

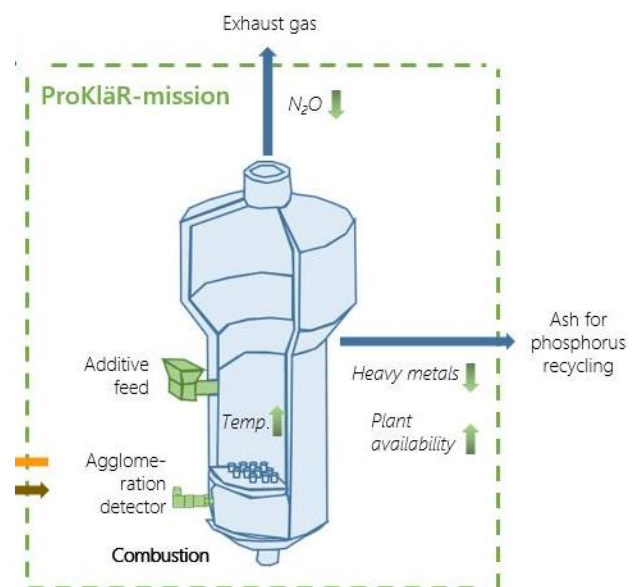
Master thesis

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

Content:

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

Aim of this master thesis 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 needs to be evaluated with explorativ data analysis methods and correlation analysis to further advance the 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, presentation of the results in a clear and concise manner

Requirements:

- Motivated and independent way of working and interest in data analysis with python, no programming background required



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