

Abstract

The work in this thesis reports resonance in electromechanical systems. Quartz oscillator showed resonance at 32762 Hz with a loaded quality factor of the order of 104 . Lock-in amplifier was used to increase signal to noise ratio. Another system studied was quartz resonator which showed a resonance peak at 20 MHz and loaded quality factor of the order 104 . The final system to be studied was nanomechanical resonator, which was given fabricated. For placing the sample in vacuum, a vacuum can of brass metal was fabricated. For transmission line and sample holder, microstrip waveguide was fabricated from FR4 dielectric material and copper was used for conducting strip and ground.