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## Photochromic behavior of spiropyrans: The effect of substituent (Conference Paper)

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## Abstract

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Spiropyran are among the most promising organic photochromic dyes. However, spiropyran are very sensitive dyes and there are many independent factors that can affect the performance of these dyes. The effect of substituent on the optical absorption spectra, fading kinetic, and also the dye stability of spiropyran in diphenyl ether by UV irradiation has been investigated. The 6-nitro BIPS displayed greater absorbance intensity of 0.740% at 600nm compared to 8-ethoxy-6-nitro BIPS of 0.651% at 620nm. Furthermore, 6-nitro BIPS is less stable as it has higher rate constant of  $0.1003\text{s}^{-1}$  and thus lower half-life time (50% decay of the photochromic effect) of 6.9s, in contrast to 8-ethoxy-6-nitro BIPS of  $0.0594\text{s}^{-1}$  and 11.7s respectively. © (2014) Trans Tech Publications, Switzerland.

## Author keywords

Kinetic Photochromism Spiropyran Stability Substituent

## Indexed keywords

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