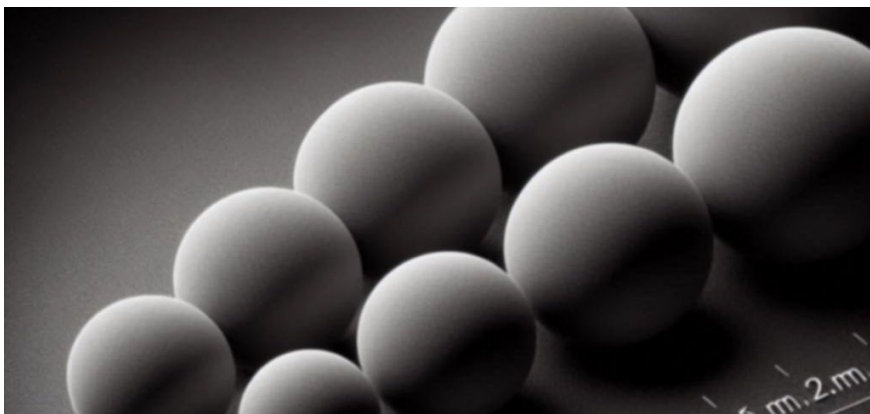


Technology Offer

CSIC/LR/025

Highly monodisperse and spherical TiO₂ particles for catalysis and photonic applications



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.

Intellectual Property

PCT application filed

Stage of development

Ready to transfer to industry

Intended Collaboration

Licensing and/or co-development

Contact

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Market need

Titania, TiO₂, 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 TiO₂ particles with ease in a broad range of sizes. Monodispersity is a crucial characteristic in some areas where optical scattering or diffraction is involved.



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. The particles are produced with low energy consumption and greater efficiency.

Competitive advantages

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