Fundación Cepsa

PRESS **RELEASE**

The Fundación Cepsa Chair of the UHU pushes forward its first Industrial Thesis

- **The thesis explores a novel method for switching directly from benzene to phenol using catalysts that work in non-conventional environments**

- **The "Industrial" focus implies that Cepsa must directly hire doctoral students as a necessary condition**

- **The directors of the thesis are professors Ana Caballero and Pedro Pérez, from the Center for Research in Sustainable Chemistry (CIQSO), and Jesús Lázaro, coordinator of the Petrochemical Department at Cepsa's Research Center**

A little more than a year ago, the University of Huelva and Cepsa put forward a doctoral thesis with an industrial focus aimed at developing new strategies for the direct conversion of benzene into phenol.

Manufactured at the Palos Chemical Plant, phenol is a product used mainly in the production of resins and agrochemicals; in the manufacture of nylon and other synthetic fibers; in the pharmaceutical and clinical industry as a powerful fungicide, bactericide, antiseptic, and disinfectant; in bisphenol A (raw material to produce epoxy resins and polycarbonates); and in the manufacture of acetylsalicylic acid (aspirin), among other applications.

The current phenol production process at Cepsa's chemical plant in Palos starts with benzene and consists of many consecutive phases until the phenol molecule is obtained. Replacing this process with a single phase would not only be a technological milestone on a global scale but would also mean considerable energy savings and a significant contribution to the sustainability of the process. The industrial thesis developed at the University of Huelva and co-directed by Cepsa staff explores a novel method of passing directly from benzene to phenol through catalysts working in non-conventional environments.

The directors of the thesis are professors Ana Caballero and Pedro J. Pérez, from the Homogeneous Catalysis Laboratory (LCH) of the Research Center for Sustainable Chemistry (CIQSO), and Jesús Lázaro, coordinator of the Department of Petrochemistry and New Materials at Cepsa's Research Center.

The researcher in this project is PhD student Elena Borrego Blanco, who obtained a bachelor's degree in Chemistry from the University of Seville and a master's degree in Chemistry from the University of Barcelona. During this first of three years comprising the doctoral studies, the initial results have already been produced which will allow us to predict the success of the work program established at the beginning.

In this type of industrial doctoral thesis, one of the requirements mandates that Cepsa — the company sponsoring the research — directly hire doctoral students; on the other hand, the University of Huelva co-finances the salary costs as part of its Research and Transfer Policy Strategy. Additionally, the experimental studies have the financial support of the Cepsa

Foundation Chair, which covers the costs of materials and reagents derived from the research through the Collaboration Agreement signed each year with University of Huelva.

The extensive experience of the CIQSO researchers joins the experience of Cepsa's Research Center in the oxidation of aromatic compounds to address this complex matter in the hopes of achieving progress, not only in scientific knowledge, but also in a potential industrial application of the knowledge gained.

The LCH is one of the most active research groups in terms of results at the University of Huelva. It carries out various types of research projects financed by competitive public tenders at state and regional level and by different companies in the chemical field. Its activity has been recognized through several international and national awards and distinctions. Founded in 1996 by Professor Pérez, the group has produced 20 Doctoral Theses that have already been defended and another six that are currently under development, including this latest one of an industrial nature, in its 24-year history.

The University of Huelva emphasizes that its partnership with Cepsa allows for a constant transfer of knowledge, one of the most important values of the UHU, and is an essential instrument for the development of research and the training and employability of students.

The Fundación Cepsa Chairs

The Fundación Cepsa Chairs at the Universities of Huelva, Cádiz, Seville, and La Laguna, as well as the Polytechnic University of Madrid, are continually strengthened thanks to the contributions and involvement of the Company's professionals and the academic institutions committed to improving research, training, knowledge flow, and innovation.

Fundación Cepsa Chairs have allowed thousands of students to approach the labor world and bring university professors closer to the reality of the energy and chemical sectors. The exchange of knowledge and experience between Cepsa professionals, university teachers, and students has meant, for two decades, the professional enrichment of all of them. For all these reasons, today Cepsa is an outstanding partner of these universities.

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Fundación Cepsa is a general interest, non-profit entity that aims to carry out initiatives that serve the needs and priorities of the local communities where its founder, Compañía Española de Petróleos S.A. (Cepsa), conducts its activities. The areas of action for Fundación Cepsa are social, cultural, environmental, scientific-educational, and support for amateur sports.