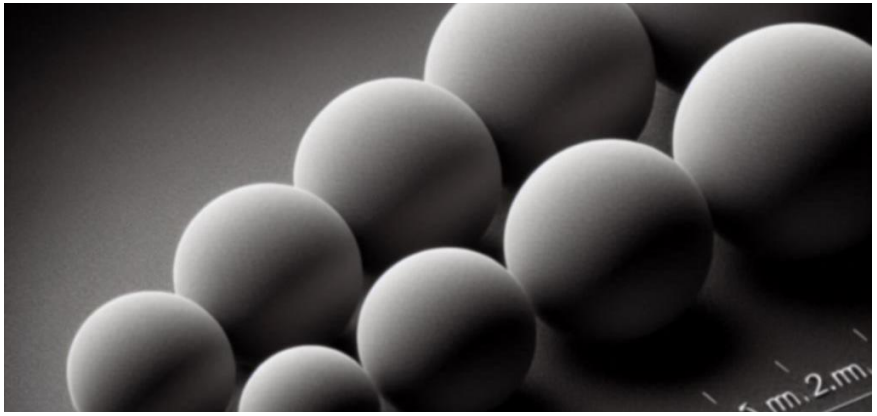
Technology Offer CSIC/MC/106

Monodisperse spherical TiO_2 particles easily obtained



Highly spherical, monodisperse particles made of titanium oxide can be synthesised in a sub and micrometre range under very mild conditions in a facile synthesis using commercial reactants. Applications in catalysis and photonics

Intellectual Property

Priority patent application filed

Stage of development

Ready to transfer to industry

Intended Collaboration

Licensing and/or co-development

Contact

Marisa Carrascoso

Vice-presidency for Innovation and Transfer

macarrascoso@orgc.csic.es
comercializacion@csic.es

Market need

Titania, thanks to its high refractive index and electronic properties, has attracted technological interest in fields such as catalysis, photonics etc. Typical synthesis techniques have failed to produce monodisperse TiO_2 particles with ease in a broad range of sizes. Monodispersity is crucial in some such areas.

Proposed solution

A simple metal alkoxide hydrolysis is demonstrated to be capable under several variations of our technology to produce monodisperse spherical particles of a wide range of sizes from a fraction to several micrometres. The reaction takes place at room temperature and mild conditions not requiring special set up.

Competitive advantages

- Highly spherical shape
- Highly monodisperse product
- Broad range of sizes
- Commercial reactants
- Mild reaction conditions and regular equipment
- Upgradable to industrial scale