

عنوان مقاله:

Effect of interactive normal and lateral stiffness and damping and tip dimensions on the flexural vibration modes of rectangular AFM cantilevers

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نویسندگان:

Mehdi Shekarzadeh - *MSc. Student Mechanical Department of Ahwaz Azad University*

Abbas Rahi - *Assistant Professor Mechanical Department of Ahwaz Azad University*

خلاصه مقاله:

In this paper The effect of interactive normal stiffness and damping and tip dimensions on the flexural vibration modes of an atomic force microscope (AFM) rectangular cantilever is analyzed. A closed-form expression for the sensitivity of vibration modes is derived using the relationship between the resonant frequency and contact stiffness of cantilever and sample. Each mode has a different sensitivity to variations in surface stiffness. This sensitivity directly controls the image resolution. It is obtained an AFM cantilever is more sensitive when the contact stiffness is lower and the first .mode is the most sensitive mode

کلمات کلیدی:

Atomic force microscope, Cantilever, Sensitivity, vibration analysis, Damping effect

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