

ESP1835

On Detecting Acceptable Air Contamination in Classrooms using Low Cost Sensors

In present scenario of the world, environmental pollution is one of the leading challenges. Most often the educational institutes and organizations in developing countries suffer from polluted environment due to overcrowded rooms, improper planning and poor infrastructure. Students/faculties in a classroom could suffer from health issues due to prolonged exposure to such environment. On an average a student/faculty is exposed to such environment for eight hours per day. A student/faculty could undergo physical as well as cognitive hazards. This paper tends to detect the duration for which a classroom environment can be considered healthy for a given number of students. We built an Air Quality Monitoring Unit using low cost gas sensors which could compare the air contamination level of the environment with specified standards to detect when the environment tends to get uncomfortable for Students and faculties. This in turn could result in reduced absentees and improved performance of students/faculties. Some useful results came to our observation such as, in a class of 30 students the concentration level of CO₂ increases about 28.14% as compared to empty classroom whereas in a class of 40 students in the same classroom it increases about 55.33% in a duration of 2 hours.