

International Conference on

POLYMERIZATION CATALYSIS, FLEXIBLE POLYMER
AND NANOTECHNOLOGY

September 06-07, 2018 Dubai, UAE

Green synthesis and structural elucidation of *Pisonia alba* leaves by AgNpsM Kavitha Rani and M Suriyavathana
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Biological methods of nanoparticle synthesis using microorganisms, enzymes/proteins and plants extracts has been suggested as possible eco friendly methods of synthesis alternatives to physical and chemical methods. Recently, nanomedicine has become a leading research field. Use of plant for synthesis of nanoparticles could be advantageous over other environmentally benign biological process as this eliminates the elaborate process of maintaining cell cultures. *Pisonia alba* leaves belongs to family Nyctaginaceae These leaves are edible. It plays an immense role in various maladies conditions and it capable properties like antiulcer, antimicrobial, antidiabetic, anticarcinoma, anti-inflammatory, hyperglycemia, antiarthritis, jaundice, swelling, antibacterial activity, thyroid hormone study. Fresh leaves of *Pisonia alba* were collected from kolli hills, Namakkal district, Tamil Nadu, India. Silver nanoparticles has attracted enormous interest because of its great potential for wide applications in food, cosmetic, clothing and pharmaceutical industries. Synthesis of Ag, Cu, Mg, Zn nanoparticles in *Pisonia alba* leaves aqueous extracts was done. nanoparticles of *Pisonia alba* leaves were characterized by UV-Visible, FTIR, TEM, SEM, EDAX, XRD and Zeta potential respectively. Phytochemical screening demonstrated that the many secondary metabolites compounds were present in AgNps and CuNps *Pisonia alba* extract. Uv-visible spectroscopy was used to monitor the synthesis of nanoparticles, the peak of AgNps of surface Plasmon resonance at 450nm, followed to CuNps 400nm, ZnPs 300nm and MgNps 480nm. The increase in the colour intensity also depends upon size of AgNps nano synthesized. FTIR measurements were carried out to detect the possible reactions for the reduction of Ag ions and Ag stabilization of Ag atoms. FTIR spectroscopy clearly indicates that biomolecules present in *Pisonia alba* are responsible for the synthesis of nanoparticles and their stabilization. 12 functional groups are detected the Frequency range 3277.06cm^{-1} corresponds to N-H bond SEM equipped with an EDX detector. SEM results shows typical cuboid structure. The elemental composition of the nanoparticles was determined by Energy Dispersive X-ray (EDX). The EDX analysis reveals the strong signal at approximately 1.5Kev of the silver region due to surface Plasmon resonance. TEM micrograph which showed the nanoparticles synthesized are spherical and their size ranges from 10 to 20 nm. The XRD crystalline nature of AgNps observed at 23.6° , 29.5° , 40.9° , 2θ value. Zeta potential provide -10mV .

Biography

M.Kavitha Rani pursuing Ph.D in department of biochemistry, periyar university, salem, Tamil Nadu, India under the guidance of Dr.M.Suriyavathana, Assistant professor. I am Senior research fellow in Rajiv Gandhi National Fellowship (RGNF-SRF) from 2015, currently working on anti Urolithiasis effect in *Pisonia alba* leaves extract. To my credit i have published two research papers.

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