

# Automatic Pothole Repair Technology

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**Abstract**— The main objective of the project is to design and fabricate an Semi Automated Robot, which will detect the Pothole on the road and will discharge the required amount on concrete quantity, which is needed for the detected pothole and to do the level ling process on the discharged concrete and hence the pothole on the road filled completely. The power source for the robot is switched ON and allows the robot to move on the road. The Ultrasonic sensor on the front of the robot is allowed to sense the surface of the road, if the pothole will be detected the sensor send the signals to the Arduino Controller, and the controller suddenly stops the movement of robot near the pothole, and allows to discharge the required concrete needed for the detected pothole. Then after filling the pothole the slider crank mechanism is used for level ling process.

**Keywords:** Automatic Pothole Repair Technology

## I. INTRODUCTION

Roads make a crucial contribution to economic development and bring important social benefits. They are of vital importance in order to make a nation grow and develop. Roads open up more areas and stimulate economic and social development. For those reasons, road infrastructure is the most important of all public assets. But due to repeated loading and weathering on roads, a pothole may be caused which may affect the human life very badly. A pothole is a structural failure in a road surface, caused by failure primarily in asphalt pavement due to the presence of water in the underlying soil structure and the presence of traffic passing over the affected area.

So our project is to make a robot which helps the society in promoting the road safety and to reduce the difficulties in detecting the pothole and also reduce the usage of human power, and hence saves the time.

We designed a Semi-Automatic Robot which will detect the pothole on the road, and will discharge the required amount of concrete to fill the pothole and to do a level ling process on the discharged concrete using the slider. Therefore the pothole on the road (Fig.1.1.Pothole) may be filled completely and hence the accidents occur due to the pothole may be reduced.



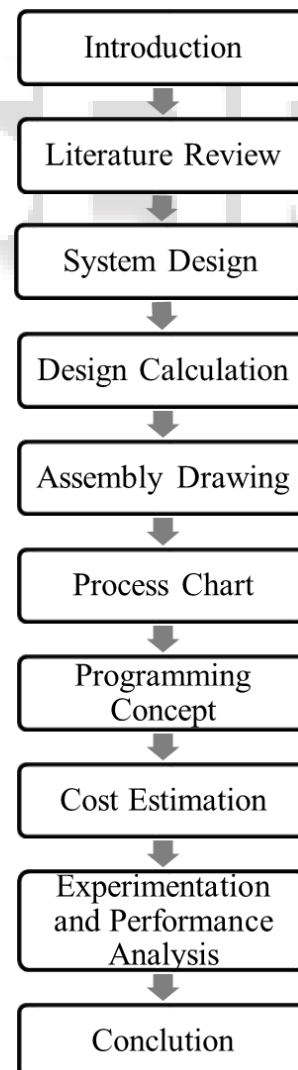
Fig. 1.1: Pothole

## A. Objective of Project Work

The main objective of the project is to design and fabricate an Semi-Automated Robot, which will detect the Pothole on the road and will discharge the required amount on concrete quantity, which is needed for the detected pothole and to do the level ling process on the discharged concrete and hence the pothole on the road filled completely.

The power source for the robot is switched ON and allows the robot to move on the road. The Ultrasonic sensor on the front of the robot is allowed to sense the surface of the road, if the pothole will be detected the sensor send the signals to the Arduino Controller, and the controller suddenly stops the movement of robot near the pothole, and allows to discharge the required concrete needed for the detected pothole. Then the pothole is level led by slider crank mechanism.

## II. ORGANIZATION OF CHAPTERS



### III. CONCLUSION

The objective of this project work has been framed into chapters for the development of pothole detection and leveling robot. The basic C programming and design calculations along with photos have been included in the following chapters.

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