

Master Thesis Project Proposal

Modelling and Parameter Identification of Heat Power System

1 Background

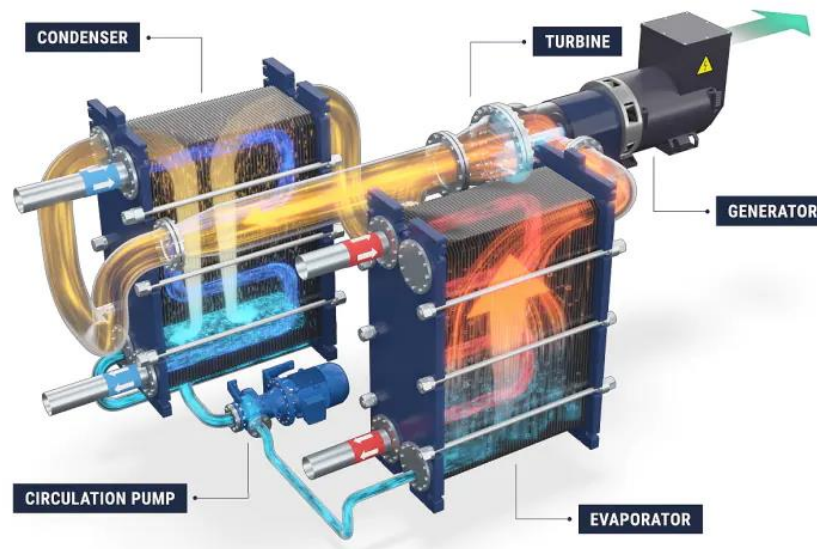
This thesis project will be performed as a collaborative project between Climeon and B&R Industrial Automation.

Climeon is a clean-tech vendor, providing a technology that uses the energy in waste heat from industries and low-temperature geothermal heat to generate electricity. The company received its first order in 2015 and has since then established a global customer base within maritime and industrial waste heat recovery and geothermal heat power.

B&R Industrial Automation is a part of the ABB Robotics and Discrete Automation business. We are a control system developer and manufacturer whose technologies enables complete automation solutions designed for maximum modularity and economic efficiency. Our product range includes everything needed for machine and system automation, both hardware and software. A decisive factor here is that all the products work together seamlessly.

2 Project

The Climeon HeatPower module is based on Organic Rankine Cycle technology, which in short means using a hot source – high pressure – and a cold source – low pressure – to drive a flow that generates electricity. Each module is connected to the ClimeonLive cloud platform where process data is logged.



Currently a lot of time and resources in R&D is spent on testing new product features on the actual machinery. The goal of the project is to create an accurate simulation of the HeatPower module to use for more efficient software testing and controller development. To achieve this a dynamic model of the process must be created and system parameters should be identified using the data that has been gathered by the cloud platform. The simulation should then be integrated into the current software development environment as a part of the R&D workflow.

3 Qualifications

- System modelling and identification skills
- Courses in control theory
- Programming skills, Python knowledge is particularly beneficial

The thesis is suitable for 1 or 2 students.

4 Terms

Location: Stockholm or Malmö

Scope: Full time

Start date: January 2023 or according to agreement

5 Contact

If you want to apply for the project, please send an email containing a brief presentation of yourself along with a CV and transcript of records to Erik Ottosson. Please contact us if you have any questions.

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