



**DESIGN AND DEVELOPMENT OF FRICTIONLESS AUTOMOTIVE
TRANSMISSION: POWER TRANSMISSION ANALYSIS WITH VARIABLE
SPEED MOTOR**

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ABSTRACT

The rapid growth in automotive industry has been widely spread worldwide. The strong competitions among the manufacturer become more competitive and aggressive due to the demand nowadays. Furthermore, the high expectation from the consumers who demands the better engine performance, urban exterior shape, efficient fuel consumption, better interior design and effective cost has created the tough challenges to all the manufacturer in order to attain the standard. As the result, all the aspect in designing a car must be analyzed and observed deeply to ensure the requirement has been fulfilled. In this project, the main focus is on the fuel economy and also the aspect of the transmission system efficiency. This system offer more option in term of flexibility. Nevertheless, to attempt in the improvement of the fuel efficiency the introduction of the torque converters has been implementing. Also in the higher gear ratios it will eliminate the power loss. However in this project, the use of torque converters is dismissed. The focus is on the new concept of the automatic transmission where the mass of the cam will generate the torque that will be converting to the power at the output section. As the result, the weight and balance element plays the major key role in order to ensure the system works smoothly and efficiently. Based on the literature review, observations and study from the previous project there are several problems has been occur such as excessive vibration, insufficient bearing tolerance, high friction, misjudgment in the measurement element and excessive weight for some parts. In order to cater all these difficulty there are some changing elements and method will be apply. Fabrications are necessary for all most part except the gears, bearings and pulleys. Hence, several recommendations have been propose to ensure the system works smoothly and efficiently such as the changing in measurement in some parts and the introduction of the new method for the system. The new idea for the design has been develop in order to accomplish the goals of the project. Furthermore, the introduction of the 1st and 2nd inner plate with new thickness and also the new bearing diameter will ensure the system give the more balance and smooth power transmit.

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