

# **“SYNTHESIS OF ADSORBENT FROM SUNFLOWER SEEDS FOR TREATMENT OF INDUSTRIAL WASTE EFFLUENTS”**



## **PROJECT REPORT**

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**In partial fulfillment of the requirements for the degree of**

**BACHELOR OF ENGINEERING**

**In**

**CIVIL ENGINEERING**

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI-590018.**

**Under the Guidance of**

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**ALVA'S**  
Education Foundation

**Department of Civil Engineering**

**ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY**

**MOODBIDRI-574225, KARNATAKA**

**2019-2020**

# ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY

MIJAR MOODBIDRI D.K. -574225 – KARNATAKA.

DEPARTMENT OF CIVIL ENGINEERING

## CERTIFICATE

Certified that the project work entitled "*SYNTHESIS OF ADSORBENT FROM SUNFLOWER SEEDS FOR TREATMENT OF INDUSTRIAL WASTE EFFLUENTS*" is a bonafide work carried out by

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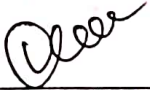
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Are bonafide students of Department of Civil Engineering of Alva's Institute of Engineering and Technology in partial fulfillment for the award of BACHELOR OF ENGINEERING in CIVIL ENGINEERING of the VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI during the year 2019-2020. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.

  
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## ABSTRACT

Activated carbons which prepared from residual or waste biomaterials are widely examined as low-cost adsorbents for wastewater treatment, as well as heavy metal ions in wastewater have become a serious environmental problem. In addition, the removal efficiency of new cheap modified adsorbent from agricultural waste is important and would probably increase the quality of the environment. Therefore, it is necessary to investigate the understanding of adsorptive removal mechanism and removal efficiency of the adsorbent.

This study aimed to evaluate the removal efficiency of heavy metal ions in aqueous solution by an adsorbent made from sunflower seed husk for industrial wastewater treatment.