



## International Journal on Recent Researches In Science, Engineering & Technology

A Journal Established in early 2000 as National journal and upgraded to International journal in 2013 and is in existence for the last 10 years. It is run by Retired Professors from NIT, Trichy.

It is an absolutely free (No processing charges, No publishing charges etc) Journal Indexed in DIIF and SJIF.

**Research Paper**

Available online at: [www.jrrset.com](http://www.jrrset.com)

**Chief Editors 1 : Dr. M.Narayana Rao, Ph.D., Rtd. Professor, NIT, Trichy.**

**(Engg.&Technology division)**

**2 : Dr. N.Sandyarani, Ph.D., Professor,**

**Chennai based Engg.College, (Science division)**

ISSN (Print) : 2347-6729

ISSN (Online) : 2348-3105

**Volume 2, Issue 10,**

**October 2014**

**DIIF IF :1.46**

**SJIF IF: 1.329**

---

### Study And Analysis Of Crankshaft Belonging To A Single Cylinder Si Engine

D.Karthikkannan, S.Mohammed Azarudeen and Rm.Sai Annamalai

**Abstract -** A crankshaft is a major functional part of the SI engine which is used to transfer the power from the engine to the various output devices such as the gearbox, lubrication oil pump, water pump etc. The life of the component is a major parameter for setting the maintenance schedules for repair and replacement. Fatigue is a major source of failure of the components that are subjected to cyclic loading. FEA is a most widely used tool to perform various analyses on any automotive component, designed in the recent days. It is customary to perform FEA on every crankshaft (re)designed. The current work focuses on finding the fatigue life of the component. A model of the component is discretized to FE model using a popular pre-processor, hypermesh. The FE model is solved using ANSYS. A transient analysis of the crankshaft with the load varying (in magnitude and direction) throughout one cycle is carried out. The stress in the analysis is used as input for finding the fatigue life of the crank shaft. The result includes the stresses due to the crankshaft and the fatigue life factor of the crankshaft. The result obtained will be useful for finding the life of the component and to specify the schedule for maintenance for repair and/or replacement. The analysis procedure will be standardized to be performed in other optimized models of the crankshaft.