



# Auto Calibrator Head Orientation Controller Auto Wheelchair Using Memes Sensor

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**ABSTRACT:** In our daily life, we see an Elderly peoples are unable to walk, we need to take care of these people every day. So, we are using the wheel chair for transporting these peoples. It's not easy for the disabled and elderly people to maneuver a mechanical wheelchair, which many of them normally use for locomotion. Hence there is a need for designing a wheelchair that is intelligent and provides easy transportation for the physically challenged peoples and elderly peoples. In this context, an attempt has been made to propose a controlled wheelchair, which uses the captured signals from the user's action and processes it to control the wheelchair. The signals which are captured and translated are converted into movements by the microcontroller which in turn moves the wheelchair.

**KEYWORDS:** ATM, Image processing, real time, microcontroller, crime, abnormal events.

## I.INTRODUCTION

This project based on the microcontroller and embedded. The feature of microcontroller 8051 are memory, input/output port, addressable bit and timer/counter. Also the feature of the embedded system have the some specific application are power supply, serial communication port and processor. These are computing the project (auto calibrator head rotation auto wheel chair controller by using of mems sensor).

The ac voltage, typically 220V rms, is connected to a transformer, which steps that ac voltage down to the level of the desired dc output. A diode rectifier then provides a full-wave rectified voltage that is initially filtered by a simple capacitor filter to produce a dc voltage. This resulting dc voltage usually has some ripple or ac voltage variation. The advantages of using precision rectifier are it will give peak voltage output as DC, rest of the circuits will give only RMS output. Bridge rectifier is The input to the circuit is applied to the diagonally opposite corners of the network, and the output is taken from the remaining two corners.

The vibration sensor is also called a piezoelectric sensor. These sensors are flexible devices which are used for measuring various processes. power wheelchair users often use and carry multiple mobile computing devices. power wheelchair users have some upper body motor impairment that can make using these devices difficult. **Bluetooth** is a wireless technology standard for exchanging data over short distances from fixed and mobile devices,

In this paper, we are going to discuss on various section as follows. Section II describes about the Literature survey, section III proposed system, section IV gives the conclusion and section V comprises of the references used.

## II.LITERATURE SURVEY

Patients involved in physical injuries and disabilities with good mental strength struggle to get through places using the conventional hand powered wheelchair. This paper enables an economic assembly in any existing wheelchair that enables a smart system for automated motion which can be controlled by any Smartphone.. The purpose of our project can be extended to other mobile devices which has Android powered mobile phone by sharing the application that we have developed. The main second part of our system architecture has a microcontroller PIC16F877 which drives the various



directions of the dc motor for directional movement of wheelchair and powers the DC motor for linear motion of the wheelchair.

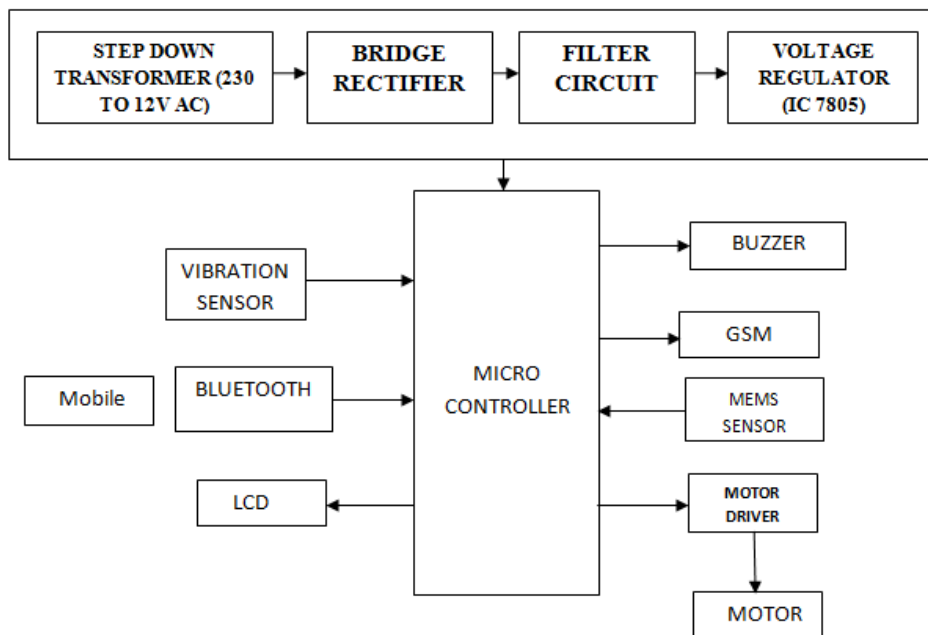
The drawback of previous system is smartphone have some technical problem and this may create difficulties to patient. The Bluetooth connect only particular distance this also major issue of that system .

To overcome these problems we propose the system based on the microcontroller and embedded system. In this project we can able to connect distance people through the GSM and to communicate with caretaker, relatives and family doctors. In our method help to move the handicap independent with their own heads moments and control and accident for the patient.

### III. PROPOSED SYSTEM

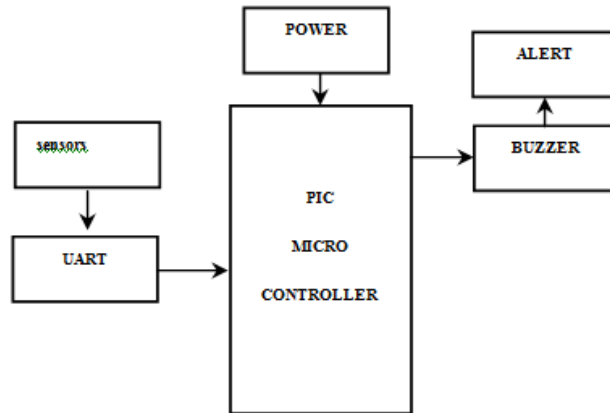
In our project, we are introducing advanced method to control the wheel chair with the help of embedded systems. Here we are introducing wireless communication for controlling the wheel chair. Here robot can be operated in four ways like forward, reverse, left and right using Bluetooth and head moments. Here person fall and robot damage will be monitored by using respective sensors. If sensor detects the person fall detection, then an alert intimation will be sent to the caretaker using GSM. LCD is used to display the various statuses and these kind of measure used to control accident. The physically challenged person are move independently one place to another place.

### IV. BLOCK DIAGRAM



4.1 Block diagram of smart wheel chair robot

The input of the system starts the power supply and voltage power supply passes the suitable level to the system of head orientation auto wheelchair. The important step of the wheelchair to analysis the head rotation and move based on the that angle. The sensor are used to the measure level of the wheelchair position (or) angle. The position will change in the abnormal direction and the change will be display in LCD. Motor driven will help to wheelchair move one place to another place. The security alert through the buzzer and mobile.



4.2 Block diagram of microcontroller

The bridge wave rectifier have two port network input and output port.A GSM modem is wireless modem that works with a GSM wireless network.A wireless modem behave like a dial-up modem.Bluetooth is wireless technology to controller the wheelchair.

#### V. ADVANTAGES OF THE PROPOSED SYSTEM

- Head orientation wheelchair aimed to provide mobility to elderly people.
- Can be used in hospital, rehabilitation center, home
- Increased Physical Support, A power wheelchair can have the option to allow for more physical support, including adjustable seating such as tilt and recline. Power wheelchair users can also adjust the height of the chair to see their environment more clearly. Some power wheelchairs also have the option of elevation to help a person get to a standing position.
- Increase disabled people’s ability to live independently – to enjoy the same choice, control and freedom as any other citizen –at home, at work, and as members of the community.
- Enable young disabled children and their families to enjoy „ordinary“ lives, through access to childcare, early education and early family support to enable them to care for their child effectively and remain socially and economically included
- Support disabled young people and their families through the transition to adulthood. Transition will be better planned around the needs of the individuals and service delivery will be smooth across the transition
- This help to identify the angular measurement of the wheelchair with the help of sensor.
- Any abnormal activities for the patient immediately informed through the message and calls .

#### VI.CONCLUSION

In this paper, we present an approach which can be used to easily detect the abnormal activities in wheelchair and patient move with their head rotation. The alert system is very efficient for handicaps. The wrong alert of the normal activities is also reduced as we use real time techniques. The proposed model use microcontroller and embedded techniques which produces better performance of the system.

#### VII.FUTURE SCOPE

In future, this paper can be further developed to avoid the difficulties handicaps move one place to another place and to control the fall down from wheelchair. If the patient getting sick automatically infromed to caretaker,doctor and relatives through message and call.



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