

Synthesis And Size Control Or Organic-Silica Hybrid Micro And Nanoparticles

Tech ID: 23532 / UC Case 2010-602-0

BRIEF DESCRIPTION

Small, uniform spherical particles are widely used in separations, for drug and gene delivery, bioimaging, catalysis, and for optical, electronic, and magnetic applications. One of the more novel materials used to create these micro and nanoparticles is hybrid organic-inorganic materials, which have the thermal and chemical stability and strength of inorganic oxides, while exhibiting the elasticity and functionality of organic molecules. However, current methods to synthesize organic-inorganic micro and nanoparticles produce particles with irregular shapes, wide size distribution, and have limited substrate scope. A new method to synthesize these novel micro and nanoparticles with size control will allow researchers to access uniform particles and apply them to a multitude of applications.

Researchers at the University of California, Irvine have developed a novel method to synthesize organic-silica hybrid micro and nanoparticles with excellent and rational size control. The particles have considerable external surface and internal pore surface areas. The synthetic method does not require surfactants or templates.

SUGGESTED USES

The organic-silica hybrid micro and nanoparticles may be used for applications in selective adsorbents, chromatography, drug delivery, bio- or chemo-labeling and sensing, and optoelectronics.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	8,975,358	03/10/2015	2010-602

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OTHER INFORMATION

KEYWORDS

Microparticle, Nanoparticle, Hybrid, Organic-silica, Organic, Inorganic

CATEGORIZED AS

- » **Optics and Photonics**
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