|  |  |  |  |
| --- | --- | --- | --- |
| **Title:** | Design and Development of a Low-Cost IoT based Environmental Pollution Monitoring System | | |
| **Author(s) Name:** | Sadman Shahriar Alam; Akib Jayed Islam; Md. Mahmudul Hasan; Mohammad Nokib Monsur Rafid; Nishako Chakma; Md. Nafiz Imtiaz | | |
| **Contact Email(s):** | sadman.alam@aiub.edu | | |
| **Published Journal Name:** | 2018 4th International Conference on Electrical Engineering and Information & Communication Technology (iCEEiCT) | | |
| **Type of Publication:** | International Conference | | |
| **Volume:** |  | Issue |  |
| **Publisher:** | IEEE | | |
| **Publication Date:** | 27 June 2019 | | |
| **ISBN:** | 978-1-5386-8280-7 | | |
| **DOI:** | 10.1109/CEEICT.2018.8628053 | | |
| **URL:** | https://ieeexplore.ieee.org/document/8628053 | | |
| **Other Related Info.:** | Page 1-6 | | |
|  | | | |

|  |  |
| --- | --- |
| **Abstract:** |  |
| Environment pollution is one of the foremost and crucial factors affecting lifestyles and health of human, living organisms, natural or built environment. This paper will provide a low cost environmental pollution monitoring system for monitoring the highly toxic gases like (CO2,CO,&CH4), sound pollution, temperature and dust measurements which is designed by observing users' requirement to distinguish and keep away from disclosure to air and noise pollutants. The system consists of multiple gas sensors, dust device, sound sensor and temperature sensor that are integrated into a single platform. This paper will present a brand new system that includes digital hardware for obtaining atmospheric data and software to analyze the results. The designed system can provide calibration of the sensors along with improving the optimization to preserve vitality which results in the improvement of the precision of sensor information. In addition to this, the system is connected to the web via Wi-Fi or customer's tablet or smartphone and can be interfaced to another device for the Internet of Things (IoT) based applications. This work makes an attempt to observe the quality of air and sound of a particular location and send this information to responsible people who will use this information to upgrade the standard of living of local people of that location, which is one of the first ideas about Smart City. The cost and effort of implementation is incredibly cheap and easy as the sensors and the microcontrollers are available in abundant. The online data storage system has extended the user friendly environment by modernizing all existing factors over a general server. The experimental results demonstrate the effectualness of this research work in terms of quick detection and real time response. | |