



SUNSTANG NEWSLETTER

CONQUERING THE ROAD ONE SOLAR CELL AT A TIME.

'The beginning is the most important part of the work.'

QUOTE OF THE MONTH

CHEERS TO THE NEW SCHOOL YEAR!

As Summer 2020 came to a close, the team at Sunstang became more and more excited to welcome our existing team members back (virtually) and introduce this year's recruits to what life is like at Sunstang. In this Newsletter we will discuss our On-Boarding process in depth.

ON HOW IT WENT

Overall, On-Boarding was a success. The team leads ensured all recruits were comfortable speaking their minds and asking for help with their projects.

Both team leads' and members' morale was positive throughout the month of September. Being on a team working towards a common goal is exciting to both returning members and new recruits. The three-week structure was very beneficial because it allowed those who were interested but missed the first week to still be involved, and helped recruits find what they liked best by trying a different project each week. As was expected, a few recruits decided Sunstang was not the right fit, but we see this as a positive and this is exactly the reason for an On-Boarding period! We want every student to feel at home, and if they don't it is never personal, we always have the student's best interest in mind.

Speaking towards the online vs. in-person comparison, it was not identical, but we made the best of it. Using Discord allowed every member to switch rooms freely to see what other teams were up to which gave the closest approximation to an in-person experience.

IMPROVEMENTS FOR NEXT YEAR

As with any new process, it is very unlikely to go seamlessly the first time around, but we see this as motivation to keep improving. Some common opinions on ways to improve the On-Boarding experience included:

- Compiling a list of useful learning resources initially and the project to test their knowledge afterwards, rather than all at once.
- Creating a collaborative project to instill the importance of communication among different sub-teams in a design process.
- Implementing optional workshops throughout the week to supplement their assigned research topics as well.

ABOUT THE PROJECTS

Dynamics Projects: Students began to learn how to effectively research and select materials such as carbon fiber and composites to design efficient parts that can be manufactured up to industry standards by using CAD models from previous years which will lead to studying and prototyping car systems such as suspension, steering, and braking efficiently.

High-Power Projects: The recruits touched on how to develop block diagrams using MPPT works and EVSE which will be used in the design and build of the battery pack and array systems. Additionally, they were introduced to the encapsulation process with EVA and the intensive research required to develop an efficient array system. This is extremely important in the development of solar equipment in the industry.

Low-Power Projects: A mix of hands-on and logical approaches were provided to both educate the team about proper design practices, desired features, and the reasoning behind these, and also help them to become familiar with the software used to implement these practices. A list of recommended tutorials was given to the recruits alongside various questions about selecting motors, learning CAN, and designing a Low-Power Box which they were required to complete and do research for.

Structures Projects: Students began to learn how to take on major projects such as chassis configurations, aero-body design, material selection, and manufacturing options using texts and models from last year's design. Students will now work on designing car seats and doors, while examining and adhering to competition regulations. These projects will develop the students' abilities to choose the best materials and prototyping methods to design and build a high standard solar car.

Software Projects: Students attempted multiple projects such as creating update templates for the team's website, using software programs/writing codes to operate the car's user interface including a touch screen to monitor and control the car's functions, Bluetooth and audio systems. Furthermore, the software recruits began to familiarize themselves with data-collection techniques to later design a data collection system assess the car's performance to improve the car's performance and efficiency.