Abstracts

Composite Microbolometers with Tellurium Detector Elements

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A composite microbolometer has been constructed for possible use as a broad band submillimeter radiation detector. Theory, fabrication, and measurement of these devices are discussed, and a finite element thermal model is introduced. Our devices utilize nichrome load elements which can be impedance-matched to a planar antenna. The load elements are thermally coupled to tellurium detectors. We achieved room temperature responsivities of 120 V/W, and noise equivalent powers (NEP) as low as 6.7 X 10/sup-9/ W//spl radic/Hz. Performance appears to be limited by 1/f noise in the Te detector.

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