

# **DESIGN AND DEVELOPMENT OF DRAINAGE INSPECTION AND ANTI-CLOGGING ROBOT**

**A PROJECT REPORT**

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***In partial fulfillment for the award of the degree  
of***

**BACHELOR OF TECHNOLOGY**

**IN**

**MECHANICAL ENGINEERING**



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**U N I V E R S I T Y**  
Established u/s - 3 of the UGC Act 1956

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**May – 2014**

## **ABSTRACT**

Drain cleaning is often considered as a simple task, but it might not be so always. Many industries function smoothly by constantly dumping the waste, toxic chemicals, biodegradable products frequently in the drains, which results to clogging of drains thus preventing the water flow from the pipes. Around 800 men die because of drain cleaning every year in India. Thus, a system has to be introduced where humans are not insisted for cleaning the drainage blockages and its maintenance. The current objective of the project work is to develop a robot for cleaning the drainage blockages and its maintenance. The robot has a rectangular body which is driven by a gear driven fiber wheels. The energy to the robot is provided by an externally pumped high pressure air. The air from the compressor is sent to the robot body via flexible tubes. The compressed air is used for locomotion and for power tools to disintegrate the blockage. For the visual detection of the blockage, camera in waterproofed casing is attached and to assist the camera in darkness high watt LED lamps are used. The captured image is transmitted to the operator and the necessary input is given to the robot to perform the particular task. Maintaining, cleaning and resolving the issues of drainage systems have been a severe issue in the surrounding environment where, labours are used without any protective measures. Increase in the laborers deaths has been a major concern in cleaning the drainage blockages. Moreover, identifying the blockage within the drainage system is a time consuming and TDS task. Also, the machines available are very expensive. In view of above, present project is aimed at development of a slender and powerful system to inspect the blockage and disintegrate it to clear the blockage in the pipe.