

# Abstract

Over the last few decades a massive increase in the generation of municipal, industrial and medical solid waste has been seen. This increase has resulted in various environmental and health hazard issues specifically in the developing countries like Pakistan. So, an efficient monitoring and management system for the produced solid waste is one of the primary needs especially in the large urban cities like Lahore. So an Automated Waste Control Management System has been designed which includes an electronic waste detection device and a central control unit. An IR sensor for sensing waste levels, GPS for location identification, Arduino Board having a microcontroller and GSM Module for sending the message containing the information regarding waste bin being full or empty are the components which have been used for designing the device. Central control unit comprises of a receiving device which receives message from the waste detection device via GSM Module and send it to the computer software via a USB cable using Arduino Board's microcontroller. The software has a proficiently designed GUI which enables the user to perform and monitor all the required actions for waste monitoring and detection in the waste bins placed in an area or a city. All the information like latitude, longitude, status being full or empty etc are displayed in the GUI of the software in the event of a waste-bin getting full and then being emptied by municipal waste trucks or field workers. So, all the components in this overall system work in an intelligent manner to make automated waste management possible so that the waste is collected and disposed to the dumping sites only when its necessary and also at a proper time.