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Turbine Engine Performance Experimental Tests of Subscale UAV

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Abstract : In this study, the design, integration, and testing of measurement systems required for performance tests of jet engines used in small-scale unmanned aerial vehicles are described. Performance tests are carried out as thrust and fuel consumption. For thrust tests, measurements are made using a load cell. Amplifier and filter designs have been made for the load cell to measure accurately to meet the desired sensitivity. It was calibrated by making multiple measurements at different thrust levels. As a result of these processes, the cycle thrust graph was obtained. For fuel consumption tests, tests are carried out using a flow meter. Performance graphics were obtained by finding the fuel consumption for different RPM levels of the engine.

Keywords : jet engine, UAV, experimental test, loadcell, thrust, fuel consumption
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