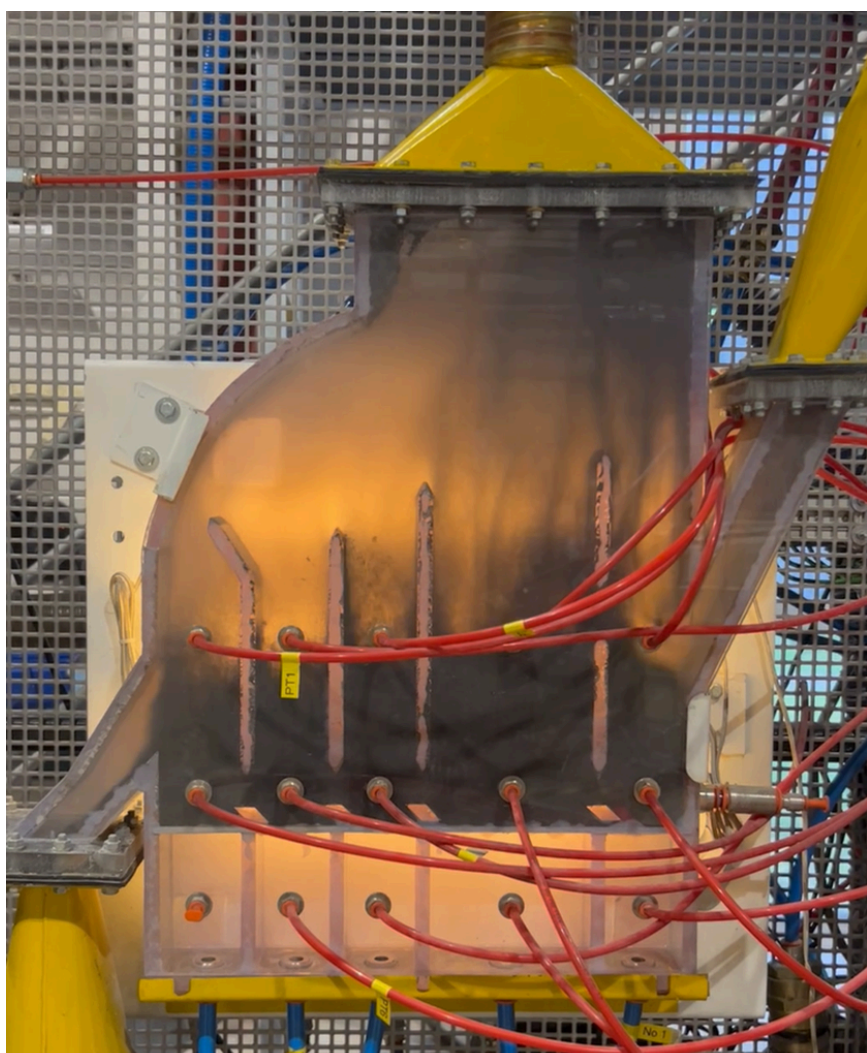


# Multi Chamber Fluidized-bed Particle Separator

Fact sheet

## Description of the result

The multi-chamber fluidised-bed separator is designed to separate particles based on differences in size and density. Within the ReSoURCE project, the unit has been tested for removing impurities from spent refractory fines (<1 mm). The resulting fractions can then undergo different recycling processes, enhancing overall recyclability.



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## Problem addressed

Removing specific impurities from refractory materials is essential to enable their reuse in new refractory products. The presence of certain compounds can make the material unsuitable for such applications. Presence of dust can pose a risk of human and environmental exposure when handling fine powders. The separation unit can also be used to remove the airborne dust fraction to make the powder easier and safer to handle.



## Main features & benefits

The system is flexible and can handle various material types, by varying the air velocities for each chamber. It can be equipped with sensors to further optimize the separation process. The same principle can be applied across a wide range of industrial powder applications, for recycling, dedusting or as a pre-process step.

## Contact & Further Information

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## Target users/Stakeholders

Separation and classification of fine particles in industrial process unit operations present significant challenges due to the strong influence of inter-particle forces. The multi-chamber fluidised technology can be adapted to any material where sorting is required based on parameters such as size, shape, and density for fine powders.



## Exploitation potential

The separator has strong potential for use in recycling dry powder materials across various applications. It can serve as a pre-processing step to reduce the volume of powders that need to undergo more energy-intensive treatments.



## Who Is Leading the Development?

The multi-chamber fluidised-bed separator was originally developed at SINTEF but is continually being optimized for new applications.



Scan to learn more about SINTEF



## Technical facts

- Particle separation is achieved using compressed air only.
- Particle density, shape, and size determine the resulting fraction.
- The method can be used to enrich desired components or reduce unwanted ones.
- The unit is designed for customization, optimization, and adaptation to meet the specific process requirements across diverse industrial applications.

## Contact & Further Information



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