

## Surfactant-Assisted Synthesis of Titania Microspheres

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Over the past tens of years, colloidal particles have been used as building blocks for photonic band gap materials. Synthetic route for polymer latex suspension with narrow size distribution has been developed well, which is known as emulsifier-free emulsion polymerization. For silica suspension, sol-gel reaction has also developed and their surface modifications are studied using organically modified silanes. However, it is still challenging to synthesize highly monodisperse suspensions of other inorganic materials with special functions. In particular, titania has taken lots of attraction because they are high refractive index materials without absorption in the visible spectrum. However, high reactivity of their sol-gel precursor makes it difficult to synthesis uniform titania via well-known sol-gel method. In here, we present the modification of titania precursors to reduce their reactivity and the fabrication of uniform titania particles via sol-gel method using our modified precursors at the presence of surfactant, which are working as stabilizer for monodispersed microspheres.