

RASTRIYA BAL VIGYANIK PRDARSHNI 2023

INTRODUCTION

NAME OF INNOVATIVE IDEA :- RIVER TRASH SAVER BOAT

GENERALLY, CONVENTIONAL METHOD BASED ON MANUAL BASIS AND IT'S USED FOR COLLECTION OF WATER DEBRIS, TRASH, PLASTIC AND ALL OTHER SORTS OF IMPURITIES WHICH IS FLOATING ON WATER BODIES OR BY COLLECTING THIS IMPURITY BY MEANS OF BOAT, THRASH SKIMMER ETC. AND REMOVED THIS IMPURITY NEAR THE RIVER SHORE AND DISPOSED OF IT. BUT THIS CONVENTIONAL METHOD REQUIRES MORE MANPOWER; HENCE THIS IS OFTEN A RISKY, COSTLY AND TIME CONSUMING METHOD. BY CONSIDERING THIS ALL REMOTE OPERATED FLOATING RIVER CLEANING MACHINES ARE MORE EFFICIENT THAN CONVENTIONAL METHODS AND ALSO THIS IS EFFECTIVE AND ECO-FRIENDLY REMOTE CONTROLLED UNMANNED RIVER CLEANING BOAT

COMPONENTS USED

1. **ARDUINO BOARD:** ARDUINO UNO BOARD IS BASED ON THE ATMEGA328P. IT CONSISTS OF 14 DIGITAL INPUT/OUTPUT PINS IN WHICH 6 CAN BE USED AS PWM OUTPUTS, 6 AN ALOG INPUTS, 16 MHZ QUARTZ CRYSTAL, A USB CONNECTION, A POWER JACK, AN ICSP HEADER AND A RESET BUTTON.
- 2) **HC 05 BLUETOOTH MODULE:** THIS BLUETOOTH MODULE IS DESIGNED FOR TRANSPARENT WIRELESS SERIAL CONNECTION. THIS CAN BE USED IN A MASTER OR SLAVE CONFIGURATION; IT MAKES A GOOD SOLUTION FOR WIRELESS COMMUNICATION.
- 3) **DC MOTOR:** IN THIS MACHINE TWO DC MOTORS ARE USED AND THESE MOTORS ARE USED TO CONTROL THE DIRECTION OF THE PROPELLER.
- 4) **BATTERY:** THIS IS A LEAD ACID RECHARGEABLE BATTERY. THIS MACHINE CONSISTS OF FOUR BATTERIES WHICH GIVES OUTPUT SUCH AS 12V FOR OPERATION OF SETUP.
- 5) **CONVEYOR BELT:** IN THIS MACHINE WE USED THE POLYVINYL CONVEYOR BELT. THIS IS CONTROLLED BY THE ARDUINO UNO SYSTEM USING A MOTOR DRIVER CIRCUIT. THIS COLLECTS ALL FLOATING WASTE FROM THE WATER SURFACE AND DISCHARGES IT INTO THE DUSTBIN.
- 6) **SOLAR PANEL**

OBJECTIVES

- TO REDUCE MAN POWER
- REDUCE TIME CONSUMPTION.
- REDUCE POLLUTION.
- INCREASE EFFICIENCY.

- COST EFFECTIVENESS.
- INCREASE RELIABILITY.
- INCREASE LIFE OF AQUATIC ANIMALS.
- REDUCE USE OF NON-RENEWABLE ENERGY SOURCES.
- REDUCE THE POLLUTION OF GODAVARI RIVER.
- MAINTAIN A CLEAN AND HEALTHY ENVIRONMENT.

ADVANTAGES

- THIS CLEANING SYSTEM IS EASY TO OPERATE AND FLEXIBLE.
- THIS SYSTEM IS ECO-FRIENDLY.
- THIS REQUIRES LESS MANPOWER.
- THIS REQUIRED MORE USE OF RENEWABLE ENERGY SOURCES.
- THIS SYSTEM IS COST EFFECTIVE (INITIAL AND MAINTENANCE COST IS LOW).

APPLICATIONS

- USEFUL TO REDUCE THE WATER POLLUTION IN RIVER
- IT IS APPLICABLE TO REDUCE WATER DEBRIS, IMPURITIES, AND ALL TYPES OF IMPURITIES WHICH ARE FLOATING ON THE WATER SURFACE IN SWIMMING POOLS.
- IT IS USEFUL TO REMOVE THE ENVIRONMENTAL MARINE POLLUTION AT GODAVARI RIVER.
- IT IS USEFUL IN FISHERY PLANTS TO COLLECT DEAD FISHES. THIS IS EFFICIENT METHOD

THANK YOU