Title: **SnO_2 and doped SnO_2. Fabrication and applications.**

Student: Tomás Carrasco Raya

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Supervisor/s: Maria Sarret Pons
Department of Ciència de Materials i Química Física

Tin dioxide (SnO_2) has a lot of interest nowadays because of its excellent electrical, optical and electro-chemical properties. In this project a bibliographic research has been performed to know and classify the existing methods to obtain SnO_2. The study reveals that this oxide can be produced using a wide variety of synthetic routes: various chemical processes, different physical methods and electrochemical processes that involve tin anodizing. While chemical processes produce a nanoporous and crystalline powder, physical and electrochemical methods are useful to obtain an oxide layer, very thin with physical methods and thicker electrochemically. In all cases the applications of the final product are similar: gas sensing, optoelectronic devices, photocatalysis or batteries.

In recent years the interest has been focussed in the doping of tin oxide and therefore, the study has been extended to these doping processes. The search shows that a variety of dopants have been used, including metallic and non-metallic elements; in most cases doping does not mean a new property of the oxide, but an improvement its characteristics. There exist different technologies to obtain doped SnO_2, but usually the doped oxide is produced using some chemical or physical method.