

### Synthesis of Highly Monodisperse Silica Nanoparticles

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Monodisperse silica particles have been widely used in optical and biological fields due to their various applications such as photonic crystals, biological sensing materials, etc. Herein, highly monodisperse silica nanoparticles could be synthesized by sol-gel process which contains hydrolysis and condensation reactions. After producing small sized silica seeds(50nm) by slow release of silica precursor, TEOS (Tetraethylorthosilicate), at oil-water interface, highly monodisperse silica particles could be synthesized through slow injection of TEOS to the seed solution. The size of silica particles could be controlled by changing TEOS and seed concentration in the range of 160 to 540nm. In addition, monodisperse silica particles were observed by labeling the surface with fluorescent dye molecules.