References Useful for Fabrication

For the final project, you may choose one of these processes listed below for fabricating your MEMS or microfluidic device. Or, if you are familiar with MEMS fabrication techniques, you may develop your own process or a mixture of the above processes (with permission from the instructors).

1. MUMPS (Surface micromachining)
   www.ece.ncsu.edu/erl/tutorials/mumps

2. Sandia SUMMiT process (Surface micromachining)
   J. Bustillo et al. article, pp. 48-50 in reader. Also, Sandia SUMMiT website,

3. Polysilicon germanium (Integrated MEMS)
   A. Franke et al. article, pp. 160-2 in reader.

4. SOI MEMS (Integrated MEMS)
   Analog Devices process, T. Brosnihan et al., pp. 170-3 in reader.

5. CMOS Foundry process (Integrated MEMS)
   J. Bustillo et al. article, p. 58 in reader.
   H. Xie, and G. K. Fedder, Vertical Comb-Finger Capacitive Actuation and Sensing for

6. Microchannels etched in silicon or glass (Microfluidic chip)
   S. A. Sundberg et al., Supplement to Drug Discovery Today, Vol. 5 No.12, 2000. Selected pages
   are in links section of website.

7. Polymer molding technique with PDMS (Microfluidic chip)
   S. Quake et al. article, pp. 393-4 in reader.
   Silicone material properties in Becker et al. article, p. 269 in reader.
   M. A. Unger and S. R. Quake et al., “Monolithic Microfabricated Valves and Pumps by