Stuttgart, 06.05.2019

Ambient air and indoor measurements with low cost sensors - Feasibility study for the use of particle and NO₂ sensors in epidemiological investigations

Thematic background:
Different researches show a connection between air pollution and the aggravation of the clinical picture of COPD (chronic obstructive pulmonary disease) patients. In order to further investigate it, epidemiological studies carried out with more patients are needed which means the need of hundreds of devices and therefore, a bigger budget. In the recent years the use of low cost sensors has proliferate due to the improvements in sensibility and affordability.

Aim of the thesis:
The aim of the thesis is to perform indoor and outdoor air quality measurements with particle and NO₂ low cost sensors in the houses of COPD patients in Stuttgart.

Method:
- Calibration of sensors in the laboratory
- Indoor and outdoor measurements in the houses of the patients
- Data evaluation
- Report and presentation

Requirements:
- Work independently, reliable and structured.
- Basic knowledge of air quality
- Basic knowledge of electronics
- Willing to work with Arduino microcontroller
- Programming knowledge (MATLAB, R, etc.) and driving license are an advantage.
- Work and report in English or German
- Temporal flexibility

Start: immediately

For questions/application:
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