

Abstract

Fabrication of the nanoparticles along with required characteristics in different field like medical, industrial, food, health care etc are great importance in now a day. Present study demonstrates that copper nanoparticles were synthesized utilizing *Syzygium aromaticum* (clove) extract by ecofriendly and simplest route. The green manufactured nanoparticles were subjected to optical, structural, morphology and antibacterial studies. Copper nanoparticles have highly crystalline nature with the face-centered cubical phase. By SEM morphological studies detected size and shape of biosynthesized nanoparticles. EDS Energy dispersive spectroscopy confirms high intense copper metallic peak and the low intense peaks oxygen (O), sulphure (S), chlorine (cl), phosphorous (P) elements due to capping action of the biomolecules of clove extract in CuNPs synthesis. Ultraviolet visible absorption spectrum exhibits the CuNPs characteristic absorption-peak. Various functional groups at different position are indicated by FTIR. By utilizing biosynthesized CuNPs, antibacterial activity was examined against *E. coli*, *Bacillus* spp., *Pseudomonas* spp and *Staphylococcus* spp.