

PHOTOTRANSFORMATIONS
IN CELLULOSE CINNAMATE FILMS
AT ILLUMINATION WITH POLARIZED UV LIGHT

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S u m m a r y

Light-induced changes in photosensitive organic polymer films based on cellulose cinnamate have been studied. Film specimens illuminated with polarized UV light are found to become anisotropic. The dependence of the birefringence in the polymer film on the illumination time is measured, and the difference between the refractive indices for the extraordinary and ordinary waves is found to have a maximum. The constant and dynamic anisotropy components are found to exist in the films under illumination, and they are driven by different recording mechanisms. The relaxation process in the films after their UV illumination has been switched-off can be described by an exponential dependence with the characteristic times typical of the cis-trans isomerization. The mechanism of photodimerization is found to be responsible for the existence of a constant anisotropy component.