



**DESIGN AND PERFORMANCE OF PASSIVE SOLAR  
COMPOUND PARABOLIC CONCENTRATING COLLECTORS**

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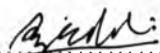
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“We declare that this thesis is the result of my own work except the ideas and summaries which we have clarified their sources. The thesis has not been accepted for any degree and is not currently submitted in candidature of any degree”

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## **ABSTRACT**

In our daily life, we need energy for living. We use energy for everything from cooking, to moving the vehicles until generating power plant. But it is getting less day by day. The energy source that we using like firewood, charcoal, petroleum, all are unrenewable, it will not last long instead we need to find it more as the use of it is increase. But it is also not clean and exhaustible that can contribute pollution to the world.

This project studies the performance of passive compound parabolic concentrating (CPC) solar collector under Malaysian climatic conditions. It involves the design of two types of CPC collectors, the hexagonal and the octagonal shapes. The performances of these two collectors are then compared with two other established shapes, the sphere and the square. The collector can collect both solar and daylight energy. This report measures the illumination concentration ratio (CR) produced by the collectors. It was found that the CPC collector produces the highest CR.

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