SCIENCESPRINGDAY

FCT FACULDADE DE CIÊNCIAS E TECNOLOGIA UNIVERSIDADE NOVA DE LISBOA

Chemistry Department

# Molecularly Imprinted Polymers

REQUIMTE/Polymer Synthesis and Processing in Supercritical carbon Dioxide

HOVIONE

requimte rede de química e tecnologia

FCT Fundação para a Ciência e a Tecnologia


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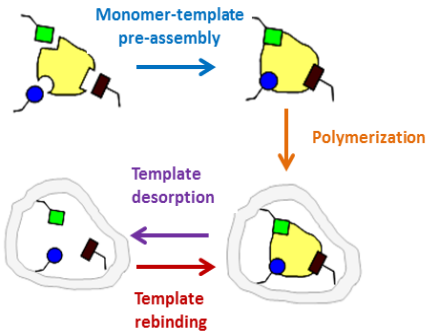
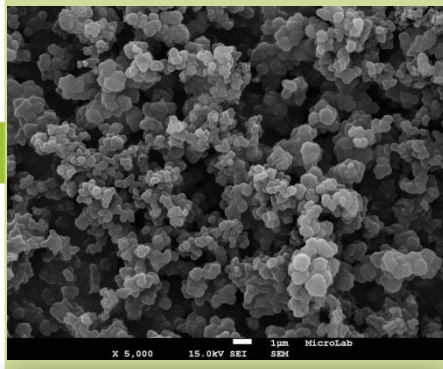
## Objectives

The main objective of my PhD is to explore de use of Molecularly Imprinted Polymers (MIPs) developed using Supercritical Fluid Technology in the aim of a FCT-Hovione collaboration.




## Methodology

Highly cross-linked polymers with molecular recognition to a template molecule are being developed in supercritical carbon dioxide ($scCO_2$)[1].
MIPs are produced with advantages compared to traditional MIP processes. Materials are obtained as dry powders, with no solvent residues, and ready-to-use since no further grinding, drying or purification steps are needed.
Furthermore MIPs are robust materials that can be used under harsh conditions of temperature, pH and pressure.
Due to their properties MIPs can have several applications such as in separation, catalysis and drug delivery.




## Expected Results

Explore MIPs in processes with interest to the Pharmaceutical Industry.
Correlate MIP properties with their affinity and selectivity.
Development of prototypes to be tested with crude mixtures.


[1]M. Soares da Silva et al., *RSC Adv.*, 2012, 2, 5075; *Chem. Eng. Sci.*, 2012, 68, 94; *Int. J. Pharm*, 2011, 416, 61.



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