

## 내부에 금속 나노 입자를 포함하는 구형 실리카 입자의 제조

이영호, 신승일, 오성근\*  
한양대학교

(seongoh@hanyang.ac.kr\*)

This paper reported the fabrication of monodispersed silica spheres containing homogeneously dispersed noble metal nanoparticles (Ag, Au, Pt, and etc.). The process is mainly performed in two steps: a first step in which monodispersed metal colloids are prepared and a second step in which metal nanoparticles are encapsulated in silica spheres. Monodispersed noble metal nanoparticles with the controlled size were obtained through spontaneous nucleation by the polyol process. Silica spheres containing metal nanoparticles were prepared by modified Stober method. The inclusion morphology was controlled through the sizes of metal nanoparticles and silica spheres and the concentration of metal nanoparticles in solution. Composite particles were characterized with transmission electron microscopy, X-ray diffraction, and UV-visible spectroscopy.