

Copper Nanoparticles Stabilized by Morpholinium Ionic Liquids

이예은, 김기섭†
한국교통대학교 화공생물공학과
(kks1114@ut.ac.kr†)

Copper (Cu) nanoparticles (NPs) stabilized by morpholinium ionic liquids (ILs) were successfully synthesized via chemical reduction. N-(2-hydroxyethyl)-N-methyl-morpholinium chloride ([HEMMor][Cl]) and N-octyl-N-methyl-morpholinium chloride ([OMMor][Cl]) were synthesized and the products were verified by NMR spectroscopy. Transmission electron microscopy (TEM) was employed to characterize the metal NPs. The average sizes of the Cu NPs stabilized by [HEMMor][Cl] and [OMMor][Cl] were 4.1 nm and 4.3 nm, respectively. The structures of the produced particles were crystalline with a face-centered cubic (fcc) lattice. ILs were bound to the surfaces of the NPs, thereby protecting the particles from aggregation.

주) 본 연구는 2015년 한국교통대학교 지원을 받아 수행하였음.