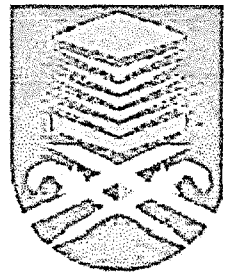

DESIGN AND OPTIMIZATION OF HYDROGEN TANK FOR FUEL CELL POWERED UAV AIRCRAFT

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ABSTRACT

This project is about designing and producing a new lightweight hydrogen tank for the fuel cell powered UAV. The tanks that are available now are steel and composite tank. The reason to develop the tank is to reduce a weight for UAV aircraft and to compare the performance between three different types of hydrogen tank. The new tank that needed to be compared is 1.5L carbonated drinks bottle. The bottle is tested by compressing air to the maximum pressure it can reach. The cap of the bottle is reinforced by using carbon fiber and epoxy to avoid from hydrogen leakage. The three of tanks are tested at fuel cell to compared the performance in terms of pressure, volume, mass flow rate and the duration of the fuel cell can operated.

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