Photodegradation of Xanthene, Triarylmethane, Thiazine, and Diazine Dyes in the Presence of Thiophene Azo Dyes in Polymer Films

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Abstract—With the aim to expand the assortment of lightfast dyes that can be used as absorbing agents in polymer film color filters for motion picture, photo, and TV equipment, attempt was made to stabilize xanthene, triarylmethane, thiazine, and diazine dyes, exhibiting poor lightfastness, without introduction of special photostabilizers, using instead thiophene monoazo dyes, which are also used in color filters. Studies of photodegradation of these dyes taken separately and in mixtures with each other in cellulose acetobutyrate films revealed pairs of dyes enhancing the lightfastness of each other. The binary mixtures prepared can be recommended for use in lightfast color filters with complex spectrum characteristics.

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