

## Project Bi- Weekly Progress

Date: 11-26-13

**Project Title: Solar Powered Arc Jet Thruster**

**Students Names: Chris Brolin, Cory Gainus, Gerard Melanson, Tara Newton Griffin Valentich, Shane Warner**

**Mentors/ Coordinator/ Sponsor: Dr. Guo, Dr. Kwan, Dr. Andrei, Kurt Polzin, NASA**

**1. Project Title: Solar Powered Arc Jet Thruster**

**2. Project Objectives/tasks Breakdown:**

Design, build, and test a direct drive arc jet thruster for purposes of providing propulsion under vacuum.

Design and execute a test plan to systematically quantify the range of operating conditions over which gas ionization can be achieved.

Perform tests to see if a continuous discharge at these power/current levels can be sustained, and quantify if possible

**3. What was accomplished the last two weeks on individual tasks- representative supporting data/ documents**

Dimensions finalized on thruster design – Griffin, Cory, Tara Chris

Electrical components finalized and values selected – Shane, Gerard

Vacuum chamber acquired

Materials selected – all

Website up to date – Shane

Advisor (Dr. Guo) approved of design

Midterm II Report and Presentation was given

Purchase order finalized – need to submit – Chris

Matlab circuit simulation – Shane

Updated report and magnet dimensions chosen – Gerard

Proper pro e model made – Griffin and tara

Drawings produced - Tara

**4. Summary of problems encountered and actions taken (and by whom)**

Dimensions of chamber needed to be selected – Cory and matlab helped determine chamber needed to be 3.75 inches long  
Manufacturability concerns – Tara and Griffin came up with good ideas input from Keith Larson as well

**5. Attached Gantt chart modifications and analysis if project is behind schedule and summarize actions planned to overcome the problems)**

**6. Work planned for the next period and the person(s) responsible:**

- Need to talk to machine shop more to get feasibility of manufacture - Griffin
- Place order to materials and electrical components - Chris
- Determine how to test thruster – Cory Tara
- Run circuit tests – Shane and Gerard

**7. Open comments/suggestions (Please feel free to include your private comments):**

**Coordinator/ Instructor assessment report and corrective action**

