KEMENTERIAN PENDIDIKAN MALAYSIA
INSTITUT PENDIDIKAN GURU KAMPUS SARAWAK

POLITEKNIK MALAYSIA
IBRAHIM SULTAN

CODE
KA12

OCEAN OIL SPILL CLEANER ROBOT USING BUETOOTH CONTROLLER AND FILTERING

ABSTRACT

In this digital era, technology is becoming more and more advanced at a fast rate. Oil spill pollution which persists globally in marine environment, in inland waters across the world or in soils where oil is transported. It continues to grow at an alarming rate with increased levels of oil production and transport. Its causes are either accidental or due to operation wherever oil is produced, transported, stored and used on sea or land. Hence, it is almost impossible for marine life to be free from the danger of an oil spill, despite continued international regulations. Large plots of land have been permanently affected by its spillage .This ultimately affects the entire food chain, and warrants concern for humanity. The ongoing disaster in the Gulf of Mexico has encouraged myself to present this abstract. Objectives of this white paper will include testing of patented material (SorbaSolv) in separating oil from water having different oil concentrations along with its efficiency of removal. The work focuses on effect of time of contact and dosage of materials used for oil removal SorbaSolv has been effective in addressing this problem and at the same time its byproduct does not give rise to unwanted hazards to the surrounding ecosystem.. When it comes to cleaning oil spills in the ocean in Malaysia, we are using human hair stuffed inside a female stocking. This is due to that human hair are able to absorb oil well but by using this method, it will consume a lot of time to clean it thus it may endangered marine life. To solve this problem, we have decided to create a robot that is able to clean oil spills in ocean faster and more efficient. The robot we created is able to detect oil spills in the ocean by using radio-frequency sensors and clean it by filtering it.

PROBLEM STATEMENT

- Current method may consume a lot of time
- Not all oil absorb to the current filter method
- Current method requires repositioning

OBJECTIIVE

To develop a robot that is able to clean oil spills on the ocean by remotely controlling the robot using Arduino Bluetooth Controller app and filtering method.

SCOPE

1) This robot is mainly for cleaning oil spills on the ocean and not on land.
2) This robot is only able to filter petrol and gasoline.
3) This robot is able to clean with an area of 20-30 meter radius.
4) This robot is waterproof by using recycled DC motor boat.
5) The battery used is rechargeable which a Lithium Ion battery type.
6) The sensors used are Bluetooth (HC-05) for remotely controlling the robot using Arduino Bluetooth Controller app
7) The motors used for this robot are DC motors to move the robot.

WHO NEEDS

Oil and Gas Company
Government
Oil Spill Remediation Company

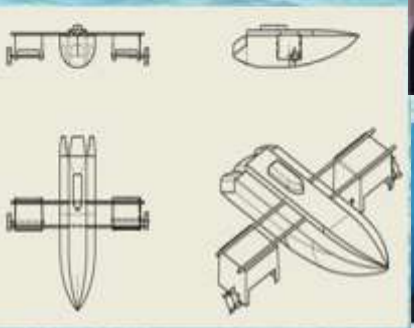
METHODOLOGY

Arduino UNO
Recycled Boat
Arduino HC-05 Wireless Bluetooth
12V DC Motor
DC Power Splitter Cable Cord
Jumper Wire (10mm)
Arduino L289N DC Motor Driver
12V Polymer Li-ion Battery
Plastic Container
Metal Stick

PRODUCTION COST

No.	Products	Unit	Costing
1	Arduino UNO	1	RM23.50
2	Recycled Boat	1	RM0.00
3	Arduino HC-05 Wireless Bluetooth	1	RM14.50
4	12V DC Motor	2	RM21.60
5	DC Power Splitter Cable Cord	1	RM4.00
6	Jumper Wire	40	RM5.00
7	Arduino L289N DC Motor Driver	2	RM11.80
8	12V Rechargeable Polymer Li-ion Battery	1	RM67.90
9	Plastic Container	2	RM4.00
10	Stick	2	RM 5.80
11	Ruler	10	RM 10.00
	Total Cost		RM168.10

DESIGN



REAL PROJECT

TEAMMATES

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