

SYNTHESIS OF CHEMICALS BY ELECTROCHEMICAL TECHNOLOGY



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ABSTRACT

The Applied Electrochemical and Electrocatalysis Group (LEQA) at the University of Alicante has a high experience, expertise and know-how to develop and carry out the synthesis of organic products by direct or indirect electrochemical processes. The electrochemical technology has the great advantages of simplifying some classic methods of chemical synthesis as well as being environmentally friendly. This technology could be of interest for all the chemical and pharmaceutical industries that produce intermediates and final chemical products and need to develop new processes or to improve the traditional ones. The Department also has a pilot plant fully equipped with the necessary infrastructure in order to develop the pre-industrial phase and scaling-up of the processes.

ADVANTAGES AND INNOVATIVE ASPECTS

- The electrochemical technology is a new way to produce chemical synthesis products
- It simplifies the classic methods of chemical synthesis
- It is less aggressive for the environment, avoiding sub-products or wastes derived for the manufacturing processes
- The products obtained need smaller purification.
- Is cheaper than the traditional ones

MARKET APPLICATIONS

The electrochemical technology and its processes are of interest for all the chemical and pharmaceutical industries that produce intermediates and final chemical products and need to develop new processes or to improve the traditional ones by mean of electrochemical technology. Some chemicals obtained by electrochemical processes with industrial interests could be: the production of N-Acetylcysteine from cystine, p-hydroxybenzaldehyde from p-hydroxymandelic acid, glyoxilic acid from oxalic acid, etc.

COLLABORATION SOUGHT

The Applied Electrochemical and Electrocatalysis Group (LEQA) at the University of Alicante has a high experience and know-how as well as the installations required to work within the electrochemical field. It can work together with R&D departments of any company in order to develop new products and processes for industrial use demanding certain technical specifications. The Group could:

- develop electrochemical processes at laboratory, pre-industrial and industrial level until 20 Tn/year
- design and build of pilot industrial electrochemical plant included its automation according with the specifications of the client

- carry out feasibility studies on developing current or new industrial products by mean of electrochemical technology.

In this sense, this research centre seeks to transfer the technology and know-how on electrochemical field to companies by mean of patent licence or know-how agreements.
