

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama" Belagavi – 590 010



PROJECT REPORT ON

**“PATROL FISH TO COLLECT AND CHECK THE
CONTAMINATION OF A WATER BODY”**

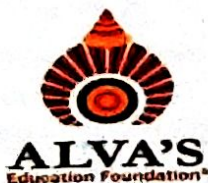
Submitted in partial fulfillment of the requirements for the award of degree

**BACHELOR OF ENGINEERING
IN
ELECTRONICS & COMMUNICATION ENGINEERING**

Submitted By

Name	USN
PRAJWAL KAMAGETHI CHAKRAVARTI P L	4AL17EC073
K B KUSHI	4AL17EC107
KAREGOWDA K N	4AL16EC029
SUSHMITHA R NAIK	4AL17EC090

**Under the Guidance of
Mr. SANTHOSH S
Assistant Professor
Department of E&C Engineering**



DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY

MOODBIDRI – 574 225.

2020-2021

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY

MOODBIDRI – 574 225

(Affiliated to VTU, BELAGAVI)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

CERTIFICATE

Certified that the project work entitled "PATROL FISH TO COLLECT AND CHECK THE CONTAMINATION OF A WATER BODY" is a bona fide work carried out by

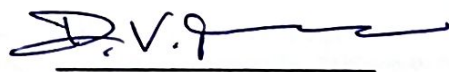
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in partial fulfillment for the award of **BACHELOR OF ENGINEERING** in **ELECTRONICS & COMMUNICATION ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year **2020-2021**. It is certified that all corrections/suggestions 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.



Signature of the Guide

Mr. Santhosh S



Signature of the H.O.D

Dr. D V Manjunatha
H. O. D.

Dept. of Electronics & Communication
Alva's Institute of Engg. & Technology
Mijar, MOODBIDRI - 574 225



Signature of the Principal

Dr. Peter Fernandes

PRINCIPAL
Alva's Institute of Engg. & Technology,
Mijar, MOODBIDRI - 574 225, D.K.

EXTERNAL VIVA

Name of the Examiners

Signature with date

1.....

2...  Santhosh S



ABSTRACT

Robotic fish is a biomimicking of a real-world fish being developed with a view to enable surface level cleaning of water bodies. The fish monitors the pH levels of the water that it is currently in. The fish has to perform the above two tasks yet exhibit a good stabilization. To establish a stabilized structure of the fish the right buoyancy and a low center of volume and mass has to be ensured. To bring in locomotion against the currents of the water and to enable enough propulsion to push forward the garbage collected requires the fish to produce adequate thrust. To transfer commands to the fish from the operator a suitable communication mechanism, a web socket accompanied by a web application on the transmitter side and a ESP32 on the receiving side enables one to send control signals which would in turn enable locomotion and surface level cleaning. To avoid any damage to the circuitry a suitable water proofing mechanism is adopted.

This project proposes a system that will help to use the Robotic Fish which is affordable, simple to use and is not a burden in terms of aesthetics. Using simple design tweaks, the number of components used in the Robotic Fish design can be significantly reduced. This reduction in the number of components drastically brings down the price of the Robot which is very affordable to place in the water to grasp the waste from the water bodies. The reduction of components also reduces the weight and thus giving a natural feel of Real Fish while using the Robotic device. The device is also 3D printed thus increasing the adaptability and weighs less thus increasing the portability of the device. A portable power supply is also used thus increasing the portability of the Robot furthermore.