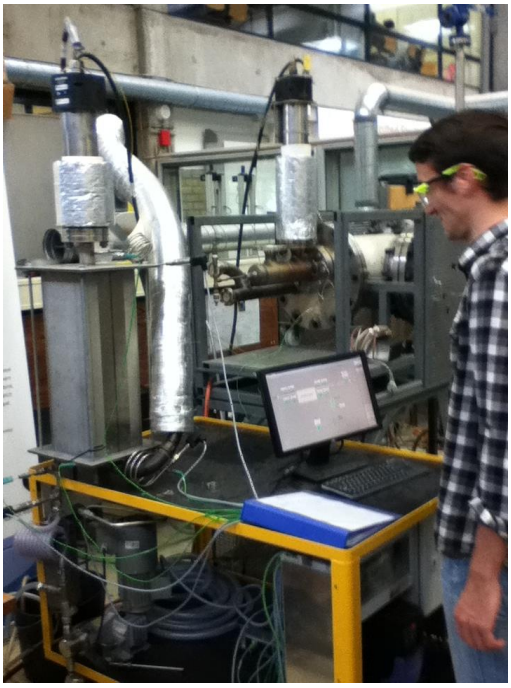
Master project: improvement of a waste heat once-through steam generator

Background

Together with the company Heat Power, Eindhoven University of Technology developed a compact, fast responding and economic once-through steam generator.

Due to its compactness, short start-up time and low investment costs, the once-through steam generator technology will enable waste-heat utilisation with a steam system in decentral industrial and automotive applications, like e.g. cogeneration and ships propulsion.



In a lab of the TU/e an experimental set-up of the once-through steam generator (15kW thermal power) was realized. Also a finite volume model of the once-through steam generator was developed.

Goals

- Improve the design of the steam generator to make it faster while still ensuring steam quality and controllability.
- Perform experiments to optimize the response to simulated varying exhaust gas flow
- Develop an operating strategy
- Validate the model and operating strategy with results of the experimental set-up

Assignment

Pursue goals as described in the above. The supervisors and master student together will assess which of the above goals are feasible within this assignment and where the focus of this assignment will be.

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