Michael J. Whitson

PO Box 390618, Cambridge MA 02139
+1.617.378.8977
mwhitson@mit.edu
http://web.mit.edu/mwhitson

Objective An exciting position in micro/nanofabrication research with long-term career growth potential.

Employment

OSRAM Opto Semiconductors, Regensburg, Germany. Jun 2009—Oct 2009

Graduate intern, through the MIT Germany Program. Implemented procedures to improve measurements of optical dispersion of thin films, using simultaneous parametric model fitting of multiple optical metrology datasets. Delivered dispersion curves and optical models for several optical films representing significant improvements in quality of in-house data.

Optron Systems, Bedford, Mass. Apr 2008—Feb 2009

Research Engineer. Performed microfabrication and process development for MOEMS diffractive membrane mirror spatial light modulators. Developed numerical wave optics analysis of modulator cells to aid in optimization of optical chain using muldimensional Fourier analysis.

Precision Compliant Systems Laboratory (MIT), Cambridge, Mass. Sep 2006—Dec 2007

Research Assistant. Collaborated on design of a mesoscale six-axis positioning system with nanometer / microradian-scale repeatability, based on the PCSL's HexFlex series of flexure stages. Work included precision error budgeting, consultation on mechanism position sensor design, precision fixturing system design, and microfabrication process engineering.

Esashi Laboratory (Tohoku Univ.), Sendai, Japan Oct 2005—Aug 2006

Visiting researcher, through the MIT Japan Program. Performed device design, process design, analysis, and preliminary fabrication of a piezoelectric ultrasonic micro-resonator, to be used as an intravascular elastographic transducer. Participated in teaching rotation for laboratory-wide technical seminars and English lessons.

Nantero, Woburn, Mass. Jun 2004—Sep 2005

Micro/nanofabrication technician. Assisted device engineers with processing of prototype device wafers for company's core carbon nanotube memory and other products. Performed rapid device analyses to help set short-loop test goals.

Education

Massachusetts Inst. of Technology, Cambridge, Mass. S.B. June 2007; M.Eng. candidate

Received Bachelor of Science in Electrical Engineering and Computer Science with additional coursework in Materials Science and Engineering. Areas of focus and graduate-level coursework included microfabrication, MEMS design, and nanoscale materials. On leave from M.Eng. program in EECS with one semester remaining. Cumulative GPA is 4.5/5.0.

Skills Over 3 years of laboratory-scale cleanroom and microfabrication experience, focusing on small-run iterations of MEMS/NEMS device prototypes. Process experience includes vacuum and plasma systems, UV and electron beam lithography, evaporation, sputtering, atomic layer deposition, reactive ion etch (including DRIE), lift-off, and wet etch processes. Experience with optical, interferometric, atomic force, and scanning electron microscopy; spectroscopic ellipsometry and reflectometry.

Experience with COMSOL, SolidWorks, AutoCAD, Coventor, LabView, MATLAB, and Mathematica. Technical writing experience in Word and LaTeX. Proficient in VHDL, C, C++, Scheme, perl, and Unix shell scripts. Nearly four years of experience with several types of Unix (including Solaris and GNU/Linux) as professional administrator and programmer.

Proficient in conversational Japanese and Norwegian, some knowledge of German.

Publications

Whitson, Esashi, Haga, *et al.*, *Piezoelectric Resonator for Intravascular Ultrasonic Elastography*. IEEJ Papers of Technical Meeting on Bio Micro Systems, v. BMS-06 (2006), p. 63.