



Como parte de las actividades formativas del **Programa de Doctorado** de Ingeniería Química, el próximo **viernes 8 de noviembre** a las **11:30 h** en el aula **QA02** de la **Facultad de Ciencias Químicas**, se impartirá la Conferencia:

## **Research and Development of Supercritical Plants**

Ofrecida por el

**Dr. João Fernandes, Process Engineer at Natex**

The presentation will start with a brief introduction to the company Natex Prozesstechnologie GesmbH. In this introduction, the types of research produced, patents and participation in national and international projects will be shown.

In a more technical perspective, themes like solubility of materials in supercritical fluids, types of extract, raw material requirements, process, sizing of plants, choice of a pump or compressor process, types of closure for high pressure vessels, utilization of other solvents like propane will be brought forward.

With focus on extraction of hemp as technical application of the supercritical extraction technology, different sizes of plants and their production capacities are discussed.

As a conclusion examples of plants built by Natex with their flow diagrams and different process characteristics will be shown.

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**João Fernandes** is PhD in Optimization and Simulation of Chemical Processes using Supercritical Fluids from the New University of Lisbon, Portugal.

He works as process engineer at **NATEX Prozesstechnologie GesmbH (Austria)** since 2013. He was the project manager for the construction of the first commercial wood impregnation plant with biocides using supercritical fluids in Hampen, Denmark (2008).

He is co-inventor of four patents on exploitation related to extraction, impregnation and synthesis processes in supercritical media.



**Natex** is a follow-up of Schoeller-Bleckmann (SB) Process Technology Division, where in the early eighties the industrial application of dense CO<sub>2</sub> gas technology was introduced. In 1993 the experience, know-how, patents and pilot units were transferred exclusively to Natex in the course of a management buy-out.

Natex has supplied standard and customized supercritical fluid extraction plants to many parts of the world. Small, medium and large plants (up to several m<sup>3</sup> extractor volume) were realized. In some cases, applications were implemented on a large scale for the first time. In this way has established itself as a partner for key industrial projects worldwide.