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Students report about CO_2 monitoring
Ученически доклад за дейността по измерване на CO_2

Дата/ Date: 14.03.2024

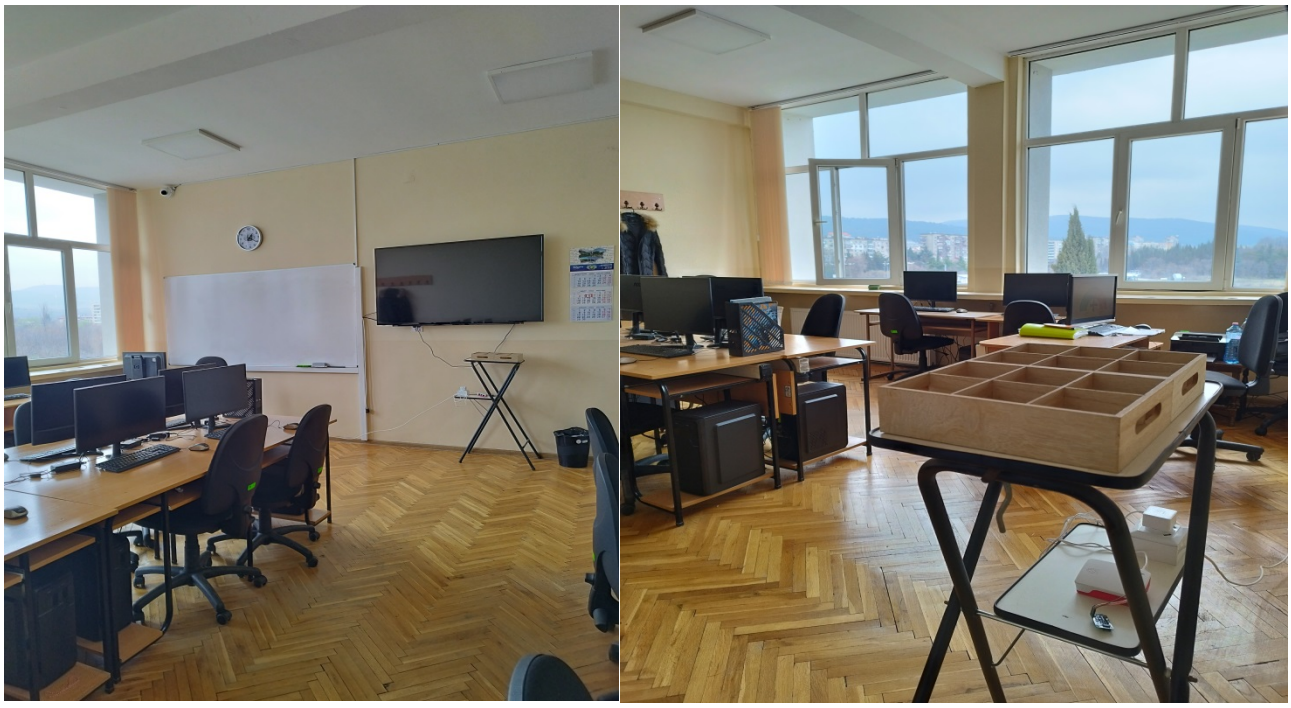
1. Въведение (Introduction):

Monitoring the concentration of CO2 in a closed environment. The time period is 15 days /05.03 – 19.03.2024/. The goal is to examine the levels of CO2 whether there are dust particles, change of temperature, number of people inside the room or ventilation.

Project number 2022-1-IT01-KA220-VET-000087732 –
"CHANGE - Co2 monitoring in scHools for digitAl aNd Green compEtences"
CUP G31B22002160006

Event log to be used in CO_2 monitoring experiments
Доклад за дейността при мониторинг на CO_2

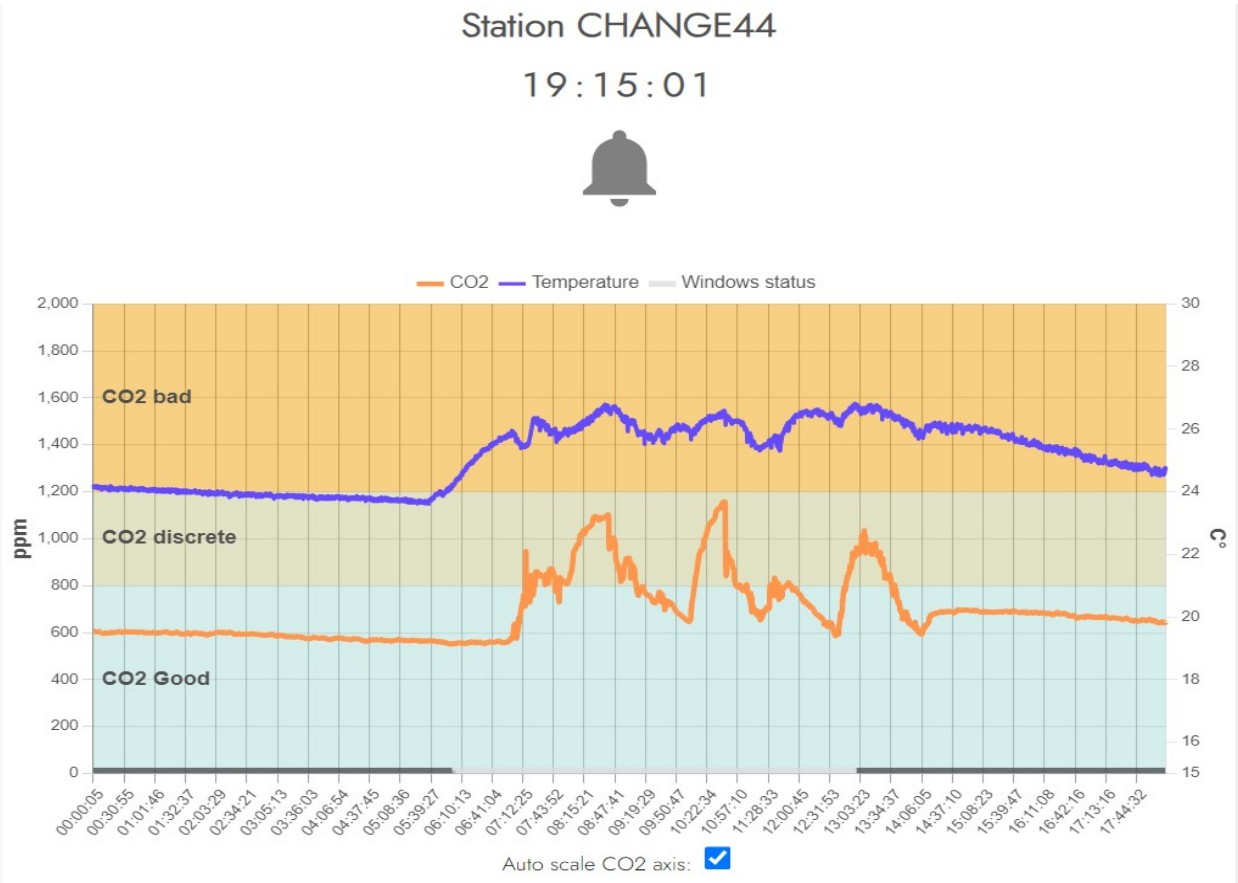
Type of activity (вид дейност): Monitoring CO2
Info about workspace (информация за работната среда) - School environment
School and Class (училище и клас) – PGE „John Atanasov" – Stara Zagora, 10b
Room destination (номер на стаята) - 418
Room surface (площ на стаята) - 30 m^2
Room volume (обем на стаята) - 90 m^3
Number of windows (брой прозорци) - 2
Window opening surface (площ отваряеми прозорци) – (0,8 x 2) m^2
Position of monitoring stations (разположение на устройството) – in the middle of the east wall
Position of HVAC (Отоплителни , вентилационни системи) - Radiator 3m^2 away
Average number of occupants (среден брой на хората) - 10
Average occupation time (school hours?)(учебни часове: начален час-краен час) 00:00 – 00:00

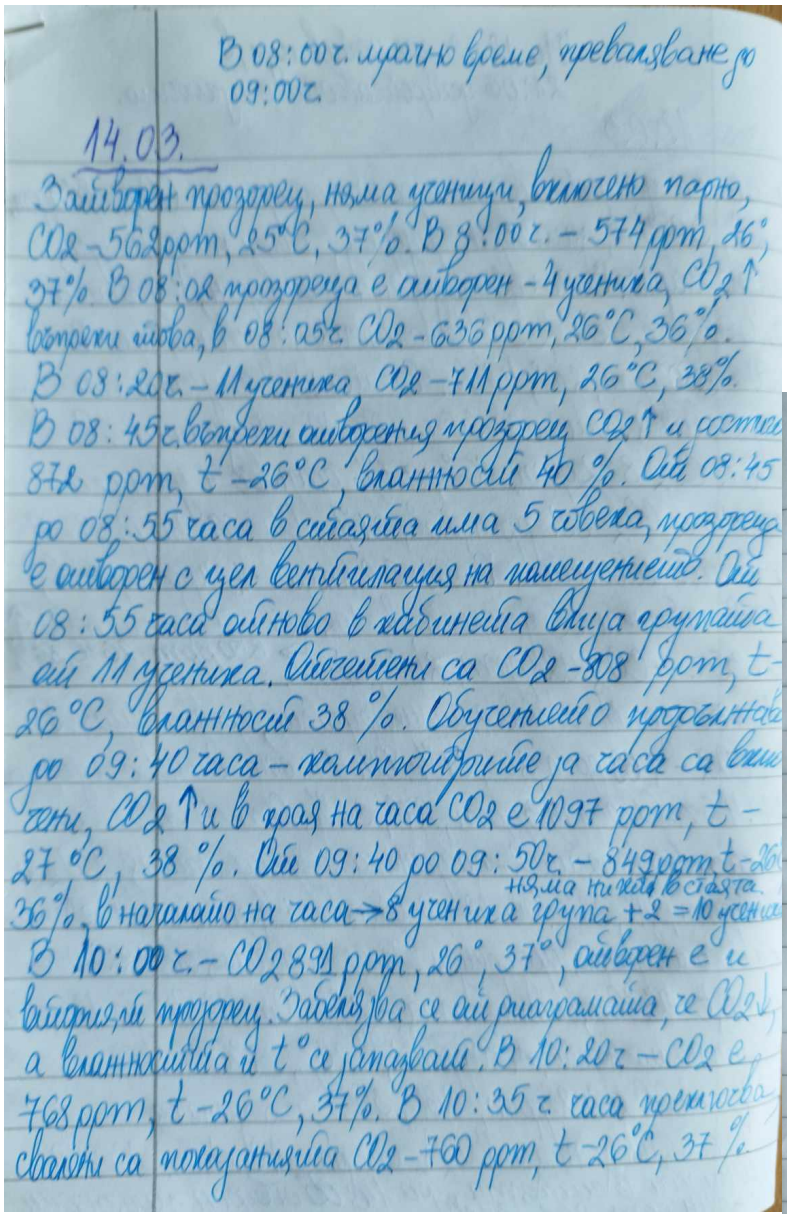


Разположение на стаята и устройството

Event Log

2. Информация (Information):





Start time Начален час	End time Краен час	Event събитие	Notes Бележки
08:00	08:02	Closed window	Heating is on
08:02	10:00	1 window open	
10:00	10:35	2 windows open	10:30 heating is off
10:35	12:00	1 window open	
12:00	12:40	2 windows open	
12:40	15:00	1 window open	
15:00		Windows closed	

3.Коментари (Comments):

At 08:00, CO2 concentration 562 ppm, room temperature 25 ℃, relative air humidity 37% with closed window, absence of students in the office, heating on. At 08:02 one of the windows is open, there are 4 students in the office, CO2 rises regardless of the small number of people in the room. At 08:05 CO2 636 ppm, temperature 26 ℃, humidity 36% were reported. The number of students has increased to 11. The CO2 concentration continues to rise regardless of the open window. At 08:20 it is 711 ppm, temperature 26 ℃, humidity 38%. At the end of the class, at 08:45 the CO2 reached 872 ppm, the temperature remained at 26 ℃, the humidity rose to 40%. From 08:45 to 08:55 there are 5 students in the office. After the break, classes continue again with the group of 11 students. Before the start of the hour, a concentration of 808 ppm, temperature 26 ℃, humidity 38% was measured. Training continued until 09:40, when CO2 1097 ppm, temperature 27 ℃, humidity 38% were recorded. From 09:40 to 09:50 the room is free, the window is left wide open for ventilation. At the beginning of the next class, CO2 is 849 ppm, temperature 27 ℃, humidity 36%. 10 students are trained. Due to the moisture from outside and the heating being turned on, it is stuffy in the office, which is why the second window is also open. Before opening, CO2 was 891 ppm, temperature 26℃, humidity 37%. It can be seen from the graph that as a result of the two open windows, the concentration of CO2 drops, while the humidity and temperature keep their values. At 10:20 AM CO2 is 768 ppm, temperature 26℃, humidity 37%. At the end of the lesson, CO2 has dropped to 760 ppm, temperature and humidity are maintained. From 10:35 a.m. to 11:00 a.m. one window is closed, the heating is turned off, there is no one in the office. After the long break, CO2 648 ppm, temperature 26 ℃, humidity 36% were reported. Until 11:45, the study continues with the group of 11 students. Then CO2 1153 ppm, temperature 27 ℃, humidity 39% were recorded. From 11:45 AM to 11:55 AM, there is no one in the room and the concentration drops to 779 ppm, the temperature also drops to 26 ℃, and the humidity drops to 37%. From 11:55 a.m. to 12:40 p.m., another group of 10 students is trained in the office. At 12:00 and the second window is open. Therefore, from the graph, at the end of the hour, the concentration of CO2 decreases to 755 ppm, temperature 26 ℃, humidity 37%. From 12:40 the second open window and closed. Only the teacher is in the office, but this also affects the testimony. At 12:50 p.m. CO2 807 ppm, temperature 26 ℃, humidity 37% were recorded. From 12:50 to 13:40 there is no one in the room, the window is open and closed because of the torrential rain outside. At 13:40, the concentration of CO2 is 593 ppm, the temperature is 26 ℃, the humidity is 36%, there is a group of 9 students in the office. Group training continued until 2:30 p.m., when readings CO2 850 ppm, temperature 27 ℃, humidity 39% were removed from the chart. From 14:30 to 15:00 there are three people in the room. A decrease in CO2 was observed and before closing the window CO2 concentration 625 ppm, temperature 26 ℃, humidity 37% were recorded.

4. Заключения (Conclusions):

With an increased number of people in a closed room, but with good ventilation, CO2 does not increase, but even decreases its value.

Изготвили (Issued by) : 10б клас (class)