Senior Design Project 12317 – Nanomanipulator

Minutes from meeting held on 1/27/12

Present:

Brad Ling
Rob Hughes
Sabine Loebner
Brad Olan
Jaclyn Bastardi

Meeting ran from 3-4 PM in Senior Design Lab

1. Rob presented a stepper motor borrowed from robotics lab.

2. I/O boards can achieve 1/16 stepping or 3200 steps per tunr. Would result in 1:2 diameter ratio. Needs power supply and motors. Lead time of 3 days.

3. Begin initial set up of turning motor with computer using Micro Controller.

4. Sample code walkthrough on Monday.

5. Brad O presented design for manipulator sliders. Expressed concerns of cost and use of slides in nano manipulation, such as friction and "rocking" of carriage in track. Contacted vendor and waiting to hear back.

6. Jackie presented cylinders as diaphragm pumps are difficult to come by. ½ inch cylinder pump will be nominal value for pump. Needs to be designed for 15mm of travel.

7. Lead screw-nuts are expensive ($300-$400). Purchase cheap plastic nut to see if breaks and purchase metal nut if so. Possible ANSYS analysis.