

Solar Sailors

Meeting Minutes from 09/23/2020

Members in attendance:

Adriana Oliveira (Team Member)

Brady Jerome (Team Member)

Lukas Vermeulen (Team Member)

Nickolas Borek (Team Member)

Steve Szablya (Sponsor)

Asad Mohammad (Sponsor)

Feng Li (Advisor)

Brian Johnson (Teacher)

- Meeting starts at 6:01 PM
- Begin with a recap of the 09/21/2020 meeting
- Nick's discussion on thermistors
 - The pros
 - Affordable, accurate, and long lifespan
 - The cons
 - Non-linear relationship (tricky to work with)
- Lukas's discussion on thermopiles
 - More expensive
 - Basic for our use (widely used and useful)
 - Tests the effects of light rather than light itself
- Brady's discussion on photodiodes
 - Very cheap (especially in bulk)
 - Good ranges (between 400nm and 1000nm in general)
 - Misses out on some light, and has a max of 120° viewing angle
 - But works for what is needed
- Adriana's discussion on phototransistors

- Very cheap
- Good ranges (temp and wavelength)
- Good output voltage
- Useful mounting techniques
 - Through hole
 - Surface mount
- Decided on using phototransistors as our primary sensor
- Adriana asked about the transfer of data to the kw4h logs
 - We will be taking an analog signal, manipulating it, and output another analog signal
- Discussed the possibility of using the environmental chamber
 - Can reach temperatures of -40°C to 140°C
 - Can test humidity and anything else needed
- Discussed the potential of utilizing a heatsink to reduce heat build-up
 - Or using a certain material for the case to reduce the overall heat
- Lukas discussed his findings on microcontrollers
 - Found a Seeeduino
 - Cheap, has multiple pins, small, and has the tools we need for our pyranometer
 - But need the lifespan data
- Found that there is a pyranometer on campus that we might be able to see
- Meeting ended at 7:00 PM