

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELGAUM-590014



PROJECT REPORT ON

**“FABRICATION OF ZINC OXIDE-CHITOSAN BASED
PHOTOCATALYTIC REACTOR FOR DEGRADATION OF TEXTILE
DYE CONGO RED”**

Submitted in partial fulfillment for the award of degree

Bachelor of engineering

In

Biotechnology

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ABSTRACT

One of the major causes of water pollution is discharging of toxic textile dyes from industries and congo red dye is one of them. The present work concentrates on degradation of congo red using zinc oxide/chitosan conjugate (ZnO/Ch). Zinc oxide is known for its photocatalytic activity under visible spectra and chitosan is known for its good adsorption properties. Chitosan has been used to increase stability and reusability of zinc oxide. Effect of pH and concentration of dye has been studied. FTIR and SEM analysis has been done for conjugate formed. The formed conjugate has shown dual activity, one by adsorption of dye through chitosan and another by degradation of dye by ZnO. This shows that the conjugate can be used as solution for environmental problem created by dye pollution.