

عنوان مقاله:

Experimental Comparison of Thrust Performance of Two Low and Medium-Speed Motors by Wind Tunnels and Obtaining the Flight Time of a Specific Drone

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نویسندگان:

A. Hossein Gholami - Sharif University of Technology

Mohammad Haeri - Professor, Aerospace Engineering, Sharif University of Technology

Ali Reza Doodman Tipi - Faculty of Energy Engineering; University of Kerman

خلاصه مقاله:

With the advancement of science and technology, ultra-light drones with electric propulsion hold many applications. In these drones, the electric motor is the primary consumer of energy. Thus, having an accurate model of power consumption of the motor, propeller, and battery set can play an essential role in determining the drone's flight duration. This paper aims to model the behavior of two sets of motor and propeller in the wind tunnel. One motor set has a low speed, and the other has a medium speed. Also, after the above modeling, the models of speed-power, thrust-power, and speed-efficiency are extracted. Then, a lithium polymer battery with a minimal voltage drop for the drone is used. In the operating speed, the flight time of the desired drone is obtained. The power consumption, speed, and thrust models are obtained using interpolation. Finally, the motor that consumes less power and has a longer flight time is selected.

کلمات کلیدی:

U A V, Wind tunnel, Electric Motor, Power, Thrust, Efficiency, Flight Time

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