Master thesis

Monitoring of boiler heat transfer efficiency with image recognition

Background and strategic goal

The fouling of steam boilers in one of the main limitations for the availability and hence economic performance of power plants. This is particularly relevant in Waste-to-Energy (WtE) plants due to the unfavorable properties of the fuel. Improvements in camera technology as well as cleaning technologies have the potential to progress in this field. This is also true in the case of WtE plants providing mainly district heating as the new Copenhagen Amager Bakke plant.

Scope and objectives

- Design and purchase of a camera system for being placed on a self-propelled turning water nozzle hanging on a hose unrolled through the boiler ceiling of an on-line boiler cleaning system
- Test campaign with camera system on a selected European WtE plant
- Analysis and correlation of camera data with other available process data/parameters
- The work is to be carried out at TEER/RWTH Aachen, the Dublix offices in Copenhagen and the host site for the test campaign (approximately 1/3 of time each)

Applicant profile

Interest in combining practical and theoretical work in the field of environmental technology, process engineering and steam boilers. A high degree of own initiative will be needed to integrate in our lean start-up like company. Furthermore, willingness to move/travel to Copenhagen and the European test site (rough blue-collar power plant environment). Practical mechanical skills for equipment in high temperature environments would be an additional asset (in this case also suitable for Bachelor thesis).

Students of:
Mechanical/Environmental/Process/Power/Chemical Engineering

The work can be started at the next possible time.
Please send your application to Thomas Horst.

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