

## GREEN SYNTHESIS OF IRON NANOPARTICLES USING *ARTOCARPUS HETEROPHYLLUS* LAM., (JACKFRUIT) PEEL EXTRACT AND THEIR APPLICATION IN PHOTOCATALYTIC DEGRADATION OF METHYL ORANGE DYE

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### ABSTRACT

*The ecofriendly synthesis of iron oxide nanoparticles shows great promise due to its non-toxic nature and environmentally friendly characteristics. Iron nanoparticles was synthesized from Artocarpus heterophyllus (Jack fruit) peel extract. The synthesized iron nanoparticles was confirmed by characterization techniques using Fourier transform infrared spectroscopy (FTIR), X-Ray diffraction (XRD), and Scanning electron microscopy (SEM) techniques. Further, the efficacy of synthesised nanoparticles has been demonstrated in the degradation of pollutant dye Methyl orange. The experiment showed that iron nanoparticles exhibited excellent degradation activity with a high removal efficiency of 83%*

**KEYWORDS:** *Iron oxide nanoparticles, Artocarpus heterophyllus (Jack fruit) peel extract, Photocatalytic activity, Methyl orange dye degradation.*