

Design of Implantable Antenna for Wireless Bio-Medical applications

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Submitted: 15-06-2022

Revised: 25-06-2022

Accepted: 27-06-2022

ABSTRACT - Presently, the medical technology involving in the reduction of complexity in the medical treatment process. Implantable antenna is a miniature sized antenna and It is low cost. The implantable antenna is a type of an antenna of implantable device that it is put in the human body. We are going to use the software application computer simulation tool (CST). CST is an 3D plot which is used for low and medium frequency range. Implantable antenna can be used in two ways and they are sensor antenna and simple antenna. When an implantable antenna is placed in human body, based on the permittivity of muscles, the radiation pattern of an antenna will be changed, it act as an sensor antenna and the permittivity varies for each and every person. failure, cancer, diabetes, etc. It is very much useful to diagnose the medical condition of the patient. Implantable antenna can also plays a vital role in Bio medical applications. This paper mainly aims to summarize the recent implantable antenna technologies.

Keywords: Computer Simulation Tool(CST), Industrial, Implantable Antenna, ISM band, Skin Specter.

I. INTRODUCTION

Implantable antenna technology is one of the current biomedical applications. Implantation is being used in both Biotelemetry and Biomedical therapy. The trend of implantation started in the year of 1960's with implantable pace makers and is emerging with improving the size and efficiency of implantable devices. Biomedical applications cover Biotelemetry and also Biomedical therapy. Realization of implantable antennas demands for work in different areas.

Radiation pattern also varies, by comparing the defect person's variation pattern with this standard radiation pattern. This medical device is used to detect the various parameters like

glucose level, temperature, heartrate, and patientsafety. Implantable antennas are mandatory to transfer data from implants to the external world by wirelessly.

It was the easiest communication between doctor and a patient. The implantable device has brought unimaginable success in the entire medical sector, which saved millions of people from life threatening diseases such as congestive cardiac failure, cancer, diabetes, etc. It is very much useful to diagnose the medical condition of the patient. Implantable antenna can also plays a vital role in Bio medical applications. This paper mainly aims to summarize the recent implantable antenna technologies.

This work can be categorized as many types (a) Choosing different antenna configurations which is suitable for lossy media, (b) minimizing the size of antennas and also improving the efficiency, (c) packaging of antennas with a proper insulating layers (d) testing the entire performance to enhance the range of Biomedical applications. This paper gives a review on the work in all the above mentioned area. At the end of 19th century, The Electromagnetic waves started their way in the form biomedical applications. These implanted devices collect the Since the, EM waves are emerging with new challenges in the medical field. EM waves are providing major contributions to Biotelemetry, Biomedical therapy and also diagnosis. Biomedical applications uses Electromagnetic waves require implantation of antennas inside the human body. The implanted device inside the human body is aimed at collecting the patient's entire information and also to send it to the base station through wireless communication. The trend of implantable devices started in the year of 1960's in the form of pacemakers and pills with sensing capability.