**DESIGN OF A EMG WIRELESS SURFACE EMG 6 CHANNELS**

# Intro-:

The objective of this paper is to develop a system for recording EMG signals from the area of the back. Currently, the detection of wrong posture is not headed to study every muscle involved in a particular work activity The use of these method generates a high variability on results as for observer, as for the patient. Is important to have strategies to reduce this variability. The electromyography technique is used to make an evaluation of posture, to do so, This paper implemented a wireless EMG, which can acquire the signal from six muscles in the back and determine whether a posture is appropriate or inappropriate.

# Proposed method-:

Data receiving software was implemented. This system performs the acquisition of the patient´s muscles at his usual sitting position, making the record for a minute, then patient rests five minutes and data is acquired again, this time, with the patient on proper sitting posture.

**Analog acquision of the signal**

We are using following devices to gather and process the data-:

1. *Electrodes*

They were chosen as surface electrodes and are noninvasive and simple to use.

1. *Pre-Amplification*

This paper chose to use the INA129 instrumentation amplifier due to performance, considering previously the characteristics of the human body.

1. *Filters*

a bandpass filter from 20Hz to 500Hz is used. This is a waterfall design, presents the first high pass filter letting through frequencies above 20Hz and out of it connecting a low pass filter to prevent passage of frequencies greater than 500Hz.

*Signal Conditioning*

Conditioning was implemented in which the signal was limited to (0-5) v possible for the chosen input of the microcontroller which is a MC908ap16abcd

**Digital acquision of the signal**

1. *Signal Conditioning . Coding, ADC and transmission*

The signal was encoded to 2 bytes each of 8 bits and needed to know how to identify the channel, the signal (lower or upper) and useful information.

For the transmission system was chosen Xbee transmitter and receiver which simple protocols were implemented.

1. *Receive Data and Visualization*

it was shown that the development of the project in processing the response signal was too slow to program all the needs required in this medical equipment. Therefore a program was used to establish the labview as an executable, this consisted of a friendly interface that could implement a system of sending emails

1. *Acquision labview*

To collect data matrices were available in this case is how much data was analyzed in 1 minute receiving time at which the test is performed so arranged EMG and the matrix (6 x 50000 data channels), [10] which are then routed to a Excel workbook to keep track and to analyze the data later, as they can be routed to an email from visual Basic interface.

# Limitations-:

1.Small data set used,only 21 students.

2. Only 80.92% of overall accuracy We have to improve accuracy

3. 8.31% mean square error,We should try to reduce the error.