Senior Design Project 12317 – Nanomanipulator

Minutes from meeting held on 1/13/12

Present:

Brad Ling Rob Hughes Sabine Loebner Brad Olan Jaclyn Bastardi William Nowack

Meeting ran from 6-8:15 PM in Senior Design Lab

1. Disassembly of hydraulic manipulator

-Joystick moves one axis on slider. Slider holds diaphragm pump and is pushed into stopper. Pressure from impact acts on an identical pump at manipulator end that pushes off of identical stopper. Pump moves slider. Spring provides opposite movement for both sliders.

2. Concept Selection

Open System Closed System ++-More pump options -Bubbles -Simplicity -Limited Rom -Complexity -Unlimited ROM -Purchase? -Same forward and -Cost -No pump needed -Learning Curve backward -Easy Conrtol Control Sytem has been selected. O-Ring Diaphragm ++-Non-Linear -Understand -Loser Tolerance -Limited Rom -Beter Seal -Spring Rate -Easy to Find -More Leak -Easy to Customize -Friction

Screw Driven Syringe will be used as actuator but research to decide if Piston Clinder (O-Ring), Diaphragm, or Syringe.

4. SDR tips from Schrlau

-Start with overall background

-Order start to finish of our development

5. Roles

Actuator/Force- Brad O, Jaclyn

Servo/Shuttle-Rob

Systems/Control-Brad L

CE-Sabine