

## CATALYTIC PROCESS TECHNOLOGY PROCAT



### INTRODUCTION

The Group of the Catalytic Processes Technology (PROCAT) belongs to Chemical Engineering Department at Faculty of Science at UMA and is constituted by 7 members. The research activity of the PROCAT Group is focused on Applied Catalysis for environmental protection, energy conversion and sustainable chemicals' production. The research approach concerns the control of the catalyst properties, at the nanoscale level, achieved by the use of an adequate preparation technique. Such control is combined with surface reactivity and mechanism studies performed in situ, under steady state or transient conditions.

### RESEARCH TOPICS

- Catalytic purification of gaseous effluents. Removal of NO<sub>x</sub> from mobile sources and simultaneous removal of particulate matter (DeSoot) and DeNO<sub>x</sub>.
- Catalytic processes for energy applications. Conversion of Natural Gas, Hydrocarbon and Renewables for the production of H<sub>2</sub>(CO). Revalorisation of biosolids, biomass and biogas. Biofuels from biomass and algae.
- Development of heterogeneous catalysts for industrial applications.

### SCIENTIFIC-TECHNICAL SERVICES

- Testing and characterization of Catalysts and Functionalized Materials.
- Monitoring of chemical reactions in situ RAMAN-FTIR-MS-CG.
- Thermogravimetric Analysis.
- Studies of the use of biomass, biosolids and biogas.
- Counseling in courses, seminars and congresses organization.

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