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PHOTOCHEMICAL CYCLISATION OF POLYFLUOROAROMATIC COMPOUNDS

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It is found that photolysis of fluorosubstituted di-and triarylamines $Ar_F N(R)Ar$ in saturated hydrocarbons caused unusual cyclisation with loss of HF to give the carbazoles. The acceptors in fluorinated ring and donors in unfluorinated part of molecule accelerate the cyclisation.



Photolysis of anyls of polyfluoroaromatic ketones in conc. H_2SO_4 or in CF₃COOH leads to phenanthridines. This is the first example of photocyclisation of aromatic anyls by a non-oxidative process.



UV-irradiation of trans-2,3,4,5,6-pentafluorostilbene gives cis-isomer and derivative of cyclobutane. Lack the cyclisation is conditioned by lesser polarity of photo-excited state of stilbene than the photo-excited states of polyfluorodiarylamines or conjugated acids of anyls of polyfluoroaromatic ketones.