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(57) Abstract :
Nanoparticles are used in different industries for instance pharmaceuticals, cosmetics, and agrochemicals. Plant derived nanoparticle synthesis is cost-effective, efficient and environmentally friendly technique. Copper nanoparticles are formed when copper ions are reduced into copper nanoparticles (CuNPs) by the plant extract, which acts as a reducing agent. Catharanthus roseus, a medicinal plant can be a potential source for biosynthesis of nanoparticles. In this investigation, plant extract of Catharanthus roseus was used to synthesize copper nanoparticles. UV-vis spectroscopy, TEM, DLS, and FTIR were done for characterization purpose. UV-vis spectroscopy was performed in the range of 200 to 800nm which showed presence of CuNPs in the solution. Different concertation of copper salts and plant extracts were evaluated for optimum production of CuNPs. TEM analysis showed the presence of spherical-shaped nanoparticles and FTIR analysis showed the bioactive compounds which are accountable for the CuNPs synthesis. Further roles of synthesized CuNPs were evaluated against one gram gram negative bacteria. Degradation of methyl orange using synthesized CuNPs was also evaluated.

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