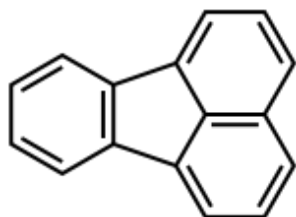


## A Reappraisal of Kasha's Rule

Juan Carlos del Valle, Javier Catalán

Universidad Autónoma de Madrid, Departamento de Química Física Aplicada, C-2-203.  
E-28049, Cantoblanco, Madrid.

### On the absorption and fluorescence for Fluoranthene.



Scheme 1-SI. Fluoranthene molecular structure.

Fluoranthene was early reported as an exception, thereby showing dual fluorescence.(cf. 38) On the contrary, the early experiments by Nauman et al (cf. 39) and the late experimental evidence at 20 K reported by Hofstraat et al demonstrated that one of the emissions at 352 nm was due to an impurity.(cf. 40) A further purification using reverse phase HPLC removed that impurity, thus showing just one emission band centered at 407.9 nm. The authors presented the absorption and emission bands, as well as the fluorescence excitation spectra. Nevertheless, on repeating the experiments, it is found that our experiments show great vibronic resolution which is absent in the experiments reported in hexane at room temperature by Hofstraat et al. Actually, the first peak emission appears at shorter wavelengths, 375 nm, the absorption and the fluorescence excitation spectrum resemble one another, but something else is present in the absorption spectrum, which corresponds with the impurity reported by Hofstraat et al. The spectra are reported as supporting information for the sake of clarity. Our experiments conform to those reported previously by Hofstraat et al.

38. Philen DL, Hedges PM. Chem. Phys. Lett., 1976; 43:358.

39. Nauman RV, Holloway HE, Wharton JH. Chem. Phys. Lett. 1985; 122: 523.

40. Hofstraat JW, Hoornweg GPh, Gooijer C, Velthorst NH. Spectrochimica Acta, 1985; 41A: 801.

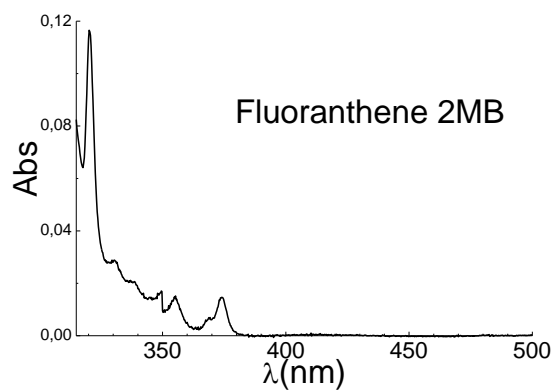


Figure 1-SI. Absorption spectrum for fluoranthene in 2-methylbutane.

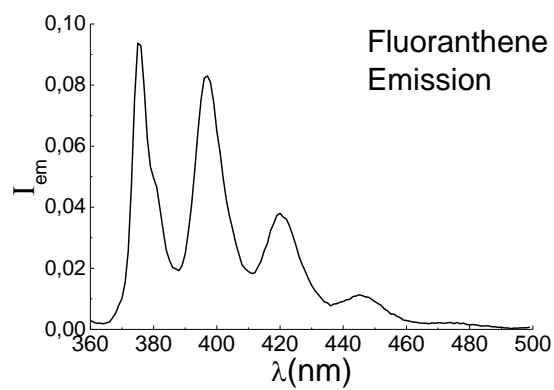


Figure 2-SI. Fluorescence emission for fluoranthene in 2-methylbutane.

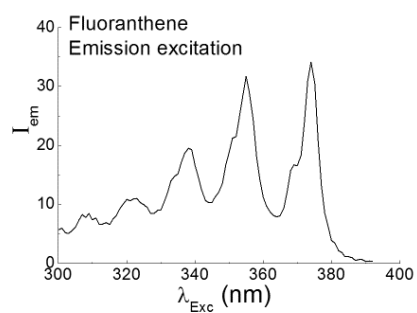


Figure 3-SI. Fluorescence excitation spectrum for fluoranthene in 2-methylbutane.