

The fluorescence spectrum of **1** (as a $1.0 \mu\text{mol dm}^{-3}$ solution in HPLC grade hexane) as a function of dose (gamma irradiation, 1.17 and 1.33 MeV, cobalt-60 source) is shown in Fig. 1. The large change in the overall fluorescence spectrum can be clearly seen as the relative intensity of the structured pyrene monomer emission increases with respect to the broad, structureless excimer emission centred at 470 nm. The sharp

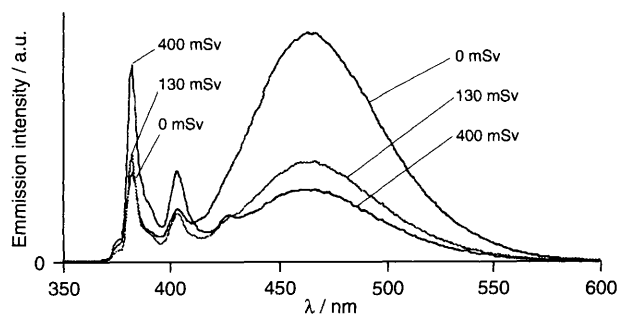


Fig. 1 Fluorescence spectra of **1** in hexane ($10^{-6} \text{ mol dm}^{-3}$) as a function of gamma dose. Excitation is at 340 nm, emission intensity is on arbitrary scale.

and structured nature of the monomer emission shows that it is due to fragments containing an isolated and intact pyrene fluorophore rather than an ensemble of many different fluorescent fragments, as would be generated by radiolysis and/or radical reactions of a compound initially containing only one fluorescent unit.

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