ABSTRACT

This project aims to design and implement an electronic device to measure the energy of defibrillators through a microcontroller connected to an Android device via bluetooth in order to show information easily to users. Defibrillator is an equipment used in critical areas of hospitals and health centers, because it is the only instrument capable of treating and preventing two types of heart diseases known as cardiac arrhythmias: ventricular fibrillation and tachycardia. Defibrillator acts directly on the human body producing a maximum voltage of 4000 volts DC at 60 amps approximately, in a download time of around 1-2 milliseconds to generate energy which is equivalent to 400 joules (joules = watts per second). For this reason, quality parameters of defibrillator must fulfill the operational standard range, which is possible through preventive maintenance. This maintenance is made by using a defibrillator measurer that serves to determine all important parameters that are generated at the time of defibrillation. In this sense, this project is designed to measure the energy of defibrillators that generate forms of sine-waves, monophasic and biphasic, exponential waves with or without truncation in the range of 10 to 500 joules. Additionally, the project have an application that develops a maintenance task which indicates whether the equipment is in the appropriate range in correspondence with the energy values according to performance standards.

KEYWORDS:

- **DEFIBRILLATOR**
- **ENERGY**
- **BLUETOOTH**
- **METER**
- **WAVEFORM**