PHOTOCHEMISTRY OF 1?PYRENYLDIAZOMETHANE

Silva, Salom

Olea, Andreas F.

Thomas, J. K.

Photoexcitation of 1?pyrenyldiazomethane (1) leads to carbenes which attach to various molecules, e.g. surfactants, polymers, hydroxylated surfaces. This provides a convenient method of labelling these compounds with pyrene for probe studies of complex structures and surfaces. Photophysical and photochemical studies of the various events resulting from the photoexcitation of 1, show that the quantum yield for disappearance of 1 and of carbene formation is low (? 5%) and that other processes lead to relaxation of excited 1, in particular fluorescence and intersystem crossing. The mechanism involves a mixing of low lying ???* states of the pyrene chromaphore with diazo n??+ states, and is discussed in the light of other similar systems and the present studies.