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Abstract	:	In this study, one kind of families of organic photochromic compounds has been prepared, bis-imidazole compounds. A spectral study has been carried out to investigate the properties of photochromic compounds that can be used in many industries such as CD, floppy disks, sunglasses, lenses, mobile screens and some other fields. Bis-imidazole compounds are usually prepared by the oxidization of imidazole derivatives using potassium ferricyanide. The photocoloration process of bis-imidazole was studied by the mean UV-Visible absorption spectroscopy and was found to obey a first-order rate equation . In this study, also the investigation of the effect of some additives on the photochromic properties of bis-imidazole compounds was undertaken . Separate solutions of additives [3.3a-c] and bis-imidazole compounds with equal initial concentration were prepared. Various volumes of the above solutions were mixed while keeping the final volume constant. These solutions were then irradiated with UV light and their spectra were recorded with time. The half-life of photocoloration with all additives was found to change, depending on the concentration of the photochromic compounds and additives . These changes could be found to be tentatively related to the electron donor ability of the additives. As the donor ability increases, the half-life increases (in other words, the rate of photocoloration decreases).
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