

Laser Physics 2014 vol.24 N9

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# Femtosecond photon echo and four-wave mixing in dye-doped polymer films, semiconductors and heterostructures

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## Abstract

A review of femtosecond experiments on photon echo (PE) and four-wave mixing (FWM) performed at room temperature is presented. The Weiner-Ippen technique of FWM spectroscopy is demonstrated in dye-doped polymer films (such as polyvinilbutural doped with phthalocyanine), semiconductors (CdS) and heterostructures (GaAs/AlGaAs). The experimental setup used in these experiments is described. The dephasing times are estimated and the relaxation mechanisms are discussed. © 2014 Astro Ltd.

<http://dx.doi.org/10.1088/1054-660X/24/9/094013>

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## Keywords

Photon echo, Relaxation mechanism, Weiner-ippen technique