

Project: Refrigeration gases adsorption with innovative experimental radiofrequency heating set-up.

Vacant: 6-9 months

Summary: Separation technologies are research topics of high interest nowadays in the refrigeration industry with fluorinated gases (F-gases). F-gases must be recovered and reused in order to avoid its high global warming potential. Adsorption is one promising alternative for the F-gases. The electrification of such adsorption processes is the consequential step towards a carbon neutral operation. One promising GHG adsorption principle is the inductively heated temperature swing adsorption (TSA), that is part of the ongoing project. This operation requires dual materials to be inductively susceptible as heating source and to have high sorption capacity for the F-gases.

The experimental setup of a laboratory scale fixed bed reactor with an induction coil has been brought into operation and is now ready to investigate critical parameters of such suitable multifunctional materials on their heating and sorption capacity performance.

The student will carry out the production and testing of multifunctional materials to gather insights about their sorption and desorption capacities of F-gases, along with the materials heating response by induction heating.

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