

Título: DESIGN, SYNTHESIS AND CHARACTERIZATION OF HYBRID ORGANIC-INORGANIC MATERIALS FOR ENERGY AND ENVIRONMENTAL APPLICATIONS

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Descriptores:

> QUIMICA INORGANICA

> QUIMICA DEL ESTADO SOLIDO

> PROPIEDADES OPTICAS DE MATERIALES

> SEMICONDUCTORES

El fichero de tesis ya ha sido incorporado al sistema

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Resumen: The main objective of the present Ph.D. Thesis is the study of functional hybrid organic-inorganic materials, and more specifically, the modulation of the properties of those materials through the design of their composition, crystal structure and microstructure.

In this context, this Ph.D. Thesis has focused on the study of organic-inorganic hybrid materials that, having interconnected chemical and structural characteristics, could be modulated to be applied in different fields, such as energy, electronics and environment. We will design photovoltaic materials (for harnessing energy from natural resources), dielectric materials (for energy storage and manufacture of sensors and memories), photo- and thermoluminescent materials (for optoelectronic applications), caloric materials (for solid state eco-

refrigeration) and materials that combine these features with other typical properties, such as magnetism, piezoelectricity, etc.

In all cases, the performance of the materials has been evaluated to ascertain the success of each strategy, which has been used as an input for further strategy development, to finally yield materials with optimum performance for all targeted applications.