

ACTIVITY 4: How to read patent documents and extract information [100 marks]

BMA3623/ENGINE DESIGN

1. Please read the following paper:

M.R. Hanipah, et al., Recent commercial free-piston engine developments for automotive applications, Applied Thermal Engineering (2014), <http://dx.doi.org/10.1016/j.applthermaleng.2014.09.039>

Or the preprint version uploaded in OCW.

2. Select TWO patents on the free-piston engine design cited in the paper and discuss in your own group to obtain the following:
 - a. How the engines work
 - b. The essential components patented
 - c. Novelty of the inventions

Write a summary and create your own interpretation of the invention based on your understanding from the patents.

You can also use the following references:

1. R.L. Norton, 2012. Design of Machinery: An Introduction to the Synthesis and Analysis of Mechanisms and Machines, McGraw-Hill Education; 5th edition.
2. Heywood, J. B. (1988). Internal Combustion Engine Fundamentals, McGraw-Hill International.
3. Willard W. Pulkrabek (2013), Engineering Fundamentals of the Internal Combustion Engine Pearson Education Limited; Pearson New International Edition edition