

**DESIGN AND FABRICATION OF A ROCKET ENGINE  
POWERED BY KEROSENE  
WITH COMPRESSED OXYGEN AS AN OXIDISER**

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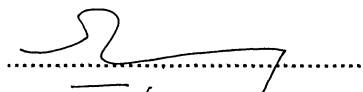
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I declare that this thesis is the result of my own work, except the ideas and summaries which I have clarified their sources. The thesis has not been accepted for any degree and is not currently submitted in candidature of any degree.

  
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## ABSTRACT

This paper presents the design, fabrication and testing of a bi – propellant rocket engine with a thrust of 250N. Kerosene and oxygen, in liquid and gaseous form respectively, are used as propellants. The test engine is fabricated from solid round bars of stainless steel on a lathe machine. A test stand is designed and built for mounting the test rocket motor. Auxiliary systems, such as the fuel and oxygen feed systems, together with the ignition system, are designed and assembled. Specific operating procedures for testing the engine and its related systems, for application during both non – firing and firing tests, are developed. The rocket engine is water – tested for pressure leaks and the spray pattern of propellant at the injector is observed. The static firing test of the rocket engine is yet to be performed. The thrust produced by the rocket motor during the static firing test is expected to be about 200N. The static firing test operating procedures are recommended to determine the performance of the rocket engine. Further recommendations for modifications and improvement of the test rocket engine are discussed. These recommendations are discussed in the context of building a UiTM rocket.

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