

Gold particles manufactured using cubic phase as template

박수찬, 김진철[†]

강원대학교

(jinkim@kangwon.ac.kr[†])

A cubic phase was prepared using the melt hydration method. Since tetrachloroauric(III) acid was added to the aqueous phase when preparing the cubic phase, it was reduced due to the MO component and gold particles were formed on the surface. The phase transition temperature of the formed cubic phase was observed using a polarization microscope and Differential Scanning Calorimetry (DSC) analysis. Cubic phase was dissolved in methanol and centrifuged to obtain gold particles. Various shapes of gold particles (GP(CP)) were manufactured due to the manufacturing method. As a control, gold nanoparticles (GNP) were prepared using sodium citrate as a reducing agent. GNP and GP(CP) were observed by transmission electron microscopy (TEM). In the case of GNP, it showed the appearance of spherical gold nanoparticles. On the other hand, as a result of observation of GP(CP), particles of various shapes such as rod shape, triangle, and square were formed. The surfaces of GNP and GP(CP) were observed through SEM. Through particle size analysis, the diameter of the particles was expressed as a size distribution table. Through XRD measurement, both particles showed an intrinsic peak of gold.