



AN ALTERNATIVE FOR VAPOR COMPRESSION REFRIGERATOR BY USING PELTIER ELEMENT

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POLITEKNIK MUKAH

SESSION: DECEMBER 2016

PERPUSTAKAAN 12364 Politeknik Mukah Sarawak	
No. Perolehan	BP 0000 2930
No. Pengkelasan	620.0076 ALT
Tarikh	8 / 1 / 19



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This report is submitted to the Department of Mechanical Engineering in partial fulfilment of the requirements for graduation Diploma in Mechanical Engineering

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PROJECT REPORT VERIFICATION

This report entitled An Alternative for Vapor Compression Refrigerator by Using Peltier Element has been submitted and reviewed as to meet the conditions and requirements of project writing.

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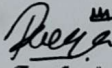
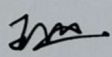
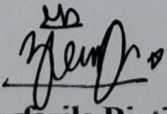
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ACKNOWLEDGEMENT

We would like to extend our utmost gratitude to our supervisor, Mr Ahmad Amin Bin Abdul Rahman, for the unwavering guidance and support through the completion of the project.

We would also like to express our appreciation to Politeknik Mukah, Sarawak for giving us the golden opportunity to do this project.

Nevertheless, we express our gratitude toward our families and colleagues for their kind co-operation and encouragement which help us in completion of this project.

And finally, last but by no means least, also to everyone that support and encourage us to complete our final year project.

Thanks for all your encouragement.

ABSTRACT

An alternative for vapor compression refrigerator by using Peltier element is another alternative that can help students to store their food especially food such as fresh milk and fruit in the hostel. This research is produced to build a refrigerator by using Peltier element and to design a device that can keep food for a longer period than the room temperature. By using an alternative for vapor compression refrigerator by using Peltier element could save much energy usage and it also can be powered by a DC current. The method that had been used to build this device are fabrication process and analysis the temperature that can be achieved by the Peltier element. As for the result for this research it has achieve the objective by producing a refrigerator by using Peltier element. The minimum temperature that can be achieved by using Peltier element is 11°C within 45 minutes.

(Keywords: Vapor compression refrigerator, thermoelectric cooling, Peltier effect, thermoelectric refrigeration)

ABSTRAK

An alternative for vapor compression refrigerator by using Peltier element adalah salah satu pendekatan yang dapat membantu para pelajar untuk menyimpan makanan seperti buah-buahan dan minuman di asrama. Kajian ini adalah untuk membina peti sejuk yang menggunakan Peltier element dan mencipta satu alat yang dapat menyimpan makanan dan minuman untuk jangka yang agak lama berbanding dengan penyimpanan di suhu persekitaran. Selain itu, dengan menggunakan an alternative for vapor compression refrigerator by using Peltier element dapat menjimatkan penggunaan tenaga dan ia juga dapat dihidupkan dengan menggunakan arus DC. Proses yang digunakan dalam penghasilan projek ini adalah dengan menggunakan kaedah fabrikasi dan analisis suhu yang dapat dicapai oleh Peltier element. Hasil daripada kajian ini telah mencapai objektif dengan terhasilnya sebuah peti sejuk dengan menggunakan Peltier element. Suhu minimum yang dapat dicapai oleh Peltier element ialah 11°C dalam masa 45 minit.

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