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Title:Detection of pulsed far-infrared and terahertz light with an atomic force microscope
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Abstract:We show that a commercial atomic force microscope can be used at room temperature as a detector throughout the infrared spectrum simply by recording the induced oscillation of its cantilever after irradiation by a pulsed laser. The oscillation amplitude can be made larger by spraying an absorbing graphite layer on the tip side. We demonstrate that its good sensitivity is due to a bilayer effect: their different thermal expansion coefficient forcing them to bend under irradiation. For the far-infrared spectral range, this device avoids the use of Helium cooled detectors and their numerous constraints. © 2012 American Institute of Physics.
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