

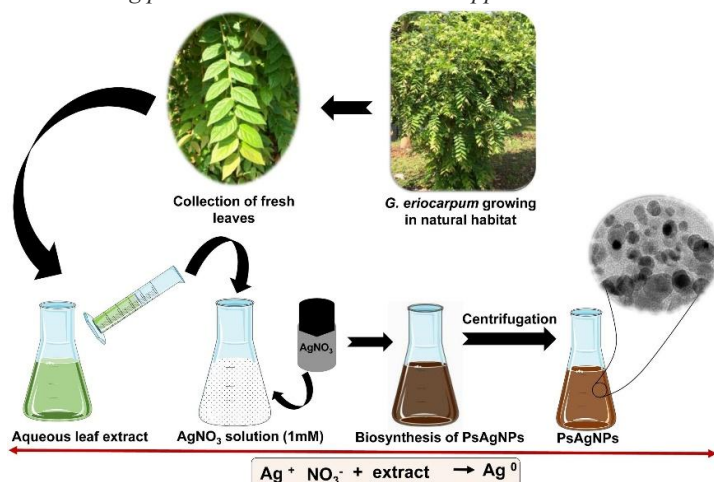
Green Synthesis of Nanoparticles Using Plant Extracts

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Abstract: This study investigates the green synthesis of nanoparticles employing plant extracts as reducing and stabilising agents. The research focuses on optimising the synthesis parameters for the efficient production of nanoparticles with controlled size, morphology, and stability. Utilising various plant sources, such as leaves, stems, and fruits, the study examines their phytochemical composition and their effectiveness in nanoparticle synthesis. Characterization techniques including X-ray diffraction (XRD), transmission electron microscopy (TEM), and Fourier-transform infrared spectroscopy (FTIR) are employed to analyse the structural, morphological, and chemical properties of the synthesised nanoparticles. Additionally, the study evaluates the nanoparticles' potential applications in catalysis, biomedical fields, and environmental remediation. This abstract provides a concise summary of the research paper's objectives, methodology, results, and potential implications, focusing on the green synthesis of nanoparticles using plant extracts as a sustainable approach in nanotechnology



Keywords: green synthesis Nanoparticles Plant extracts Sustainable chemistry Nanotechnology Phytochemicals X-ray diffraction (XRD) Transmission electron microscopy (TEM) Fourier-transform infrared spectroscopy (FTIR) Catalysis Biomedical applications Environmental remediation Sustainable materials Eco-friendly synthesis Controlled synthesis parameters