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Femtosecond photon echo in dye-doped polymer films at room temperature

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Abstract

The signals of primary and stimulated femtosecond photon echo in polymer films doped with dye (phthalocyanine) molecules have been experimentally investigated at room temperature. A femtosecond echo spectrometer for these echo experiments is described. The decay curves of echo signals with increasing time intervals between excitation femtosecond pulses are obtained and blue shifts of the spectra of femtosecond echo signals with respect to the spectrum of excitation pulses are revealed. The possibilities of using the studied doped polymer films as recording media for high-temperature echo processors and coolants in optical refrigerators are analyzed. © Allerton Press, Inc. 2008.

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