

PHOTOTHERMOACOUSTIC
EFFECT IN LAYERED POLYMER
FILMS—PIEZOELECTRIC STRUCTURES

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S u m m a r y

We have studied theoretically and experimentally the photothermoacoustic (PTA) effect in polymer films with the piezoelectric registration of informative signals in the following polymers: polyurethane, polypropylene, and nylon. It is shown that the PTA effect in the layered polymer—piezoelectric structure in the form of a thin plate may be used for measuring some elastic and thermal parameters at low frequencies of modulation of the light flux. We defined experimentally the reduced Young modulus and the thermal diffusion coefficient of the above-mentioned polymers.