

MTRL 467 MEETING MINUTES

Project Name:	Characterization of Heat Transfer for the Finger Water-Cooling Configuration
Group:	Daan Maijer and Jun Ou
Meeting Date and Time:	January 31 st 2020, 9:30am
Minutes Prepared By:	Bhakthie Senanayake

Attendees:

Name	Present	Absent
Daan	x	
Jun	x	
Huayu	x	
Rohan	x	
Bhakthie	x	
Leonardo	x	
Yaning	x	
Andrew	x	

Agenda:

- We have thought about the design approach from Nissa's project and compiled a list of required objectives, quantitatively what we expect them to entail, and some design ideas to achieve each objective.
- The main goal of this meeting is to approach our sponsor (the client) to confirm the quantitative objectives of this model. What are the ranges you'd like to know about? We would also like to talk about what resources we can draw on for help in the lab. Finally, we would like to present a design proposal by next Friday (the 6th) and want to confirm a good format for this, next meeting we hope to finalize our design, order what we can, and if there are issues we will still have a week to iron them out and still have orders in before the reading break.

Minutes:

- 500 degrees celsius will be the upper limit of the temperature of the water – mostly considered above this temperature
- Have a controller to set the temperature of the block
- 1-2 hours of heating to reach 300 degrees celsius, be able to run a test every hour (Nisa's block takes 30 minutes to heat up the block).
- 110 Voltage – Preferred and safer
- Wired all the heaters in series (only one thermocouple used right now)
- Have a way to measure the symmetry of heating
- At some point, would want to test coolant at different temperatures (not pressing matter right now)
- Pressure of the water an issue – consider a pressurized tank (pump works as well)
- 5-10L/min flow rate (20L/min target)
- Can use T-slot as a stand
- Use stainless steel thermocouple (no exposed high voltage wires)
- Heaters protected in an armadillo cable – Look at Omega

- Next step:
 - Running pilot tests (not most important goal)
 - Focus on analysis and understand how to operate
 - How to heat the block uniformly
 - Have the final design ready and specifications before midterm presentation

End of Document