



***IMPACT PERFORMANCE AND FRACTURE TOUGHNESS OF  
PMC AND PMC/FRP COMPOSITE***

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“ I declare that thesis is the result of 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 concurrently submitted in candidature of any degree”.

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Date : 28 OCTOBER 2004

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## ABSTRACT

The objective of this project is to study the *Impact Performance and Fracture Toughness using falling weight Impact Apparatus to PMC and PMC/FRP composite*. In general, the project involves the following activities:

- i. *Literature Review of the Impact Systems*
- ii. *Design and Fabrication of Falling Weight Impact System*
- iii. *Preliminary investigation of Impact Strength of PMC and PMC/FRP*

The test rig consists of *Long Plates (Stand,) support plates (clamped the guide tube) base plates, hollow pipe (guide tube), Plunger (Loading), some part of instrument test and three point Bend tester*. All the materials are attached together followed the design specification. The plunger Drop in the hollow pipe at the certain height are released to fly out when falling, at the same time as the nose of the drop-weight is about to make contact with the specimen underneath. Instrument part is setting automatically, loading (plunger) is Drop to impact the Specimen and data will set up. The signals on vibrating from Load Cell send to the charge amplifier and Oscilloscope. The preliminary data are getting based on the harmonic Oscillations. Some result of test to be conducted. The data are shows that the harmonics based on the vibrating on the impact test. The graph will be plot that the Loading versus time.

This specimen can be tested based on the *Falling Weight Impact Apparatus, Three Point Bend Method and some other instrument*. The Impact Energy can be calculated based on the mass of *loading, height and load at graph*. All the experimental, fabricated work and the tests can be carried out in the faculty of mechanical's Laboratories