

Preparation of copper nanoparticles using chemical reduction method

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Metal nanoparticles such as Cu, Au, Ag, Pt have been applied in a wide field due to various properties such as catalyst, magnetism, and antibacterial properties, and are used as antibacterial substances in various fields due to their excellent antibacterial properties. Among various metal nanomaterials, copper is cheaper than other precious metals and has similar antimicrobial properties to other metal particles, so many studies are being conducted. Metal nanoparticles can be manufactured by chemical reduction, polyol, radiation, and chemical vapor deposition. In particular, the chemical reduction method has the advantage of high yield and low manufacturing cost, and is widely used due to a simple procedure of inducing reduction of copper particles by using a reducing agent in the presence of a stabilizer. In this study, copper nanoparticles were prepared using a chemical reduction method, and particle changes according to the type of precursor were to be confirmed. Formation of particles was confirmed through absorbance and FT-IR analysis of copper nanoparticles, and the effect on particle size was confirmed through particle size analysis.