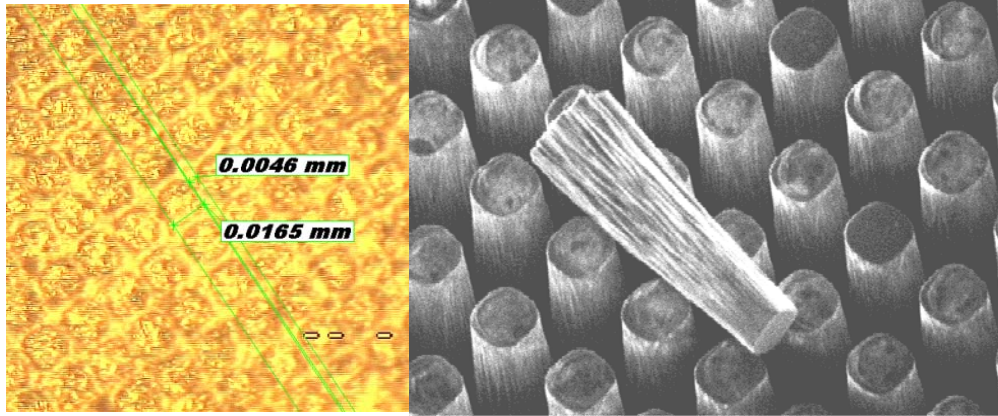
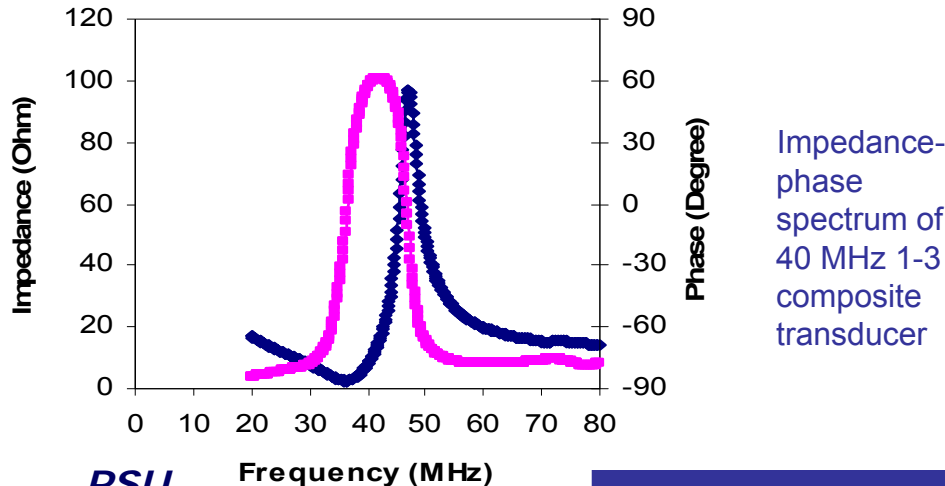


Micromachined Piezoelectrics for High Frequency Ultrasound

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composites with electrodes high aspect ratio PMN-PT micro-posts



High frequency (HF) ultrasound is used for medical imaging and industrial non-destructive evaluation (NDE) because of its high resolution. A deep reactive ion etching process was developed at the PSU NNIN site for micromachining bulk piezoelectrics to fabricate 2-2 and 1-3 PMN-PT single crystal/epoxy composites for HF ultrasound transducers. The electromechanical coupling coefficients of the micromachined composites are > 0.7 , and the frequency range is about 20-60 MHz. Transducers fabricated using these composites have unprecedented performance for IV ultrasound imaging.