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Development performance of turbine jet engine

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Jet engines are important equipment to be developed continuously. This engine consists of the following parts, compressor, combustion chamber, turbine and exhaust nozzle. Turbine jet engine operates at an open cycle called a jet propulsion cycle. Turbine jet engines are constructed mainly for air transportation while the turbine jet engines are developed for a wider purpose, ranging for research activity to hobbyist enthusiastic. Hence, this paper encompasses the design, fabrication, and testing a turbine jet engine. The temperature distribution was measured along the combustion chamber, in addition to the design of a diffuser inside the combustion chamber for purpose ideally mixing the reactors. This method is first used in this research. The design of the combustion chamber is developed to make primary and secondary air takes paths so as to allow a series of combustion processes that help to increase the speed of a jet engine. The engine is derived from an automobile turbocharger, which provided the turbine and compressor component. A combustion chamber is design and fabricated. Engine support system comprised of ignition, lubrication and fuel delivery system are installed at the engine. Thermocouple K-type are installed at four different stations on the engine flow path to measure the temperature. Fuel regulators are utilized to measure the fuel flow rate.

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