



HIRECORD

Scaling Up of a Highly Modular Rotating Packed Bed Plant with an Efficient Solvent for Capture Cost Reduction

Project overview

As a result of the HIRECORD project, a highly modular rotating packed bed (RPB) plant with an efficient solvent for CO₂ capture, along with state-of-the-art process control and safety systems, has been developed. The plant is designed to capture CO₂ from a flue gas stream with a concentration of 15%.

Key features

- Highly modular design
- Efficient solvent
- State-of-the-art process control and safety systems



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Project results

- Highly modular design
- Efficient solvent
- State-of-the-art process control and safety systems

Applications at T sites



Expected results

- Highly modular design
- Efficient solvent
- State-of-the-art process control and safety systems

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In a world's first, HIRECORD will demonstrate a 100t CO₂ capture plant that uses a two-stage Rotating Packed Bed (RPB) absorber and the Rotating Packed Bed desorber with integrated stripper and reboiler (RPB-ISR) with the APBS-CO₂H₂O solvent.



AUTH & CERTH contribution

CERTH provided the process design and optimization of the RPB absorber and desorber units, which include the design of the rotating packed bed (RPB) absorber and the RPB-ISR desorber. The design includes the integration of the RPB-ISR desorber with the RPB absorber, the design of the RPB-ISR desorber, and the design of the RPB absorber.



AUTH has developed a modular design based on the 100t CO₂ capture plant. The modular design allows for the plant to be scaled up to 1000t CO₂ capture capacity. The modular design also allows for the plant to be scaled down to 100t CO₂ capture capacity. The modular design is based on the 100t CO₂ capture plant and is designed to be scaled up to 1000t CO₂ capture capacity.



AUTH is currently conducting a detailed design of the 100t CO₂ capture plant. The detailed design includes the design of the RPB absorber and the RPB-ISR desorber. The detailed design also includes the design of the RPB-ISR desorber with the RPB absorber, the design of the RPB-ISR desorber, and the design of the RPB absorber.



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A man in a red shirt is sitting at a white table with two laptops, a water bottle, and some papers. He is looking towards the camera.

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Project layout



CO₂ capture 48 months

13 partners 14,000,000 euros

2022-2026

Application at 3 sites



Expected results

- Significant reduction of CAPEX due to the use of 13 partners
- Significant reduction of OPEX due to the use of 13 partners
- High safety and low environmental footprint

