FINAL YEAR PROJECT REPORT

DESIGN, IMPLEMETATION AND COST ANALYSIS OF A BUCK CONVERTER TO CHARGE 12V LEAD ACID BATTERY

Submitted by

Muhammad Rizwan (111619-102)

Malik Asad Hayat (111619-098)

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

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DECLARATION

We hereby declare officially that our project work entitled, "**Design, Implementation and Cost Analysis of a Buck Converter to charge 12V Lead Acid Batteries**", submitted to the "Department Of Electrical Engineering" under School Of Engineering at **University Of Management And Technology**, is a record and written evidence of our work performance under the guidance of **Mr. Muhammad Shoaib** (Assistant Professor at EE Department). This document along with its project work is submitted in the partial fulfillment of the requirements of the award of the degree of Bachelor of Science in Electrical Engineering. The results embedded in this document and performance done is not done or submitted to any other University or Institute for the award of any degree or diploma.

MUHAMMAD RIZWAN Signature: _____

MALIK ASAD HAYAT Signature: _____

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ABSTRACT

This final year project describes the design and implementation of a buck converter to charge 12V lead acid batteries.

Our buck converter consists of a MOSFET, diode and inductor. The MOSFET acts as a switch and is turned on and off by a Pulse Width Modulated (PWM) controller. This means that by controlling the duration when the switch is on, the voltage or current at the output can be regulated. Our controller is able to sense the battery's voltage level and apply the appropriate charging algorithm accordingly. 3 LEDs are used in combination to inform the user of the charging status.

TABLE OF CONTENTS

LIST OF FIGURES