



STUDENT SUSTAINABILITY COMMITTEE

Funding Award and Acceptance Letter

May 11, 2015

Project Leaders: Tan Chee Sim
Project: Prototype Electrical System for Solar Car

Dear Tan Chee Sim:

On behalf of the University of Illinois at Urbana-Champaign Student Sustainability Committee (SSC), I would like to thank you for considering the funds raised by the Sustainable Campus Environment Fee to implement a project that improves the sustainability of our campus. SSC is pleased to inform you that we are recommending to the Institute for Sustainability, Energy, and Environment (ISEE) that the Prototype Electrical System for Solar Car project **receives \$3,295.00 in grant funding.**

In order to remain eligible for this award, you must agree to the following conditions:

1. A final report of all work completed should be provided to the SSC Program Advisor by May 2, 2017.
2. Project status updates and detailed account statements must be provided at the end of each semester until the project is completed.
3. Any substantial modifications to project scope, budget, or timeline must first be approved by SSC. These requests must be submitted in a formal letter to the Chair and Program Advisor.
4. All projects will be expected to follow campus policies and procedures as well as any applicable State and Federal laws.
5. SSC reserves the right to revoke funding if the project does not comply with the terms and conditions outlined in this letter.
6. Any signage involving the project or events surrounding this project should include SSC's logo and/or a statement of which fee funded the project.
7. Any press releases or educational/promotional materials involving the project should acknowledge SSC funding. Projects must communicate with the SSC's External Vice Chair to come up with appropriate marketing for the project.
8. Projects must participate in the Campus Sustainability Symposium at least once before June 30, 2018.

If you agree to the terms and conditions for the funding, please sign on the designated line at the bottom of this letter. If you have any questions regarding these requirements please contact the Chair, Amy Liu, at amy.linqin.liu@gmail.com or the SSC Program Advisor, Micah Kenfield, at kenfield@illinois.edu. You will be notified when the Institute for Sustainability, Energy, and Environment officially approves this project. Again, thank you for your interest in improving the sustainability of the University of Illinois at Urbana-Champaign. We look forward to working with you in the future.



STUDENT SUSTAINABILITY COMMITTEE

Project Information

Project: Prototype Electrical System for Solar Car

Funding Source: Sustainable Campus Environment Fee

Funding Amount: \$3,295

Award Code: 1-303692-XXXXXX-XXXXXX

Receiving Campus Unit: Illinois Solar Car / Electrical and Computer Engineering

Unit Financial Contact: Beverly Curtis, Electrical and Computer Engineering

E-mail : bcurtis@illinois.edu

Primary Contact: Tan Chee Sim, Illinois Solar Car

E-mail: ctan14@illinois.edu

Secondary Contact: Lee Jye Sze, Illinois Solar Car

E-mail: jlee641@illinois.edu

Project Description:

Our project is to build and test a scaled-down prototype of the electrical system of a solar car. The major parts of this prototype are the solar array, maximum power point trackers (MPPT), rechargeable batteries, and a load. The solar array will be made of flexible silicon crystalline solar cells encapsulated (to protect from debris and enhance performance) and mounted on a contoured composite panel that mimics the surface of our car body. We will design and build our own MPPT which is a variable DC/DC boost converter that raises the voltage of our array. The MPPT has a feedback loop control to ensure maximum output from the array under different insolation and temperatures. The rechargeable batteries will be Li-ion batteries that will act as a buffer energy source when sunlight is not available or is insufficient to power the system. Although Li-ion batteries have a high energy density, they require a battery management system to ensure safe and optimal operation. Thus, we will purchase a battery management system that is suitable for our car. Lastly, the energy generated by the solar array will power a load, which will be a motor we plan to borrow from another team.

This is our starting point of building the actual solar car. Through this project, our team members will develop research skills, fabrication techniques and gain experience, all of which are crucial when building the actual car. We will use it as a tool for explanation and proof of concept during our recruitment, fund-raising and advertising campaigns. The success of this project will also raise the awareness on solar energy application in transportation systems and help us gain support from the community for our solar car.



STUDENT SUSTAINABILITY COMMITTEE

SSC Signatories

Amy Liu, Chair
Student Sustainability Committee

Serena Hou, Treasurer
Student Sustainability Committee

Awardee Signatory

Tan Chee Sim
Illinois Solar Car

iSEE Signatory

Dr. Evan Delucia, Director
Institute for Sustainability, Energy & Environment