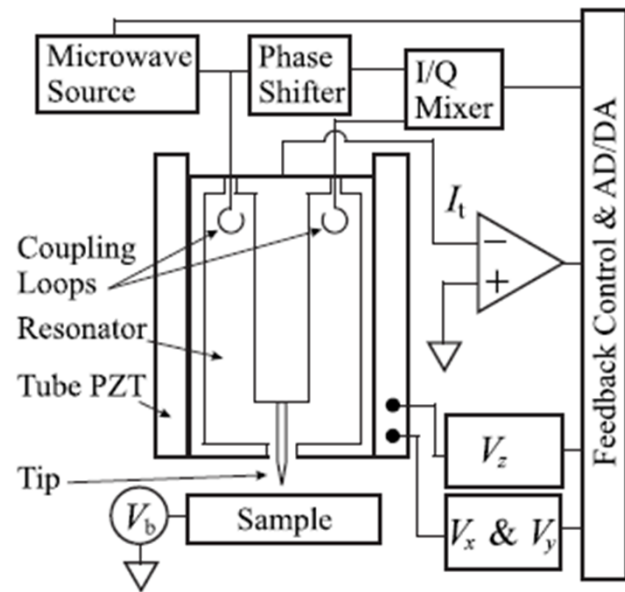


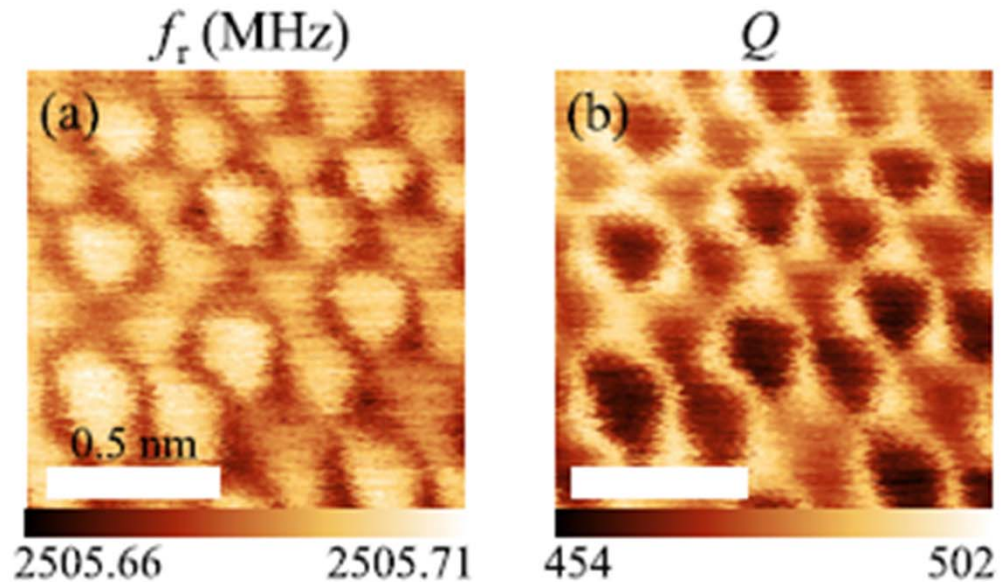
Atomic Resolution Imaging at 2.5 GHz using Near Field Microwave Microscopy

Ichiro Takeuchi, Applied Physics Letters 97, 183111 (2010)
University of Maryland MRSEC DMR 0520471

Sub-nanometer probes of surfaces provide important information about chemical and physical properties of materials at atomic level. Microwave microscopy (**left**) is used to study materials properties at GHz (10^9 sec^{-1}). This is the frequency range relevant for computers and cell phones, for which the materials are being explored. We show for the first time that one can image atoms at this frequency (**right**).



Schematic of microwave microscope



Atomic resolution images of Au(111) surface resolved in microwave signal