

Visitor Research Report

Visitor Name: Mr. Scott Hopkins
Virginia Polytechnic Institute and State University

Area of Research: Multifunctional Aerospace Materials

Period of Visit: May 19, 2008 through August 15, 2008

Goal:

To assist Dr. Logan in the development of a lunar habitat and to assist graduate students with their research.

Strategy:

Use the material I have learned in my classes at Virginia Tech and apply it to multifunctional aerospace materials research.

Accomplishments:

- 1.) Pacific International Space Center for Exploration Systems (PISCES)
 - aided graduate students in preparing for this competition
 - developed a model for a solar simulator which was displayed at the competition
 - assisted in the writing of a paper for the competition
 - our team tied at first place with students from MIT
- 2.) Solar Simulator
 - developed concepts and drawings for the solar simulator
 - constructed the solar simulator for testing
- 3.) Lunar regolith reactions
 - assisted in lunar regolith reactions for research
 - reactions were also run at the request of engineers and curious spectators
- 4.) Lab
 - cleaned lab when it needed to be cleaned
 - organized reaction specimens and other miscellaneous objects
 - kept inventory for chemicals

Future Work:

- 1.) Lunar habitat
 - come up with a design for a lunar habitat
 - find a way to shape bricks and place them advantageously for structural support
- 2.) Mold for bricks
 - construct a mold for "moon bricks"
 - use a slip-cast silica method with plaster of Paris as the parent mold
- 3.) Hot Press
 - get the hot press up and running
 - write a Lab VIEW program to control the hot press

Pending Publications:

None

Seminar Presented:

None