LAPORAN PROJEK TAHUN AKHIR

KURSUS DIPLOMA LANJUTAN KEJURUTERAAN JENTERA

KAJIAN KEJURUTERAAN, ITM, SHAH ALAM

THE
DESIGN OF SOLAR POWERED
REFRIGERATOR

BY:

ABOO BAKAR MERICAN B. ISMAIL MERICAN

MOHD. HASHIM B. ABD. RAHMAN

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PREFACE

Solar refrigeration is a means of using power a refrigeration system. This energy can be transform in two ways, indirectly or by direct conversion. First, solar energy can be converted to electrical energy follow by Mechanical energy and thence operate a conventional vapour compression refrigerator. Secondly solar energy can be used to heat the working fluid in a vapour absorption refrigerator, for this case it can be considered as direct conversion. Indirect conversion has a low efficiency and high cost of fabrication as the first case.

The absorption refrigeration system can be classified into two types, intermittent and continuous. The intermittent refrigeration cycle has two major operations, regeneration and refrigeration. Regeneration is the process of heating the refrigeration - absorbent fluid to drive off the refrigerant absorbent is allowed to cool and refrigeration takes place when the liquid refrigerant is reabsorbed by the absorbent.

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1.0 INTRODUCTION

Redesign the refrigeration cycle using the principle of electrolux system. The design base on the previous design with consideration to the combination idea of previous report, AIT report and the references. The outcome of the design more or less is the same, big rombous and could not be function unless precision work were carried out with longer time factor. So as to simplify it, by buying the second hand Electrolux refrigerator system (old type), repaired, and a study on it as experiment. Furthermore our absorption were suppose to be base on Electrolux system. The original design of solar collector which could not produce temperature of more than 60°C, unless properly design with special material and angle of tilt to be consider. Out part is to proof that wheather by moving hot water at 100°C can it produce ice, since the flame temperature is about 755°C. If we can produce at 100°C, then we can varies the various temperature to find out the actual temperature required by the generator. If it work then we can conclude that solar powered refrigerator by continuous method if it is possible.