



Photo-Induced Synthesis of Silver Nanoparticles using, *Syzygium cumini* Fruit Peels Extract Characterization and Antibacterial Activity Studies

Gugulothu Yaku, Bandi Rajkumar and T. V. D. Prasad Rao*

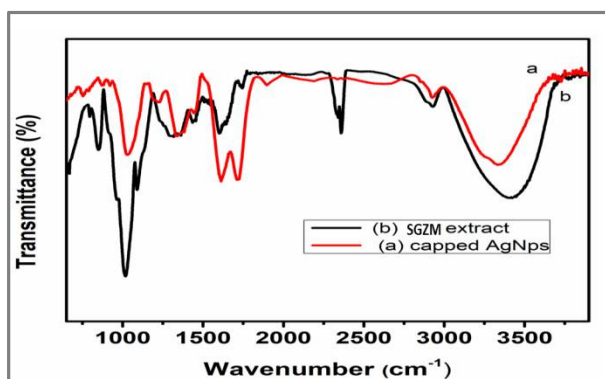
Department of Chemistry, Osmania University, Hyderabad-500007, **INDIA**

Email: theeda_prasad@yahoo.com, gyaku2011@gmail.com

ABSTRACT

Nanomaterials are playing an important role in the emerging field of nano technology. In the present work, silver nanoparticles (AgNPs) were prepared by adopting photo-induced reduction green synthesis from silver nitrate (AgNO_3) and *Syzygium cumini* fruit peelings extract, which can act as a reducing as well as capping/stabilizing agent. It is a simple and low cost and eco-friendly technique in which an external stabilizing agent is not required. The synthesized particles were characterized by using Powder X-ray Diffraction (XRD), Transmission Electron Microscopy (TEM), FT-IR, UV-Vis spectroscopy and Scanning Electron Microscopy–Energy Dispersive X-ray Analysis (SEM-EDX). The antibacterial activity of synthesized AgNPs was evaluated on both gram positive and gram negative bacteria using agar well diffusion method.

Graphical Abstract



Keywords: Silver nanoparticles, *Syzygium cumini* fruit peels extract, Photo-induced reduction, Antibacterial activity.