ECO-FRIENDLY SYNTHESIS AND CHARACTERIZATION OF SILVER NANOPARTICLES SYNTHESIZED AT DIFFERENT P^H USING LEAF BROTH OF *HYPTIS SUAVEOLENS* (L.) POIT

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ABSTRACT

The present work is an attempt to obtain the silver nanoparticles with smaller size by altering the pH of the reaction media (mixture of leaf broth of *Hyptis suaveolens* (L.) Poit. and aqueous silver nitrate) and to assess their optical properties. UV-Visible spectroscopic analysis of synthesized silver nanoparticles revealed their optical properties. X- Ray Diffraction (XRD) analysis and Scanning Electron Microscopy (SEM) elucidated the morphology and size of the silver nanoparticles. The atomic and weight percentage obtained through Energy Dispersive X-ray (EDX) analysis confirmed the significant presence of elemental silver. The reaction media with basic pH could produce smaller nanoparticles than that with acidic pH. This biological method is considered as eco-friendly one as it is not involved of toxic chemicals. Thus, we achieved the eco-friendly synthesis of silver nanoparticles with smaller size (07-33nm) by altering the pH of the reaction media.

KEYWORDS: *Hyptis suaveolens*, Optical Properties, Reaction Medium, Silver Nanoparticles, Eco-Friendly Synthesis