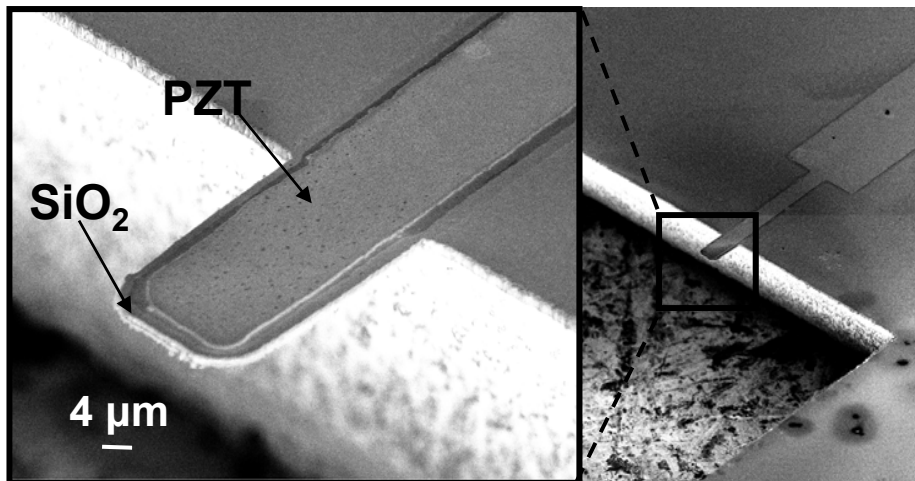


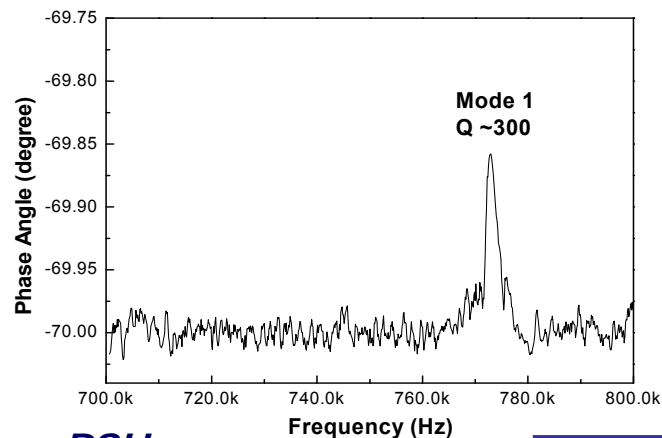
Piezoelectric Microcantilever Sensor

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The piezoelectric micro-cantilever sensor (PEMS) consists of a piezoelectric layer, lead zirconium titanium (PZT), and a non-piezoelectric layer, SiO₂. The device can self-excite and self detect mechanical resonance electrically for various sensing applications.

The 40 μm long PEMS demonstrated 6×10^{-16} g/Hz mass detection sensitivity for humidity detection¹. It is the smallest and most sensitive PZT based PEMS in the world so far.



Spectrum of
40 μm long
PZT/SiO₂
micro-
cantilever

¹Zuyan Shen, Wan Y. Shih, and Wei-Heng Shih,
Applied Physics Letter 89, 023506 (2006).