DEVELOPMENT OF A LOW COST LIM

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ABSTRACT

In the era of well-developed technology, the product of technology is emerging in endless stream. Linear Induction Motor (LIM) is becoming more popular and widespread use specific for industry purpose such in Japan and China. Linear Induction Motor operates similarly to the concept of typical rotary induction motors. It can be constructed by unrolling and flat out of rotary machines in order to produce linear motion. The advantages of LIM is less pollution to environment due to it is not operating based on fuel or petrol but is in electromagnetic characteristics. Besides that, it produces less noise because it is non-friction between the stator and rotor part. On the same time, there are some disadvantages or weaknesses that affect the performance of LIM. Some common applications of LIM are high-speed transportation, military weapon and so on.

The ultimate goal of this project title, "Development of Low Cost LIM" is design and analysis the characteristics of LIM and suggestion is given to overcome the problem to obtain a better machine. This project was using two different types of software which is MATLAB R2009a and COMSOL MULTIPHYSICS 4.1 software. Mathematical approach of LIM model is then converted into MATLAB code for calculation purpose. While COMSOL MULTIPHYSICS software is used to analyze the 2-dimensional meshing diagram of LIM model. With the aid of software method, it is clearly stated on how a paremeter affect on the performance and efficiency of LIM. For example, the effect of changing in pole number will affect the output thrust value and efficiency. Hence, analysis and discussion will be included in this project.

Overall, the project is considered to be partially successful as some part of objective is partially achieved.