sdmay18-05: 3D Metal Printer

Week 7 Report
October 15 - October 21

Team Members

Kevin Oran — *Mechanical Design*
Ben Pieper — *Researcher / Communicator*
Jett Ptacek — *Meeting Organizer / Researcher*
Caleb Toney — *Researcher*
Rachel Shannon — *Researcher/Meeting Notes*

Summary of Progress this Report

Further research was conducted to narrow down purchases for oxygen sensors. We are currently reviewing some trace oxygen sensors which would circulate air through a tube to monitor oxygen levels.

On the software front a project was started to begin developing a user interface and testing the stepper motor control.

The team spoke with a representative from velmex about the performance of their actuators in a vacuum. We received both a contact and some recommend steps for when it is time for a quote.

The main design CAD was re-worked and almost all parameters are consolidated in a single equations file for the whole machine. This design was presented to both our professor and the chemistry machine shop to be refined as we move closer to being able to order stock and begin manufacturing.

Pending Issues

Still need to do pressure calculations with our proposed seal design. Also need to investigate polycarb coating to contain laser.

Plans for Upcoming Reporting Period

Modify print beds to be machinable and design a piston seal for the print beds.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Kevin Oran	Reworked design, contacted velmex and led discussion with machine shop	16	46
Ben Pieper	Ben worked on researching and also on the software for the beginning of the application.	6	40
Jett Ptacek	Jett worked on beginning the application for the project.	6	39

Caleb Toney	Caleb continued research on the oxygen sensors.	6	35
Rachel Shannon		6	32