GSM Based ECG Tele alert System

1. **PI information**: Dr(Mrs.). **R. Sukanesh**
2. **Project Duration** **:** 3 Years

   Project Cost : Rs.5, 64,300/-

3. Equipment purchased and usage:

1. Pulse Transducer
2. Ir Plethysmography
3. Sphygnamometer
4. Dual Bio Amp/Stimulator

The equipments are used by PhD scholars and ME to do research work.

4. Project Summary:

The design of continuous remote ECG monitoring is becoming one of the most important aspects in telemedicine and tele-healthcare. In existing system that are wired , ECG is acquired using ECG electrodes and this recorded signal is monitored in a closed environment such as hospitals, labs, etc., hence lack of mobility whereas the proposed system which is wireless , ensures mobility for a short range in open environment for both the physician and the patient.

In our work we propose the implementation of a portable monitoring system for ECG with wireless transmission. The ECG signals are picked up by wireless sensors and recorded. The acquired signals are processed in a separate module deploying ARM microcontrollers. This module detects the abnormality if any, present in the recorded signal. Suitable provisions are made for avoiding false alarms. These signals are then transmitted in real-time to the physician's mobile using GSM modem, In case of any abnormality detection, an alarming notification can also be sent to the patient's mobile and also to his clinical caretaker.

5. Publications:

1. A Comprehensive Analysis of Wireless ECG Monitoring System using GSM Technique with Real Time Detection of Beat Abnormalities, International Journal of Computer Science Issus, vol. 9, Issue 2 No.3, pp-578-582.

2. A Portable Wireless ECG Monitoring System using GSM Technique with Real Time Detection of Beat Abnormalities, International Journal of Engineering Research ISSN No:2319-6890,Vol. 3,Issue 2,pp.108-11.

3. Viable Investigations and Real Time Recitation of Enhanced ECG Based Cardiac Tele Monitoring System for Homecare Application: A Systematic Evaluation, Telemedicine and E-Health, Volume.19, Issue 4, pp.278-286, 2013.

4. Performance Analysis of Noise Limited QRS Detection for Various Cardiac Abnormal Interpretations, European Journal of Scientific Research, ISSN No: 1450-216X, Vol.97, Issue, pp.293-303, March 2013.

5.Experimental Studies on Intelligent, Wearable and Automated Wireless Mobile Tele-Alert System for Continuous Cardiac Surveillance, Journal of Applied Research and Technology, Volume.11,Issue 1,pp.133-143,February 2013.

6. PhD/ ME produced along with titles.

Produced two Ph.D. Holders.

1. Mr. S.Vijayprasath

   Title – "Wireless Sensors for Bio-medical Applications"

2. Mr.S.Palanivelrajan

   Title – "Wireless Communication for Bio-medical Applications"