

## Dual emission of *trans*-3-styrylquinoline in solution

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Cyclohexane solutions of *trans*-3-styrylquinoline (3-StQ) have emission spectra with maxima at 357, 372 and 392 nm. The relative intensities of these maxima vary with the excitation wavelength. The fluorescence excitation spectrum of the band peaked at 357 nm is different from that of the band peaked at 392 nm: both the excitation spectra are different from the absorption spectrum. Similar behaviour has also been observed in other solvents of different polarities. Spectroscopy evidence, fluorescence and *trans* → *cis* photoisomerization quantum yields determined at different excitation wavelengths and fluorescence lifetimes suggest that two conformers in dynamic equilibrium are responsible for the dual emission of 3-StQ in solution.

## The fluorescence decay of butadiene derivatives

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The fluorescence decay times of all-*trans* diphenyl butadiene and tetraphenyl butadiene were measured in solutions of low and high viscosities at between -100 and +100 °C. The room temperature decay times are approximately 0.5 and 1.6 ns respectively. The measurements were performed with the single-photon technique using flashlamp excitation of about 1 ns duration and were analysed using numerical convolution. The small changes in the decay times observed illustrate the stability and resolution which can be expected from this widely used technique.