SCIENCESPRINGDAY

FACULDADE DE CIÊNCIAS E TECNOLOGIA
UNIVERSIDADE NOVA DE LISBOA

REQUIMTE - CQFB

Heterogeneous Catalysis

Chemical Reaction Engineering and Catalysis

requimte

In colaboration with:

UNIVERSIDADE DE EVORA

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Inês Matos

Post-Doc

2001 – Chemical Engineering degree in FCT/UNL

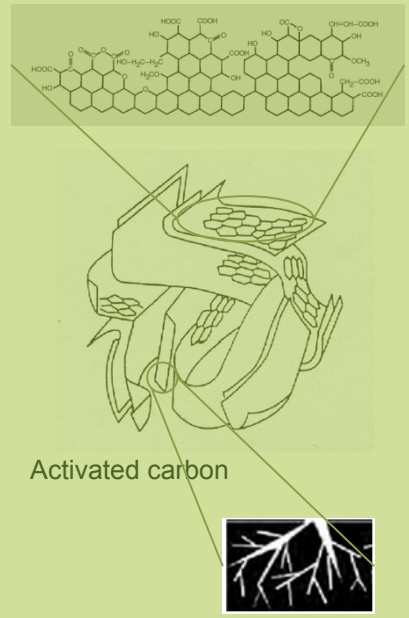
2007 – PhD in Polymerization and catalysis in IST / UTL

Since 2008 – Post- Doc in Requimte in Heterogeneous catalysis and green processes, with Prof. Isabel Fonseca

Objectives

The main objective of this work is to prepare and fully characterized new heterogeneous catalysts and study them in selected organic reactions, within the scope of green chemistry concepts. We aim at increased selectivity, lower waste and higher energetic efficiency.

In particular, Activated carbon materials are themselves very environmental friendly, which make them specially appropriated for this application.



Activated carbon

Methodology

Syntheses of porous solids

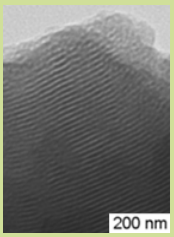
- Activated Carbon from Biomass waste
- Activated Carbon from Sol-Gel syntheses
- Meso structure silicates – MCM41, SBA 15

Surface and textural modification – Surface oxidation, Covalent bonding ,…

Characterization
(AE, TPD, BET, XPS, TG)

Catalytic tests

Modeling of results

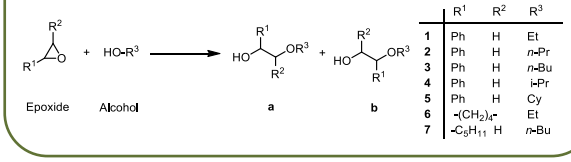


MCM 41

Expected Results

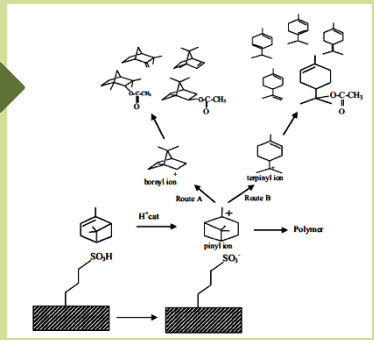
Some recent results:

Reaction of epoxides with alcohols in the presence of Activated Carbon.
Applied Catalysis A: General 439– 440 (2012) 24



	R^1	R^2	R^3
1	Ph	H	Et
2	Ph	H	*n*-Pr
3	Ph	H	*n*-Bu
4	Ph	H	*i*-Pr
5	Ph	H	Cy
6	-$(CH_2)_4$-		Et
7	-C_5H_{11}	H	*n*-Bu

Acetoxylation of α-pinene with acetic acid in the presence of SBA-15.
Microporous and Mesoporous Materials 163 (2012) 237



-Optimized reaction conditions; - Reusable catalysts; - Catalytic versatility

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