

# Search the pacemaker for a distance

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**Abstract:** Computer science has become one of the most important sciences that have an effective role in the various scientific fields, including the science of artificial intelligence, which works on simulating human behavior in different scientific fields. The most important of these fields is the field of medicine. Experience in diagnosis of diseases and treatment description and using this medical software and the development of the science of artificial intelligence on the development of medical devices. An example of AI is the pacemaker. Pacemaker Implantation is a surgical procedure in which an automated pacemaker is implanted by replacing the infected cells that regulate the heartbeat in the patient's heart. [1] For cells that specialize in the generation and transfer of the symbol regulating the heart rate, because of the loss of these cells for their performance or as a result of dysfunction. Natural organized cells do their job by sending electrical signals through the nerve fibers, resulting in a contraction of the muscle fibers of the heart, which leads to the heart's vital function of pumping blood across the body. (2)

**Keywords:** Remote pacemaker, AI

## I. INTRODUCTION

Pacemaker is a small device with a small battery. Its function is to send regular electrical alerts to the heart, which in turn leads to regular and appropriate heart contraction to pump blood to all parts of the body.[3]

The parts of the regulator are limited to two main parts:

1. Alarm Generator: It is a small metal box inside the operating battery in addition to many complex electrical circuits that monitor the count of the heartbeat as well as the power of electric alert directed to the heart.
2. Electrical wire: It is a flexible wire that connects the right ventricle and ventricle, and transmits electrical alerts to and from the heart.

The artificial pacemaker consists of a small capsule with a battery and a flexible electrode, through which the electrical signals produced by the pacemaker pass through to the heart muscle cells.

But the pacemaker device contains many difficulties, it is difficult to control the heartbeat remotely. There have been many studies on how to develop the pacemaker and turn the pacemaker and remotely follow the patient's case through the patient and this was recorded the idea of innocence The invention of the Academy of Scientific Research in Egypt No. 4/2017.

## II. DISCUSSION

-IPG source or battery

-Lead and wire lead

-Cathode (cathode) Anode

-The anode (cathode) cathode

-MUDEL BZER chip

-RFID chip.

Contains a battery that provides the power to send electrical impulses to the battery circuit

## III. TEST AND RESULTS

It works to regulate the heartbeat If increased pulse is a small device helps control your heart rate by:

- a) RFID technology connected to the BAZER MUDEL chip and pacemaker device, which converts the data encoded into digital data and receive and transmit the data that transforms.
  - b) Use of a website that works to retrieve medical data of the patient and know where the patient (Heart rate data per minute).
  - c) Know the location of the patient and measurement of heartbeat by BAZER MUDEL and control these pulses through the ECG program connected to the pacemaker pacemaker developed.
  - d) Helping to record patient data and giving each pacemaker a code on a database containing all patients' devices.
  - e) Converting RFID waves into electromagnetic waves using metamaterials, which works to absorb these waves and transform them into hydroelectric energy and thus ignorance of this device works continuously without battery life.
- Accelerate heart rate when it is too slow.
  - Slow heart rate when it is too fast.
  - Help regulate rhythm regularly.
  - Tracking the heartbeat remotely through a 3.75 Hz RFID chip.

## IV. RECOMMENDATIONS:

- a. Providing a website and doctors specialized in dealing with cases of the patient remotely.
- b. Updating the patient database on the website.
- c. The presence of trained doctors to deal with modern software and technological means.
- d. Provide a specialized team of training doctors to deal with the pacemaker and follow-up the situation of the patient remotely.

**V. REFERENCES:**

- [1] <http://www.bbc.com>
- [2] Heart Disease and Pacemakers.
- [3] Pacemaker Insertion | Johns Hopkins Medicine HealthLibrary Copy saved July 11, 2017 on Wi-Pak Mashin.
- [4] Medscape: Medscape Access Reserved copy 05 August 2017 On the site of Wi-Pak Mashin.

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