CONTROL THE TEMPERATURE AND HUMIDITY SYNCROUNOUSLY IN OPERATION THEATER

MUHAMMAD BASHIR BIN MANSOR
(2007271124)

A thesis submitted in partial fulfillment of the requirement for the awards of
Bachelor Engineering (Hons) Mechanical

Faculty of Mechanical Engineering
Universiti Teknologi MARA (UiTM)

MAY 2010

ACKNOWLEDGEMENT

ABSTRACT

Patient comfort, infection control, and drying of mucous coating are some reasons why temperature and humidity control are important in Operation Theater (OT). Health care facility guidelines recommend maintaining 50% to 60% relative humidity in the OT during surgical procedures. It also recommended the OT temperature be maintained in a range of 18°C to 22°C. Three main requirements influence the control of the temperature of OT is to avoid humidities, promote the comfort and working efficiency of the staff, and conserve the patient's resources. Research by ASHRAE has found that 50% relative humidity is ideal for building occupants to avoid the hazards of fungi, bacteria, viruses and respiratory difficulties, and also controls airborne bacteria. Since the OT operate continuously, thus the system of air-conditioning that can automate the controller of ON and OFF the heaters and motorized valve continuously is needed. The PIC Microcontroller controlling technique has been selected for this project. The technique applied programming code that write in programmer tool which is mikroBasic PRO for PIC. The programming code will be simulated in PIC simulator software and then the coding will download into PIC 16873 microchip if there is no error. The PIC 16873 microchip now connected to controller hardware which contains input components, output components, LCD display and main board components. The present overview shows this technique provide the simplest and the cheapest technique for controlling the temperature and humidity simultaneously. Such an overview provides an insight into current control method and has the comprehensive information about a variety of control techniques in the field of HVAC.

TABLE OF CONTENTS

CHAPTER III   METHODOLOGY

CHAPTER TV   RESULTS AND DISCUSSIONS