## LIST OF CONTENT

Chapter	Page
I INTRODUCTION	1
Rationale for the study	1
Statement of the problem	
Purpose of the study	2
Scope of work	3
Limitation of the study	
II REVIEW OF RELATED LITERATURE RESEARCH	4
Solar energy	
Evacuated heat pipe solar collector	7
Technologies for solar-driven cooling	
Closed - cycle systems	10
III METHODOLOGY	13
Description of absorption system	. 13
Components of the solar absorption cooling system	14
Thermodynamic analysis	15
Explanation of the solar absorption cooling system at SERT(SACS)	20
Measurements	21
Calculations of the SACS performances	22
Economic section	24
IV RESULTS AND ANALYSIS	27
The Performance of the system2	27
Economic analysis	35
Calculation	35

## LIST OF CONTENT (CONT.)

Chapter	Page
V CONCLUSION AND RECOMMENDTION	40
Conclusion	40
Recommendation	41
REFERENCES	. 42
BIOGRAPHY	. 44
รายาลัยพ <sup>1</sup> วายาลัยพ <sup>1</sup>	

## LIST OF TABLE

Table		Page
1	Recommended average days for months and values	
	of <i>n</i> , (Klein. 1977.)	5
2	The monthly Average Daily Radiation on a horizontal surface	7
3	The averages of data collected from November 16, 2005	
	to December 15, 2005	27



## LIST OF FIGURE

Figure		Page
1	Schematic of Evacuated Heat Pipe Tubes	8
2	Test results of National and International authorities	9
3	Coefficient of Performance (COP) as a function of (solar)	
	heat supply Temperature for single -,double - and triple-effect	
	LiBr-water absorption	11
4	Schematic diagram of the solar-powered air conditioning system	14
5	Schematic of a single effect LiBr-water absorption system	17
6	Components of the SACS at SERT	20
7	Measurement points of the SACS at SERT	21
8	Solar irradiation on the titled plane on December 6, 2005	28
9	Supplying hot water temperature and Chilled water temperature	29
10	The difference of inlet and outlet temperature at Generator	
	and Evaporator	30
11	Heat exchanged at Generator $\mathbf{Q}_{\mathbf{g}}$ and Evaporator $\mathbf{Q}_{\mathbf{e}}$ VS supplying hot water	,
	Temperature	31
12	Variations of the COP and Radiation	32
13	The variation of the cooling COP with the temperature	
	of supplying hot water	33
14	Efficiency of collector and irradiation	34
15	The overall coefficient performance of the solar absorption	
	cooling system	35
16	Payback period on increasing electricity price	37
. 17	Payback period on both effects of increasing electricity price	
	and decreased heat pipe solar collector tube price	38
18	Cooling load yield per unit cost	38