

# SYNTHESIS OF SILVER NANOPARTICLES USING MICROBES

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*Project Report Submitted by*

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## ABSTRACT

Nanotechnology is an emerging field in the area of interdisciplinary research, especially in biotechnology. Particles having one or more dimensions of the order of 100nm or less have attracted great attention due to their unusual properties, and applications advantageous over their bulk counterparts.

The synthesis of silver nanomaterials/nanoparticles extensively studied by using chemical and physical methods, but they are complicated, expensive and produce hazardous toxic wastes. These chemicals are harmful to human and environmental health. Synthesis of nanoparticles employing microorganisms has proven to be eco friendly, cost effective and simple process. At the same time the biologically synthesized silver nanoparticles have many applications includes catalysts in chemical reactions, biolabelling, antimicrobial agent, electrical batteries and optical receptors. Microbial source to produce the silver nanoparticles shows the great interest towards the precipitation of nanoparticles due to its metabolic activity.

In this present work, microbial production of silver nanoparticles was carried out using the bacterial strain *Escherichia coli* and Baker's Yeast (*Saccharomyces cerevisiae*). This project work implies the different parameters for production of silver nanoparticles and characterization of particles by UV- visible spectrometer and laser diffraction particle size analyzer.