

Abstract

Gold nanoparticles prepared biologically using *Bacillus subtilis* and optimized their synthesis through response surface methodology software at five different parameters, size of gold solution, inoculum size, temperature, time and pH. Optimized conditions were achieved by utilizing RSM. Synthesized particles were characterized by UV Visible, Fourier transform IR, Size Analyzer, SEM and X-ray diffraction techniques. Synthesized AuNPs gave brick red color and absorbance at 530nm to 550nm. A good correlation between predicted values and actual values indicated that RSM is a good process to form gold nanoparticles through green chemistry.