**BIO-SYNTHESIS OF ZINC OXIDE NANOPARTICLES BY USING LEAF EXTRACT OF PLECTRANTHUS AMBOINICUS**

Dolvin V. Sa\*, S.Jeslin Sunitha Baia, S.Sindhusha a

a\* Research Scholar, a,a\*Department of Physics & Research Center, Nesamony Memorial Christian College, Marthandam – 629165,Tamilnadu,India.

Email: dolvin2001@gmail.com

**Abstract**

The current study demonstrated the green fabrication of Zinc oxide nanoparticles (ZnO NPs) using the leaf extract of Plectranthus Amboinicus by an environment-friendly method. The leaf extract of C. amboinicus acts as capping and reducing agent during the fabrication of ZnO NPs. The synthesized ZnO NPs were characterized by powder X-ray diffraction (PXRD) UV–vis spectroscopy, scanning electron microscopy (SEM), EDX, FTIR and photoluminescence spectroscopy. The FTIR peaks due to vibrational phonons of ZnO also confirm the successful production of ZnO nanoparticles. The surface morphological studies will be performed by SEM analysis. SEM study reveals that the biosynthesized ZnO NPs exhibits a rod shape structure with an average size of 88 nm. The UV–vis diffuse reflectance spectrum study indicates the band gap of biosynthesized ZnO NPs is 3.07 eV.

Keywords: ZnO Nanoparticles, PXRD, FTIR, SEM