VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELGAUM– 590014.

A Project Report on

"Synthesis, characterization and application studies of ZnO/Ce_2O_3 nano coupled catalyst in photo catalytic degradation of Methylene blue."

Submitted in the partial fulfillment of the requirements for the award of the Degree of

Bachelor of Engineering
In
CHEMICAL ENGINEERING

Submitted by:

Kumar Abhishek	**1MS06CH024**
Naveen Kumar.R	**1MS07CH403**
Rajat Desikan	**1MS06CH034**

Under the Guidance of

Dr. G. M. Madhu
Asst. Professor, Dept. of Chemical Engineering

Department of Chemical Engineering
M. S. Ramaiah Institute of Technology
Bangalore– 560054

2009-2010

ABSTRACT:

Dye-house effluents from the textile industry impose serious environmental problems because of their color and their high chemical oxygen demand (COD) such as aesthetic pollution, interference with the transmission of light and they also upset the biological processes. Thus the removal of color and COD from dye house wastewater to meet the discharge standards is currently a major problem in the textile industry.

We seek to remove the azo dyes using photo-catalytic degradation. The catalyst used is coupled Zinc Oxide-Cerium Oxide prepared by the gel combustion method. The degradation of Methylene Blue dye is studied and the effect of various parameters like catalyst loading, presence of oxidant (Hydrogen Peroxide) and oxidant loading is studied.