**Methodology:**

* Firstly, the student opened the kitchen’s windows and door to outside, while closing door to inside to create a controlled, well-ventilated environment. As such when the device was powered on at 20:10 all the readings were at healthy, low levels.
* The student then let the sensors warm up for 10 minutes (as it was the SPS30 PM sensor that was being focused on, it was found unnecessary to wait the full 30 minutes to ensure that the IRM-AT CH4 sensor was fully warmed up).
* During this warmup period the readings for PM2.5 remained consistent at around 5 µg/m³.
* The student then began washing up and prepping the sausage meat to be cooked, the PM2.5 readings were unaffected by such activities.
* Cooking the sausage meat commenced at 20:30 2.5 m from the device. From this point, PM2.5 readings gradually increased. At 20:38, when the sausage meat was finished cooking and eggs were placed into the pan, the PM2.5 readings spiked, shooting up to around 130 µg/m³. Such values continued to when the eggs were complete, and tomatoes were put into the pan at 20:40.
* Also at 20:40, the student opened the door again (which was closed before cooking). This caused the PM2.5 readings to decrease.
* The student then began toasting bread at 20:44, causing the readings to begin increasing again.
* However, at 20:46, the level 2 alarm for too high PM2.5 in a 10-minute period was set off. The student then reset the Arduino Mega 2560 microcontroller to turn off the alarm.
* With the device reset and the door remaining open the student then let the PM2.5 readings decrease as he ate.
* At 20:53, the student toasted more bread and closed the exit door, causing the PM2.5 levels to rise again.
* The risen PM2.5 levels from the toast of around 40 µg/m³ remained constant while the student finished eating and completed the washing up.
* Finally at 21:01, when the student was done, he reopened the exit door to let the PM2.5 levels return to normal.
* With the levels returned the student let the device run on a further 1 hour and 9 minutes to let the device operate for a total of 2 hours continuously and no faulty readings occurred. Actions like boiling the kettle to make a coffee also did not affect the PM2.5 levels.
* Diagram of device’s readings during the total run time of the experiment (20:10 – 22:10). Most readings remained completely stable. CO2 should variation due to exit door being opened and closed at different times, resulting in the peaks and troughs due to the change in ventilation. CH4 is still uncalibrated and hence not stabilised. PM2.5 and PM10 display the exact response expected from the test.