DIFFERENCES IN PHOTOBEHAVIOUR OF 2-HALOSUBSTITUTED 1,2-DIPHENYLETHANONE AND 1,3-DIPHENYLPROPANE-1,3-DIONE

Berta Košmrlj, Boris Šket

Faculty of Chemistry and Chemical Technology, Aškerčeva 5, SI-1000 Ljubljana, Slovenia

The nature of the photochemical C–X bond cleavage generally depends on the type of halogen atom, the structure of a substrate, and the solvent used. Herein, we would like to present our results on the study of the photolysis of some 2-substituted 1,2-diphenylethanones and closely related 1,3-diphenylpropane-1,3-diones in acetonitrile. For example, we have found that the irradiation of 2-fluoro-1,2-diphenylethanones in acetonitrile proceeds smoothly to a cyclic benzofurane derivative as the only product. The introduction of another chromophore group into the molecule substantially changes the reaction course, namely 2-fluoro-1,3-diphenylpropane-1,3-dione proved to be photostable.

We prepared a series of 2-halosubstituted ketones; fluoro, difluoro, chloro and bromo analogues, and compared their photobehaviour. The results will be discussed.