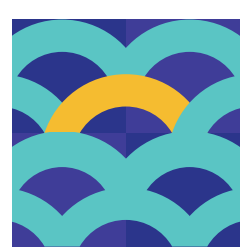


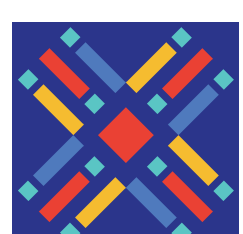
BATTERY-LESS OCEAN SAFETY BEACON

Project by:
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Higher Nitec in Engineering with Business (Year 2)



PROJECT OBJECTIVES

Using a chemical reaction of metal and salt water, a small current could be generated, thus providing a power source to light up a beacon in dark marine environment for divers and safety vest wears.



PROJECT SUMMARY

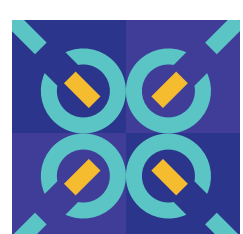
The Metal Air Safety Beacon works by generating a small amount of current through the reaction of salt water with metal alloy, which can power up low energy devices like LED, which acts as a light beacon in the event of dark sea accident.

The device helps both naval rescuers and divers to locate personnel in the dark sea environment without any battery or power source. From when the device is in a complete dry condition, it takes about 2 to 3 seconds before the light beacon is activated. This allows rescuers to locate the personnel more easily.

Other than using this device in the sea, it could also be used during a black out by simply submerging the device into a glass of salt water.

Compared to other devices in the market, this device can perform under total submersion in salt water.

In terms of duration of light emission, it is highly dependent on the size of the reactor metal alloy – the larger the metal alloy used for the reaction, the longer the light will be emitted. Based on the current size of the metal plate (approx. 60x40x4mm) in the prototype, it can last about 8 to 10 hours in the ocean. When the metal plate is totally dissolved, it can then be replaced with a new plate.

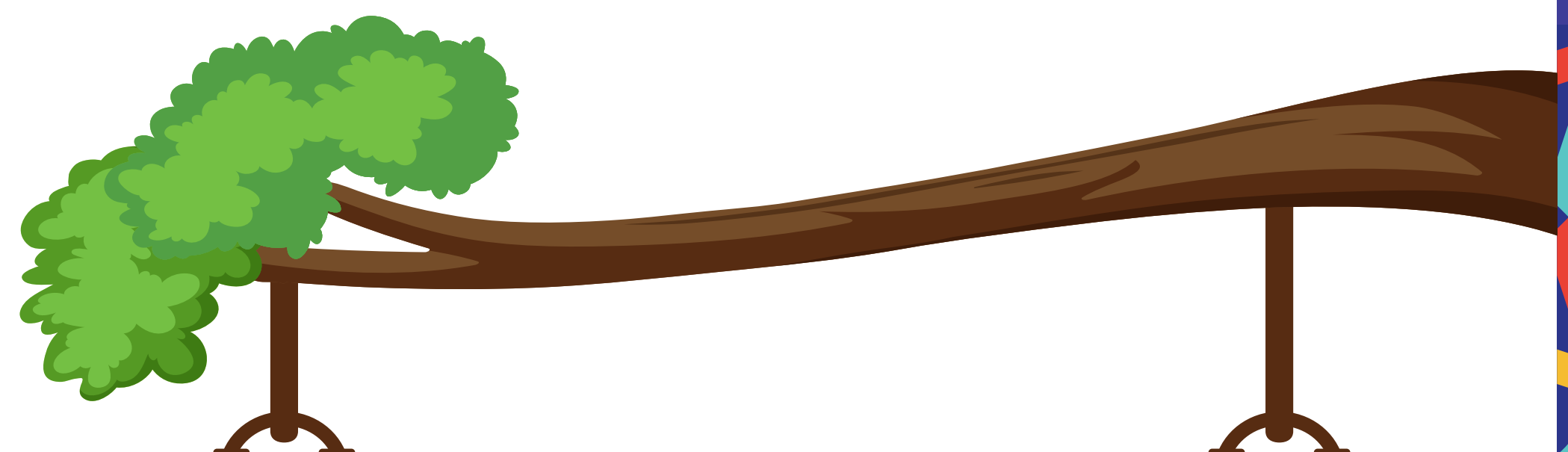


PROJECT OUTCOMES

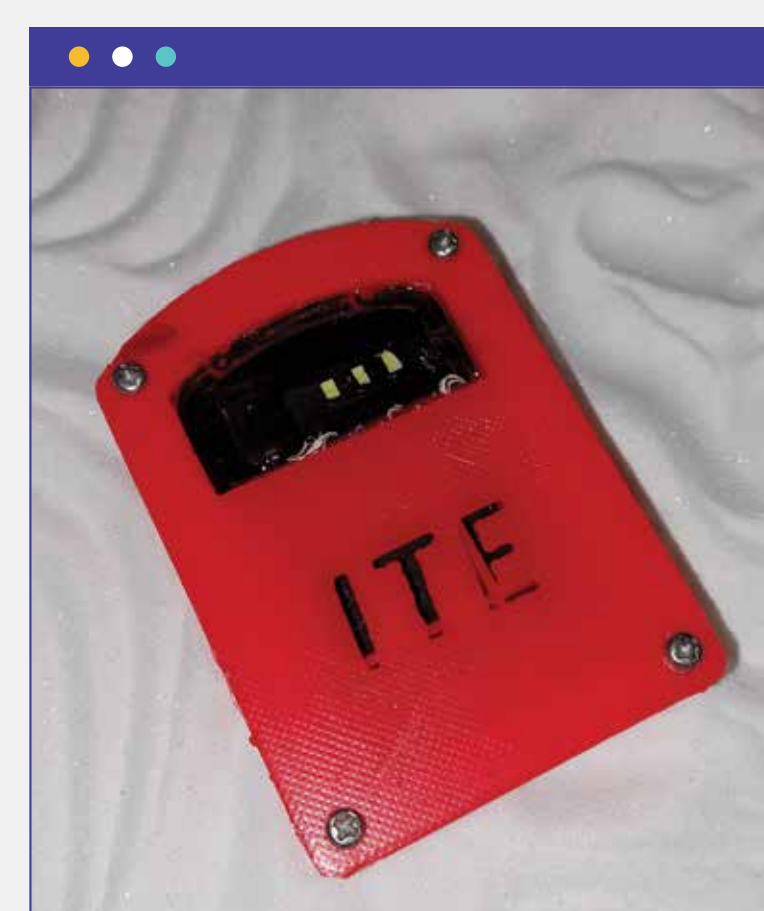
1. No battery involved.
2. Easily wearable.
3. No shelf life associated with batteries.



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Prototype Concept



Testing in Salt Water



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