



Resonant photo-thermal conversion for sub-terahertz imaging

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Titre	Resonant photo-thermal conversion for sub-terahertz imaging
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Auteur	Jolly, Alain [1], Chassagne, B. [2], Jolly, Jean-Claude [3]
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Résumé en anglais	An original design of generic interest is proposed for fast imaging, in the field of sub-terahertz frequencies, by means of resonant coupling between an ultra-thin photo-thermal converter and a metallic grid upstream an infrared camera. The material is a sheet of polyimide material with a high content of absorptive carbon inclusions. We make use of the large difference between the IR and THz wavelengths in a quarter-wave planar geometry, to ensure a highly efficient and stable conversion process. A complete setup has been implemented for demonstration purposes, using the beam from a Gunn diode at 110 GHz. Experimental results are in good agreement with the predictions from the numerical model, which helps to validate the concept and the requirements for geometrical adjustment.
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- [4] [http://okina.univ-angers.fr/publications?f\[keyword\]=10712](http://okina.univ-angers.fr/publications?f[keyword]=10712)
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