THE DRYFICIENCY PROJECT

The project goal is to develop and demonstrate two high-temperature industrial heat pump technologies for waste heat recovery in industrial drying processes.

THE CHALLENGE

- TO REDUCE ENERGY COSTS
  - 12-25% of industrial energy consumption is used for drying on a national scale
  - No or minimal re-use of waste heat
  - In the EU alone, total waste heat potential was calculated to be 11.3 EJ

- TO REDUCE CO₂ EMISSIONS
  - The industrial processing sector still relies heavily on fossil fuels
  - The sector produces 374 mill tonnes of CO₂ every year in the EU alone

- TO UPSCALE HEAT PUMP TECHNOLOGY
  The main recognized barriers for implementation:
  - Lack of heat pumps over 100°C supply temperature
  - Long return on investment
  - Availability of industrial heat pump engineers
  - Ensuring technology performance

THE DRYFICIENCY OBJECTIVES

- Technology demonstration and validation
- Generically designed heat pumps
- DryFiciency training programme

THE SOLUTION - HEAT PUMPS

HEAT PUMP TECHNOLOGY

Cost efficient open loop heat pump

An innovative but verified lubricant-free multistage compression system based on mass produced air turbo compressors with supply temperatures of up to 150°C for steam drying processes.

INDUSTRIAL DEMONSTRATIONS

First closed loop heat pump

Demonstration of industrial closed loop heat pumps with a supply temperature of up to 160°C and a heating capacity of around 400 kW.

CONTACT: dryficiency@ait.ac.at

www.dryficiency.eu

The project has received funding from the European Union’s Horizon 2020 programme for energy efficiency and innovation action under grant agreement No. 723576.

Picture Credits: © AIT, RTDS Group, Shutterstock, SINTEF