



**DESIGN AND FABRICATION PROCESS OF THE  
FUEL CELL POWERED UAV**

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## **ABSTRACT**

An unmanned aerial vehicle, or globally known as UAV, is an unpiloted aircraft, which can be remote controlled or fly autonomously based on pre-programmed flight plans or other dynamic automation system. In the conceptual design of the demonstration UAV aircraft, it will be using a fuel cell system as its source of energy. A fuel cell is actually an electrochemical conversion device. It can produce electricity from fuel (on the anode side) and an oxidant (on the cathode side), which react in the presence of an electrolyte. The reactants flow into the cell, and the reaction products flow out of it, while the electrolyte remains within it. Fuel cells can operate virtually continuously as long as the necessary flows are maintained. This is an advantage to the UAV, since it can move further than other type of fuels. The project is deliberately prepared to design and fabricate a lightweight fuel cell powered UAV but strong enough to handle atmospheric pressure, and various kind of forces that will act on the fuel cell powered UAV once it take off into the air. The new UAV will be design by using CATIA. CATIA or Computer Aided Three Dimensional Interactive Application is a multi-platform CAD/CAM/CAE commercial software suite.

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