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SYSTEM INTEGRATION AND COUNTER-MASS BALANCE OF FUEL CELL POWERED UAV

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ABSTRACT

The primary objective of the study is to integrate a fuel cell, hydrogen tanks, brushless DC motor and other equipments. The invention of the fuel cell has brought new clean energy to industries, transportation and electrical appliances around the world, the problem are the past fuel cell system have had a low power to weight ratio. System integration is the bringing together of the component subsystems into one system and ensuring that the subsystems function together as a system. Every component like the hydrogen tank, the fuel cell, the brushless DC motor and the servos must be placed on the suitable place to ensure the space inside the structure to be completely occupied and the weight distribution for the whole UAV is right. Every component's weight must be measured first before it is placed on the UAV. For this semester, the other focus was fabricating the airframe of the UAV. As the fabrication goes on, the counter-mass balance of the UAV is also determined. The calculation was done by considering the Center of Pressure, Center of Gravity, the weight and length of the whole structure and some other parameters.

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