

## Entangled femtosecond free induction signals in a cadmium sulfide crystal at room temperature

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### Abstract

Entangled free induction decay (EFID) femtosecond signals are experimentally observed for the first time at a wavelength of 790 nm in a cadmium sulfide (CdS) crystal in the two-photon absorption (TPA) regime upon excitation by two crossed (angle, 60°) laser beams. The sample emitted two EFID signals simultaneously in opposite directions. The signals were diffracted by nonequilibrium electric polarization gratings induced by two laser beams in accordance with the laws of energy and momentum conservation. The possibility of exciting EFID signals in the three-photon absorption regime is discussed. © Allerton Press, Inc., 2012.

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