

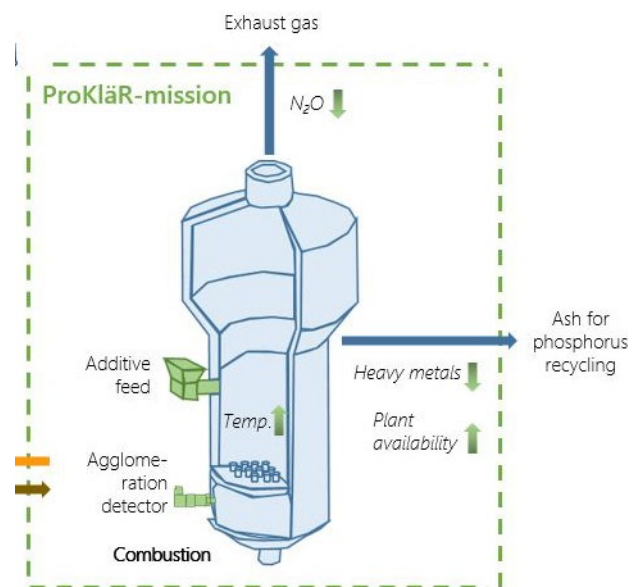
Master Thesis / Bachelor Thesis / Mandatory Internship (Module 15)

## Development of an agglomeration monitor for industrial furnaces based on high-frequency pressure fluctuations

### Content:

The Project ProKlär-mission aims to research measures to reduce nitrous oxide emissions from stationary fluidized beds for the thermal utilization of sewage sludge and at the same time optimize ash quality with the aim of phosphorus recovery. Therefore, an increase in the fluidized bed temperature is essential. To realize this, the application of an online agglomeration monitor will first be researched and tested to reliably observe the fluidization state and thus realize higher temperatures in the fluidized bed.

The aim of this Master Thesis / Bachelor Thesis / Internship is the further development of the agglomeration detection method based on high-frequency pressure fluctuations. The method that was developed in a lab-scale plant needs to be adapted for industrial-scale plants. Therefore process data and pressure measurements from several industrial plants and several lab-scale plants need to be evaluated with explorative data analysis methods and correlation analysis to further advance agglomeration detection.



### Tasks:

- Familiarisation with the previous data analysis with Python
- Explorative data analysis, correlations, etc. to find the influences in the different-sized plants
- Written documentation of the work, and presentation of the results in a clear and concise manner

### Requirements:

- Motivated and independent way of working and interest in data analysis with Python / MATLAB

### Contact person:



**Arkya Sanyal, M.Sc.**

+49 911 5302-99038

 [arkya.sanyal@fau.de](mailto:arkya.sanyal@fau.de)

