DEVELOPMENT OF AUTOMATIC DEVICE FOR THE PREDICTION OF NEXT OIL CHANGE REQUIREMENT FOR AN AUTOMOBILE

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" I declared that this thesis is the result of my 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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ABSTRACT

Engine lubricants are complex and highly engineered fluids that are designed to allow perfect and proper engine performance over a long service time. The engine oil ability becomes degraded with engine operation and time. Currently, there is no specific ways or system that uses any automatic device to predict the next oil change for an automobile. Lubricating oil can only be checked manually which can cause misinterpretation especially if it is not done properly. The aim for this project is to develop a simple device to predict the next oil change requirement for an automobile. For this reason, factors such as viscosity, temperature and current need to be considered. Previous research showed that viscosity is directly proportional to the current of the motor. Taking advantage of this knowledge, a 12V DC motor with blade attached to one end is used to stir the lubricant. The lubricant temperature is kept constant and the current that went through the motor is recorded by the digital multimeter to establish the relationship of current and time in a form of a graph. The data transmitted from the current sensor and digital multimeter of the automated device is shown on the display screen in order to show the reading of current whether there is a need in replacing the oil or not. The high current recorded indicate high viscosity of lubricant oil and kept degraded as it is heated constantly over time. The method proposed act as a reminder for the motorist to replace lubricant oil on appropriate time. The range of current is in between 30 to 40 milliAmpere which indicated the minimum viscosity reading of oil lubricant that need to be changed.

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