



“If we succeed, we’ll be able to drastically reduce emissions, energy consumption, space needs and costs in the chemical industry.”

Hi Raquel. Can you please tell us a little bit about yourself?

I come from Santiago de Compostela, a small, beautiful and old university city in the northwest of Spain where I lived until I finished my MSc in Chemical Engineering in 2003 except for some periods abroad (Erasmus in Milan, Italy, cooperation fellowship in Campinas, Brasil).

I conducted my doctoral research at PSA-Ciemat (Madrid), with short stays in the University of Buenos Aires and Humboldt Universität zu Berlin, and received my Ph.D in Chemical Engineering from the University of Santiago de Compostela in 2008. I worked as a postdoctoral researcher in Ciemat until 2011, when I moved to my current position in the ICP-CSIC. I was a postdoctoral visiting scholar in the LBNL (CA, USA), IRCELYON (France), HKUST (Hong Kong-China) and LCS-ENSICAEN (France).

I have experience in industrial emissions and air pollution control by catalysis, photocatalysis and adsorption. I have approached these research lines from both chemistry and engineering perspectives in the frame of international academic collaborations and market-oriented projects with technological companies.

The main activities supporting my research are the synthesis and characterization of solids and gas-phase activity tests, including the operando spectroscopy methodology.

What does your daily job look like?

I split my time between computer, lab and different kind of meetings, including travels to attend conferences and project meetings. In the lab I mainly prepare or characterize catalytic samples or measure their activity, or supervise the activities performed by our tech-

nician and students and visitors in the group. The computer, however, usually requires most of my time for e-mailing, data analysis, preparation of proposals and publications.

What excites you in ROMEO?

The cooperation between academy and industry at international level with an ambitious objective: the project focuses on the intensification of hydroformylation, model process with undesired consecutive reactions, and the water gas shift reaction, representative of equilibrium-driven processes, but the final aim is to develop a tool that helps identify the applicability of the ROMEO concept to all kind of reactions susceptible of intensification.

What are, according to you, the major challenges to be overcome in ROMEO?

The integration in one catalytic membrane all the needed functionalities to efficiently carry on reaction and separation in a single step. Individual requirements for synthesis and operation are not easily compatible.

Could you give us an example of a benefit that can be expected from ROMEO?

If we succeed, we'll be able to drastically reduce emissions, energy consumption, space needs and costs in the chemical industry, which benefits the economy and the environment.

What will you remember about the first progress meeting in Aachen?

The meeting was very important in order to define the main tasks to carry on next semester. Especially for me and my institution, because at present I'm the principal investigator and contact person in CSIC for ROMEO, but I will have to hand-over my functions in the project for some months due to my forthcoming maternity, and having clear ideas facilitates the process.

Thanks for answering my questions Raquel and all the best with your maternity leave!



ROMEO in brief

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End date:

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The Spectroscopy and Industrial Catalysis group (Institute of Catalysis and Petroleum Chemistry) is specialised in the design and synthesis of structured porous adsorbents and catalysts for the prevention of atmospheric pollution and processes optimisation.

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