PREDICTION OF ELECTRICAL AND THERMAL POWER OF A PEM FUEL CELL BY PROGRAMMING USING MATLAB-SIMULINK

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"I declare that this thesis is the result of my own work except the ideas and summaries which I have clarified their sources. This thesis has nit been accepted for any degree and is not concurrently submitted in candidature of any degree"

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ABSTRACT

A final year project topic has been selected. It is about "Prediction of Electrical and Thermal Power of a PEM Fuel Cell by Programming Using MATLAB-Simulink". The main propose of this project is to simulate and predict the electrical power produced by the Fuel Cell in a certain condition such as operating temperature, pressure, and other input parameters that operate the PEM Fuel Cell. In extra, the losses power of the Fuel Cell in term of heat also obtained. By the way, the heat waste will be treating by cooling system in the thermal power. Hence, the Fuel Cell's temperature will be ensuring in the appropriate range (50 – 100°C). The project started by obtaining the mathematical models of the electrical and thermal power from previous researches and journals. Then, all the parameters that involved in the mathematical models will be identified. In further actions, the mathematical models will be converted into MATLAB-Simulink models. Once the Simulink models generated Grapical User Interface (GUI) will be follow. The results obtain will be validate by doing some own case study and comparing them to related journals that related to this study.

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