

Team: sdmay22-01

Project Title: Hybrid solar/battery for electronic derailleur

Date: October 31, 2021

Members:

- Aydin Bashich - Resistance to vibrations and overlayer
- Connor Davison - Overcharge protection for battery
- Elba Estarellas - Mechanical Constraints: Resistance to vibrations and PV cells
- Mohamed Mohammad - Overcharge protection for battery
- Seth Pierre - Mechanical Constraints: Waterproof and Attachment
- Rachel Vallier - Mechanical Constraints: Temperature and Attachment
- Jack Waskow - Part Selection & Physical Design

What we've accomplished in the past week/what we've been researching

- Aydin Bashich - Researched how to test for resistance to vibrations
- Connor Davison - Continued looking into charge protection circuits.
- Elba Estarellas - Looking at the different ways we can test the resistance of the vibration.
- Mohamed Mohammad - continued researching on overvoltage-protection circuit using Zener diodes.
- Seth Pierre - This week I looked into more ways to test the final product. I have also been researching different ways we can make the final enclosure.
- Rachel Vallier - This week I looked at some datasheets for a few solar panels to compare their temperature coefficients so that I could get an idea of some common coefficients and the impact the different coefficients have on the efficiency of the solar cell.

-Jack Waskow - Looked into options for stepping up voltage from small solar cells, still looking for ideal parts for our parameters

What we're planning to do in the coming week

-Aydin Bashich - Continue researching how to make the product resistance to vibrations as well as overlayer.

-Connor Davison - Continued research on charge protection. Maybe select a couple designs and look further into pros and cons.

-Elba Estarellas - Continue researching the resistant vibrations and width and length of the PV cell.

-Mohamed Mohammad - Continue researching on the overcharging protection circuit.

-Seth Pierre - Continue researching new methods and testing strategies

-Rachel Vallier - I plan to keep looking into the temperature coefficient.

-Jack Waskow - continuing to find ideal parts, also need to look into options for an outer coating for waterproofing

Issues we had in the previous week

-Aydin Bashich - Understanding the article I'm reading

-Connor Davison - No issues.

-Elba Estarellas - I don't have any issues.

-Mohamed Mohammad - I have not faced any issues.

-Seth Pierre - No issues

-Rachel Vallier - No issues this week.

-Jack Waskow - our part specs are proving to be pretty niche, may need to talk to the client about a larger battery or solar cell.