

# SYNTHESIS OF NANOPARTICLES



## DATOS DE CONTACTO:

Research Results Transfer Office-  
OTRI  
University of Alicante  
Tel.: +34 96 590 99 59  
Email: [areaempresas@ua.es](mailto:areaempresas@ua.es)  
<http://innoua.ua.es>

### RESUMEN

The group of Applied Electrochemistry and Electrocatalysis of the University of Alicante has acquired an important experience and know-how in synthesizing different types of nanoparticles. The synthesis of the nanoparticles can be carried out using different methods, thus allowing to produce nanoparticles with controlled size, shape and atomic composition. These nanoparticles have a wide number of applications including, fuel cells, heterogeneous catalysts, electrocatalysts, pigments, nanomedicine, etc. In addition, the different nanoparticles can be also dispersed in different supports (carbon based materials, titania, ceria, etc). Consequently, on-demand nanomaterials can be produced for the costumers.

### VENTAJAS Y ASPECTOS INNOVADORES DE LA TECNOLOGÍA

#### MAIN ADVANTAGES

- Customization of the process of synthesis, test, scale-up and technology transfer to the company.
- Use of decontaminated protocols for the cleaning of some particles.
- Techniques appropriated for metallic, bimetallic and multimetallic particles. Also applicable to other compounds as SiO<sub>2</sub>, CdS, ZnS, ZrO<sub>2</sub>, CaCO<sub>3</sub>, BaCO<sub>3</sub>, CdSe, TiO<sub>2</sub>, etc.

#### INNOVATIVE ASPECTS

- Possibilities of developing synthesis processes under customer's requirements (sizes / shapes / composition).
- Electrocatalytic properties of nanoparticles are improved as a function of the size, and atomic composition of the nanoparticles.
- Synthesis of new catalyst and electrocatalyst by preferential surface structure / shapes (cubic, tetrahedral, spherical, octahedral, etc).

### APLICACIONES DE LA OFERTA

The use of nanoparticles could be of interest to:

- Optical, magnetic, catalytic and electrocatalytic properties.
- Sensors.
- Catalysts (supported and unsupported) for batteries, fuel cells, gas diffusion electrodes, etc.
- Ceramic materials.
- Pigments.
- Biological and medical applications.

---

COLABORACIÓN BUSCADA

Manufacturers of optical, magnetic, sensors, medical devices, catalysts (for using in batteries, fuel cells, gas diffusion electrodes, etc.), ceramic materials and/or pigments are sought in order to achieve technical cooperation and/or commercial with technical assistance agreements.

In case of technical cooperation: adapting or developing the technology for the sector or market in which the company could be involved and under their requirements.

In case of commercial agreement with technical assistance: training/assisting in set up processes, consulting in new processes, technical training.

---