Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Polymer Coated Surface Acoustic Wave Biosensor for Living Cells LIAN DAI, ECE U. Mass Lowell, JIANPING ZHANG, ABICHE DEWILDE, GANG WANG, Biology U. mass Lowell, KENNETH MARX, Chemistry U. Mass Lowell, SUSAN BRAUNHUT, Biology U. mass Lowell, JOEL THERRIEN, ECE U. Mass Lowell — A shear horizontal surface acoustic wave (SH-SAW) biosensor is fabricated on quartz wafer for measurement of mechanical properties of living cells. The SAW device was fabricated with a top film of polymer (PMMA, SU-8) to avoid immense attenuation in aqueous media. Several models were designed to operate under different frequencies such as 20MHz, 40MHz and 80MHz and higher in order to identify how frequency affect the sensitivity. A network analyzer was used to capture the resonant frequency of inter-digitated transducers (IDT) of SAW, and it is found that resonant frequency shift is closely correlated to the cell deposition on the sensing area of SAW.

J Therrien
ECE U. Mass Lowell

Date submitted: 11 Nov 2011 Electronic form version 1.4