

## DSG-Ecal Meeting Minutes

**Date:** August 30, 2022

**Time:** 2:30 – 3:30

*Attendees: Aaron Brown, Brian Eng, George Jacobs, Mark Jones, Tyler Lemon, Marc McMullen, Jack Segal, Albert Shahiny, Bogdan Wojtsekhowski*

### 1. Supermodule heater project research talk (link)

1. Heat tape is strapped to a metal grating, which is connected to flange 1 of each supermodule
  - The heat tape is layered so that the tape does not contact the metallic surface continuously, and at times overlaps
  - The selected tape is not recommended for conductive surfaces
2. DSG has researched Kapton-based heaters and has requested a quote from Custom Heaters and Research (CHR) on a custom-designed heater
  - The heater is 5 x 5 inches and will adhere to the flange with adhesive
  - The preliminary quote is less than \$50 per heater
  - 125 total watts, both 120 VAC and 48 VDC will be quoted
  - The heater is rated to 230°C for steady state
  - Four to six-week lead time
3. DSG presented a preliminary thermal analysis of a single supermodule with 100 W applied to flange 1
  - DSG will proceed to analyze multiple supermodules
  - Hall A suggested additional boundary conditions to be added to the model and aft cooling should be applied to the area midway between the light guides
4. Hall A cited issues with the rated temperature of the CHR heater
  - 230°C may not be enough heat for the annealing process to take effect
  - The connecting power cables and RTD cabling need to be rated for 250°C
  - The detector should be moved to the hall within six months

### 2. Outcomes

1. DSG is scheduling a meeting with CHR to discuss the final quote, design questions presented at 8/30/2022 meeting, and potential heater power supplies and controls
2. Hall A suggested testing prior to purchasing the full quantity
3. DSG will continue to field quotes from alternate vendors
  - A mica-based heater may yield a higher rated temperature