

# Parkinson's Tremor Stabilization Spoon

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**Abstract**— Parkinson's disease that affects the movement due to it's a progressive sickness of the nervous system. It develops slowly, sometimes starting with a barely able to seen shaking in just one hand. But while a shaking may be the most well known sign of Parkinson's disease, the sickness also commonly causes stiffness or slowing of movement. The aim of this project is to develop a supporting unit for the patients suffering from Parkinson's disease to help them eat food without depending on any external help. The tremor making steady unit uses the way of thinking of a self balancing robot is made to help the patients with Parkinson's disease. Its main unit is an MPU sensor which contains both accelerometer and gyro meter which will detect the angle of tilt caused by the tremor and corrects it. It also makes use of a Steady operation at the other end of the unit where the tremor is stabilized and holds on to the particular object which is controlled by a switch. The tremor values can see through a mobile APP. Detachable spoon head is included for replacing or washing.

**Index Terms**— Parkinson's disease, Tremor, MPU sensor

## I. INTRODUCTION

Parkinson's ailment (PD) is long haul degenerative sickness of the focal sensory system that predominantly influences the motor system that is included with development. The indications of Parkinson's illness are for the most part gone ahead gradually after some time. Beginning periods of the ailment, the side effects are shaking, unbending nature, trouble with strolling and gradualness of development. The behavioral and figuring issues may likewise happen for this PD.

The Parkinson's disease is analyzed by specialist by making inquiries about the indications and he will tests that show how well the patinas nerves are functioning. There are no labs or blood tests for the analysis, at times, specialist may have attempt a medication.

Right now, there is no cure for PD. In any case, there are numerous kinds of pharmaceuticals that can control the side effects and diminish the sickness. The prescriptions contrast from individual to individual. Some solution makes reaction the patients. Home exercise and active recuperation additionally lessen the sickness.

The diagram demonstrates the predominance of Parkinson's infection in various age. From this it can be comprehended that the possibility of illness increment with age. The maturity has a high probability of disease, yet the possibility of Parkinson's disease can't be evaded in more youthful age.

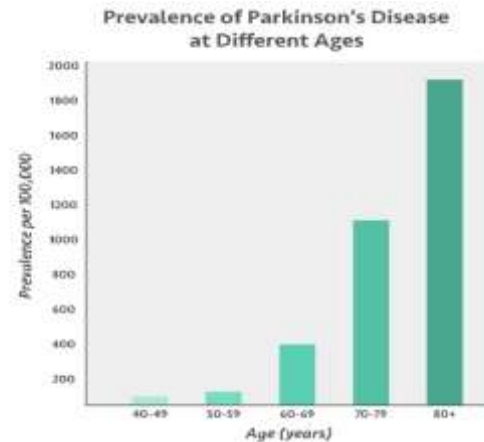


Fig1. Prevalence of Parkinson's disease at different ages

This paper plans to give the outline and execution of a little scale working model of a tremor adjustment spoon for Parkinson's disorder that makes utilization of a Steady task at the opposite end of the unit where the tremor is balanced out and holds on to the particular object.

## II. RELATED WORKS

In Egypt, going back to seventh century BC, hieroglyphics were utilized as a framework for creating and recording tongue. "Trembling", "shivering", or "shaking" were known to During 5000 to 3000 BC, Documentation of tremor turned out to be more correct in India. Ayurveda, being the written work course of action amid that period, it made various references totremor. Tremor was signified by the expression "kampa" and inconsistency because of tremor by "kampavata"[1] One of the other strategy is, the self-adjusting stage with 2-degrees of flexibility on a truck is finished by parallel and longitudinal developments are controlled by two servomotor for every hub, the quick tilt of the stage is estimated by a gyroscope[2] A tilting-type adjusting portable robot stage is researched for upgrading horizontal soundness Tilt is estimated by inertial sensor and yields are compared[3] A two wheel vehicle created a shaky platform. Stabilization is finished by DC motor and IMU sensor [4]

## III. PROPOSED METHOD

At the point when control is given to the framework by a rechargeable battery the MPU6050 sensor discover the pitch and roll angle of the vibration of the patients hand. This worth is given to the microcontroller through an I2C. From microcontroller two PWM flag is given to the servo motor

through an motor driver for settling spoon head set. Servo motor includes a feedback.

This assistance to set the angle for adjusting the spoon. For monitor the worth the mobile APP is utilized. The worth is given from microcontroller to Bluetooth module through utilizing UART. The LED pointer use to check the best possible working of the framework. The flickering of LED shows the correct working of framework.

. The block diagram of the proposed method is shown in the Fig.2

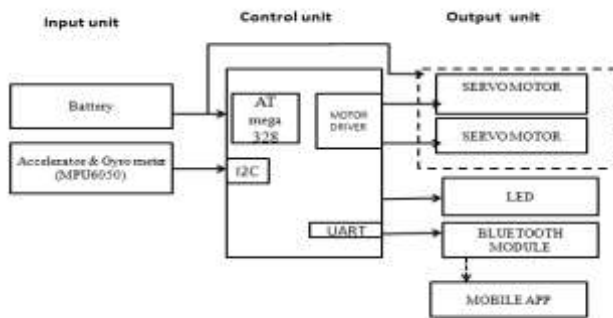


Fig 2. Block diagram

#### IV. RESULT AND ANALYSIS



Following are the area that covers the results and analysis related works of this project.

- Developed a supporting unit for the patients who suffering from Parkinson's disease
- Monitor the tilt of the hands by using mobile APP.

#### V. CONCLUSION

In this paper, the total plan and execution of an adjustment of spoon was talked about to proficiently adjust the protest over it. Built up a supporting unit for the patients experiencing Parkinson's disease to help them to eat without relying upon any outside help. Screen the estimation of tremor and sending acquiring an incentive to counseling specialist.

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