



Thesis Projects (MIE498 H/Y) 2018–2019

Title/Topic: Generation of steam by spraying water droplets on hot metal masses

Area of Research: heat transfer and fluid dynamics

Number of students: one student for two terms

Description:

Industrial processes that require steam to be generated very rapidly do this by spraying water onto preheated thermal masses. Although this method is widely used in industry, the optimum design of the steam generator is not known. In particular the optimum size and shape of the metal masses has to be determined to prevent water running off too rapidly while maximizing heat transfer to the liquid. The objectives of this project are to determine the maximum amount of heat that can be extracted from the thermal mass to generate steam and what the thermal profile within the thermal mass is at the end of the steam generation cycle.

Responsibility of student:

- Design and construction an experimental test apparatus in cooperation with a senior PhD student.
- Collect experimental data suitable for analysis
- Process, analyze, and report results
- Attend weekly progress meetings

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