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Title:Terahertz substance imaging by waveform shaping

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Abstract:Terahertz pulse shaping technique is used to adaptively design terahertz waveforms of enhanced spectral correlation to particular materials among a given set of materials. In a proof-of-principle experiment performed with a two-dimensional image target consisted of meta-materials of distinctive resonance frequencies, the as-designed waveforms are used to demonstrate terahertz substance imaging. It is hoped that this material-specific terahertz waveforms may enable single- or few-shot terahertz material classification when being used in conjunction with terahertz power measurement. &copy; 2012 Optical Society of America.

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