FINAL YEAR PROJECT REPORT

SOLAR WATER COOLER USING PELTIER EFFECT

A PROJECT REPORT

Submitted by

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in partial fulfillment of the requirements for the award of degree of

BACHELOR OF SCIENCE
IN
ELECTRICAL ENGINEERING

APPROVED

Project Advisor_____ Director Projects _____

DEPARTMENT OF ELECTRICAL ENGINEERING

SCHOOL OF ENGINEERING

UNIVERSITY OF MANAGEMENT AND TECHNOLOGY

SEPTEMBER 2014

ESTIMATED PROJECT TIMELINE

TASK	WEEK																										
	11/1	11/8	11/15	11/22	11/29	12/6	12/13	12/20	12/27	1/3	1/10	1/17	1/24	1/31	2/7	2/14	2/21	2/28	3/7	3/14	3/21	3/28	4/4	4/11	4/18	4/25
Decide Topics of Interest																											
Literature Review																											
Decide on Specific Project Idea																											
Decide Project Modules																											
Search of related projects																											
Set up Programming Environment																											
FYP-1 Progress Report																											
Prepare presentation																											
Create Initial Test Data Plan																											
Decide the Prototype to use																											
Decide Project Proceedings																											
Perform Software Simulations																											

Hardware Implementation																									
Create Final Test Data																									
Perform Final Tests and Analysis																									
Write Final Paper																									
FYP-2 Presentation																									

Work Distribution:

Joint Effort

ID 101519168

ID 101519107

ID 101519100

Signature:

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University of Management & Technology
School of Engineering
Department of Electrical Engineering

Senior Year Project- I Evaluation

Project ID 9 Date 23/04-2014

Project Title: Solar Based Water Cooler

Particulars of the Students

Code	ID	Name	Semester in which Registered	Contact Number
A	101519-107	Shamshair Ali Rizvi	8	0314-8621255
B	101519-168	Syed M. Ali	8	0334-6023290
C	101519-100	Farooq-e-Azam	8	0303-9690657
D				

S.No	Topic	Max Marks	Obtained Marks
1	Problem Statement	10	7
2	Objective/Scope	10	6
3	Methodology	10	7
4	Scope of the Project/Utilization	10	6
5	Literature Review/Data collection	10	6
6	Design and Analysis	10	7
7	Expected Output/Outcome/Final Deliverable	10	7
8	Conclusion and Recommendation	10	7
9	FYP-1 Documentation	20	14

190 X20 = 12.66
300

67

Suggested Changes	→ Temp feedback system with 2°c Resolution → 2-axis tracking control. → compact integrated solution.

Name: Dr. Amir Masood Khalid. Role: (adviser/member): member Signature:

Declaration of Originality

We hereby declare that all the work related to this project is our own. To the best of our knowledge it doesn't comprise of any other's material work published in any article, blog or book or written at any source which have been endured for the award of any other degree in this institution or at any other institution and that this report has been written in our words rather than the quoted and material with citation, which are drawn from the literature and researches.

Syed Muhammad Ali Signature: _____

Syed Shamshair Ali RizviSignature: _____

M. Farooq-e-Azam Signature: _____

Acknowledgement

First of all our deepest and utmost thanks to Almighty Allah for providing us power, courage and stamina.Our deepest gratitude to our project advisor Miss.AyeshaIqbal for her entire guidance and support throughout the project. Without her we could have never done with this project. Our ultimate appreciation to our families for their care, love and supporting us morally and financially. We would also like to thank our friends, batch mates for sharing their knowledge and wishing us, specially our dear friend Mr. Ali Sajjad for his greatness.

ABSTRACT

During the past few decades the demand of alternating energy source has been dramatically increased. The need of this alternating energy is due to increased fatigue in the current renewable energy resources. PV panels are considered to be the best sources to convert the infinite amount of solar energy in to the electricity. Our project comprises of the simulation of the circuits, design, mechanism and construction of the system which comprises of PV panel, controlled by the dual axis tracker whose movement is further controlled by the PIC microcontroller 16F877A. Solar panels followed by the solar trackers accelerate the power efficiency. The mechanism of the solar panel states when the solar light strikes the panel, the photons present in the sun radiations and electrons in a semiconductor materials forms junctions and produces small amount of voltage. Cooling the drinking water via solar energy is a good concept. The cooling section includes two Peltier devices, heat sink, two cooling fans and temperature control sensors which would cut off the voltage supply to the Peltier and cooling stops. The efficiency is improved up to 30% due to dual axis tracker rather than using a static panel.

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