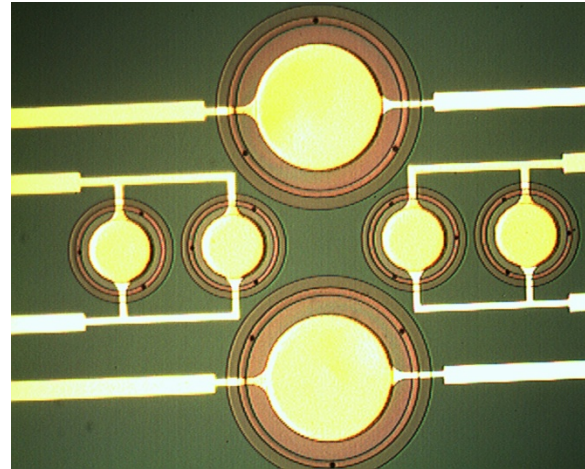
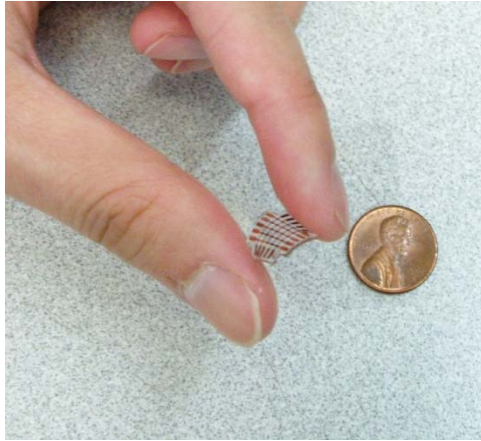


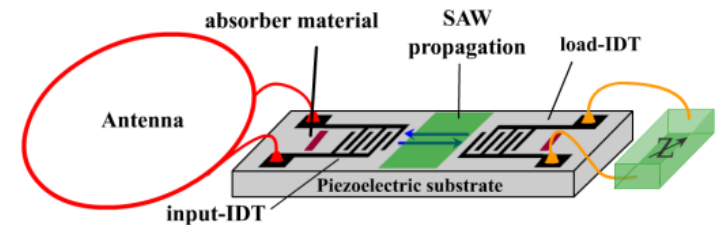
MEMS Sensors

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 Mechanical Engineering, University of Minnesota
 NNIN Facility utilized: Nanofabrication Center

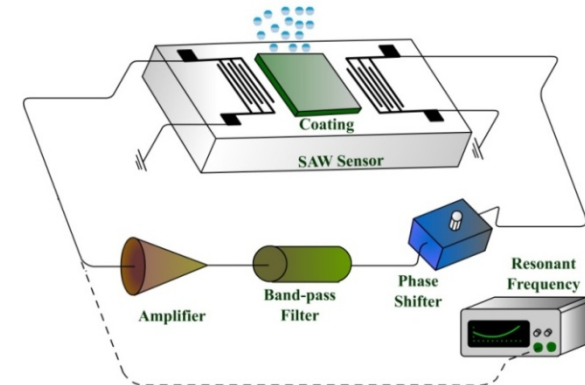
MEMS Tactile Sensors for Minimally Invasive Applications



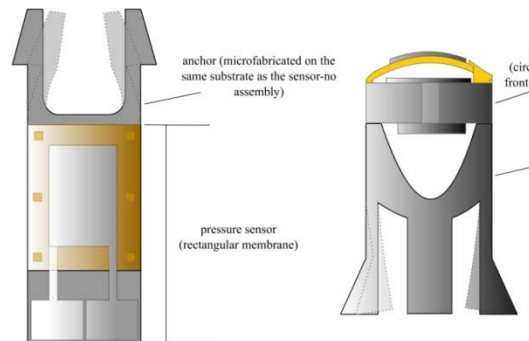
Battery-less Wireless MEMS Sensors



Wireless Carbon Nanotube Sensors for Breath Analysis in Humans



Muscle Force Sensor for Neuromuscular Diseases



- 1) X. Yu, R. Rajamani, K.A. Stelson and T. Cui, "Fabrication of Carbon Nanotube Based Transparent Conductive Thin Films Using Layer-by-Layer Technology," *Surface and Coatings Technology*, Vol. 202, No. 10, pp. 2002-2007, February 2008.
- 2) S. Sivaramakrishnan, R. Rajamani, C.S. Smith, K.A. McGee, K.R. Mann and N. Yamashita, "Carbon Nanotube Coated Surface Acoustic Wave Sensor for Carbon Dioxide Sensing," *Sensors and Actuators, Part B: Chemical*, Vol. 132, No. 1, pp. 296-304, May 2008.
- 3) S. Sivaramakrishnan, R. Rajamani and T.M. Pappenfus "Electrically Stretched Capacitive Membranes for Stiffness Sensing and Analyte Concentration Measurement," *Sensors and Actuators, Part B: Chemical*, Vol. 135, No. 1, pp. 262-267, December 10, 2008.