**Illini Solar Car Project for Spring Semester 2015**

**Name:** Electrical System Prototype

**Deadline:** May 2015

**Goal:**

To mimic solar car’s electrical system as much as possible.

**Project Team:**

Solar Array (Solar Cell and Encapsulation) - Wenyuan and his team

MPPT – Foong Yee and Sajal

Battery – Michal and his team

Circuit – Peter and David

Composite Panel – Tianqi and Eddie

Motor - undecided

**Outcome metrics for prototype (Rate all from 1 to 5, 5 being best):**

Solar Cell:

* Measured efficiency versus rated efficiency before encapsulation
* Aesthetics of tap solder and diode circuit
* Symmetrically mounted on panel

Encapsulation:

* Smoothness and appearance
* Power generation loss or gain through encapsulation
* Tolerance to debris (break it gradually then test for efficiency)
* Manufacturing process (materials, repeatability, ease)

MPPT:

* Efficiency
* Size
* Reliability

Panel:

* Sturdiness and weight of composite panel
* Smoothness of surface and edges of composite panel
* Aesthetics of through holes for solar cell circuits
* Contour’s gradient
* Process of manufacture

Battery:

* Efficiency loss through charging
* Maximum charge and discharge rate
* Packaging appearance
* Reliability and ease of placement
* Heat efficiency

Circuit

* Simplicity
* Safety
* Reliability

Motor (not necessary)

Publicity

* Sponsoring companies’ logos on panel
* Introduction board
* Number of people talked to our booth
* Number of people signed up for our mailing list