43
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Title:Terahertz fingerprinting in presence of quasi-ballistic scattering
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Abstract:Recent years have seen significant advances in material diagnostics and analysis using terahertz (THz) time domain spectroscopy (TDS) and imaging. Despite its widespread application, the interaction between THz radiation and materials with random structure is not yet fully studied. Separation of absorption and scattering is required to extract the true absorption spectra, thus enabling direct comparison with pure samples in a spectral data base for automated recognition. Here, we present a discrete wavelet transform based iterative reconstruction technique that reduces the scattering contribution in THz-TDS measurements, in composites with absorbing constituents that exhibit sharp absorption features. © 2012 Crown.
Number of references:25
Main heading:Terahertz spectroscopy
Controlled terms:Discrete wavelet transforms - Scattering - Time domain analysis
Uncontrolled terms:Automated recognition - Iterative reconstruction techniques - Quasi-ballistic - Random structures - Spectral data - Tera Hertz - Terahertz time-domain spectroscopy - THz radiation - THz-TDS
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