FSU Solar Car Team

Term: Fall 2012

Meeting: 7

Date: 10/09/2012

Time: 5:30pm

Location: McLaren Classroom, CAPS, Building A

Attendance: Matthew Bosworth, ECE Project Leader

Christopher Dresner, ECE Business Administrator

Ahmad Farhat, ECE Treasurer

Thierry Kayiranga, Secretary

Clay S. Norrbin, ME Leader

Daniel R. Green, ME Finance Administrator

Joseph Petite Homme, ME Treasurer

Absentee(s):

Agenda: Discuss Milestone #2

Discuss new developments

Discussion:

* The car will be a three-wheeler
  + The team will no longer be using the supercapacitor in the energy system. The new found motor makes the supercapacitor superfluous.
  + The team is looking into integrating a CAN system with the Arduino board microcontroller
    - Search so far: one possible prototype found

Price: $50

Disadvantage: may not be able MPPT algorithm

* + Towards final decision on batteries
* Found protected Lithium Ion phosphate batteries
* Price: around $2000
* Components: battery, chargers, management system, built-in circuit breaker
* Stats: 16 cells, 40Ah, 40V and weighs around 60lbs
  + Towards final decision on motor
* Overall cost of motor and components: ~ $550
* New motor with one wheel and brakes
* Motor Price: $200
* Controller: Kelly D. approximately $100, 985 efficiency  
  Stats: 10’ rim, 1kW, 40V, 35A, 45Nm peak Torque, 500 rpm
* Towards final decision on solar panels
  + - As advised from Dr. Foo, the team will use one kind of panels
* Reason: current will always flow through the low current panels short-circuit the high current ones.
* Type: non-flexible mono crystalline
* Stats: 240 cells to produce 15V and 40A max
* Budget estimation: $300
* Future questions to think about
  + - How will the solar panels connect to the car
      * + Need drills?
        + Stability on the car?
    - Packages for all electronics
    - Some area on car should be depressed to allow not only easier installation of the solar panels on car but also better for aerodynamics
    - On the inside on the car, there should be designed place where the battery, converters, etc. will be installed, boxed in, for safety and ease of use.
* Suggestions, questions and conclusions by team
* As the team composes the proposal, use the information to make presentation as well
* Are we looking for fast or slick design?
* Show 3D models to HPMI to get them more interested
* Showcase for aerodynamics
* Smallest possible design is better
* Clay leans towards Michigan Design
* Tasks
* Due FRIDAY
* FOR EVERY MEMBER: Every member is required to have accomplished at least half a page of material toward the milestone in their concentration area.
* TK: keep looking into Arduino Boards with CAN systems, MPPT algorithm and Eagles PCB
* Matt: Email Chris and Yan
* Chris: keep looking into batteries
* Clay, Ryan and Joseph: Continue work
* Announcements
* Milestone #2 is due on October 18th
* Milestone #2 presentation is due on October 22nd
* Meeting with Chris for high efficiency DC-DC converter
* Meeting with Yan
* Meeting with the Advisory board on October 26th

Next meeting

Date: 10/16/2012

Time: 5:30pm

Location: McLaren Classroom, CAPS, Building A

Agenda: Progress on tasks

Progress on Milestone #2 Completion