Electronic Supplementary Material (ESI) for CrystEngComm.

Photochemical reactivity of a lamellar Lanthanum MOF

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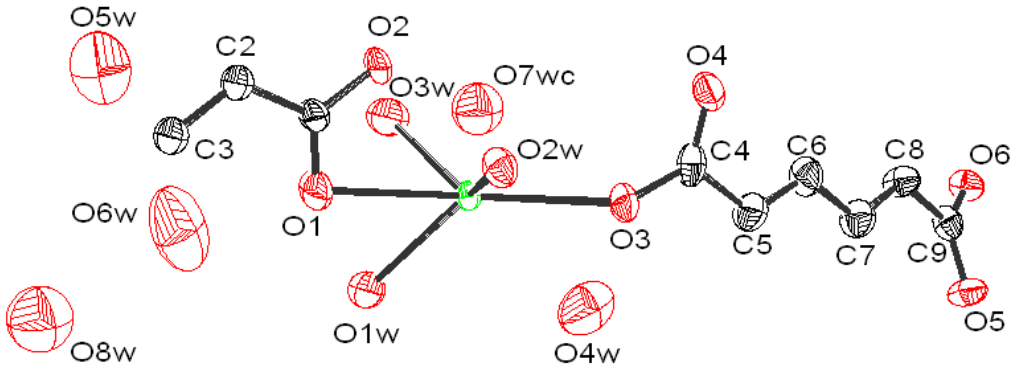


Figure S1. ORTEP drawing of the asymmetric unit of compound **1**.

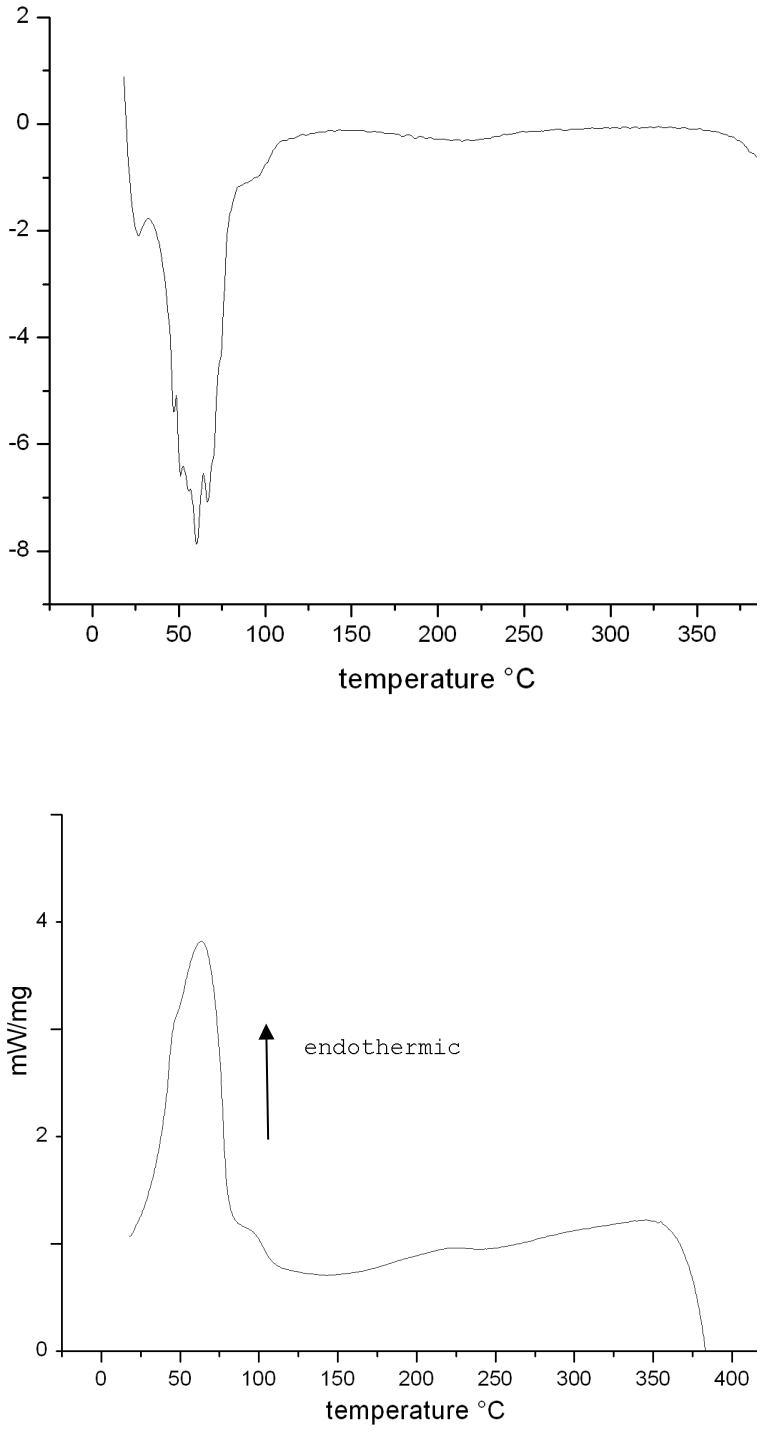
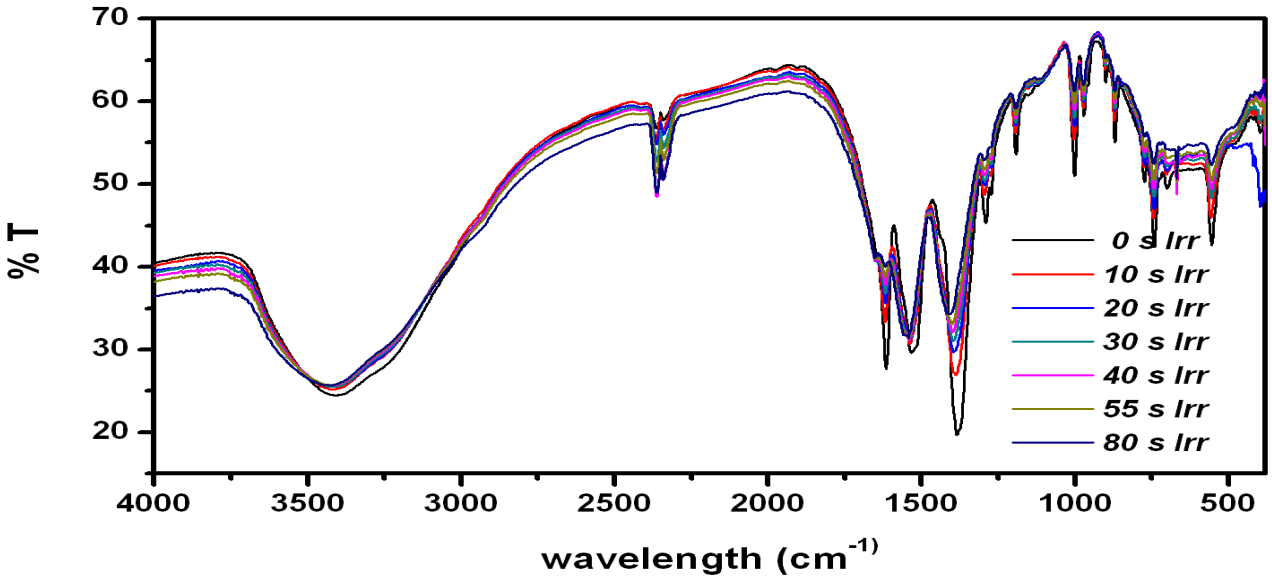


Figure S2. Top: DTG analysis of compound **1**. Bottom: DSC analysis of compound **1**.



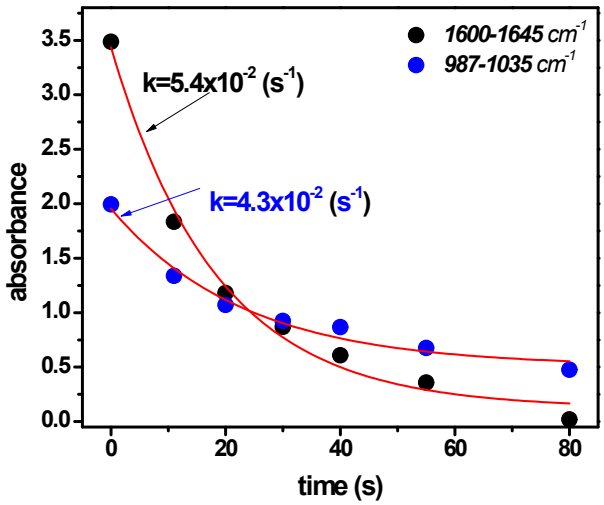


Figure S3. Top: IR spectrum of compound **1**as a function of irradiation time. Bottom: Absorbance in two spectral regions as a function of irradiation time with the corresponding calculated reaction constants for compound **1**.

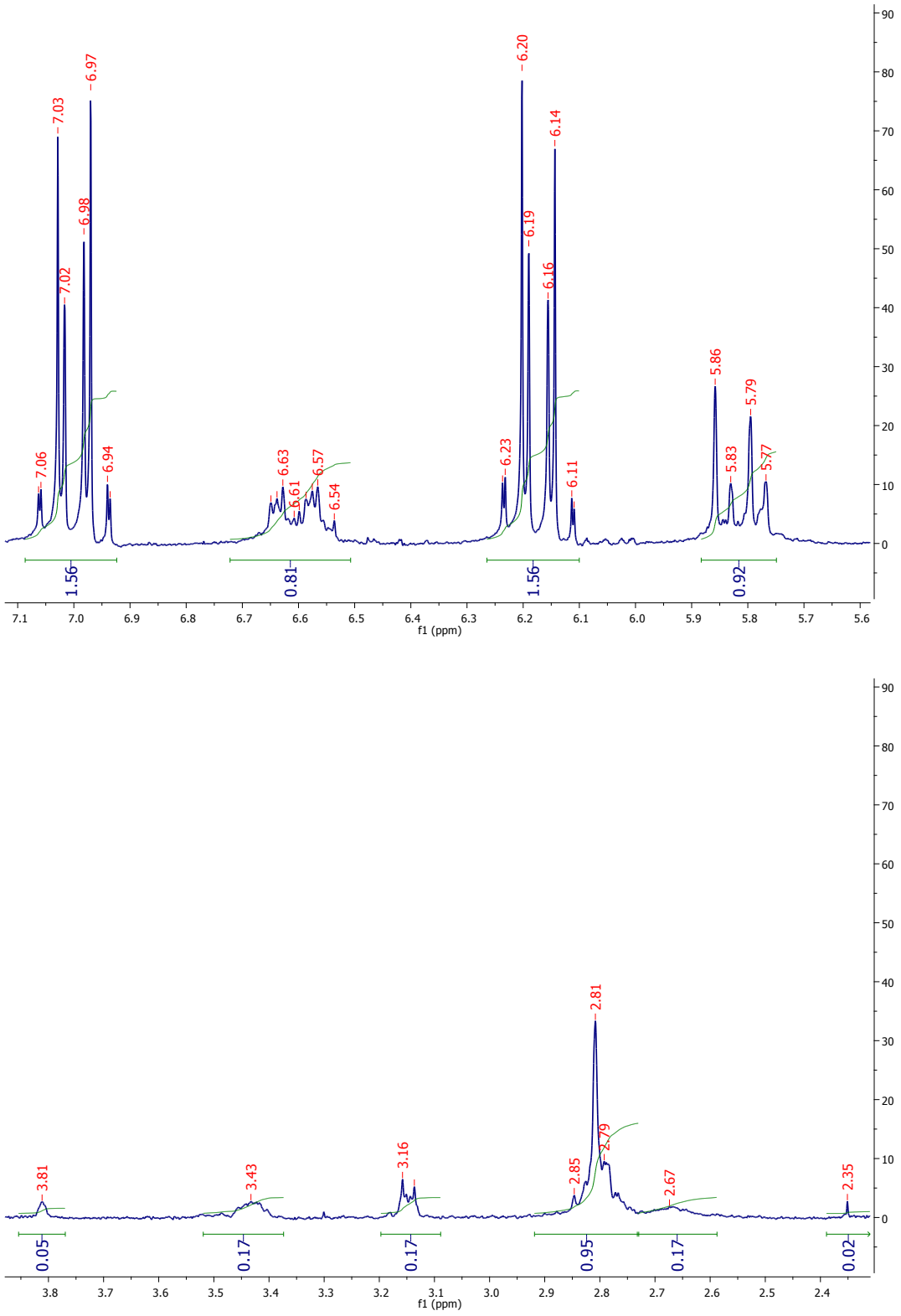


Figure S4. ^{1}H-NMR spectrum of the photoreaction products of **1** (1 h of irradiation) in alkaline D_2O solution.

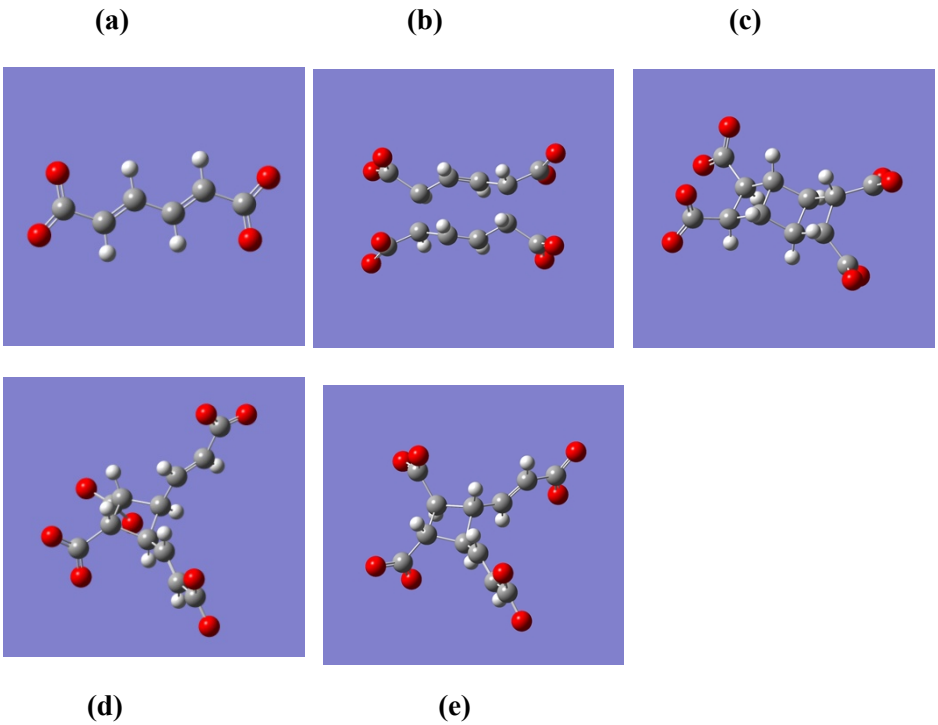


Figure S5.(a) Conformations of the hexadiendionc dianion and the photoproducts, in the anionic form, as obtained from DFT calculation.

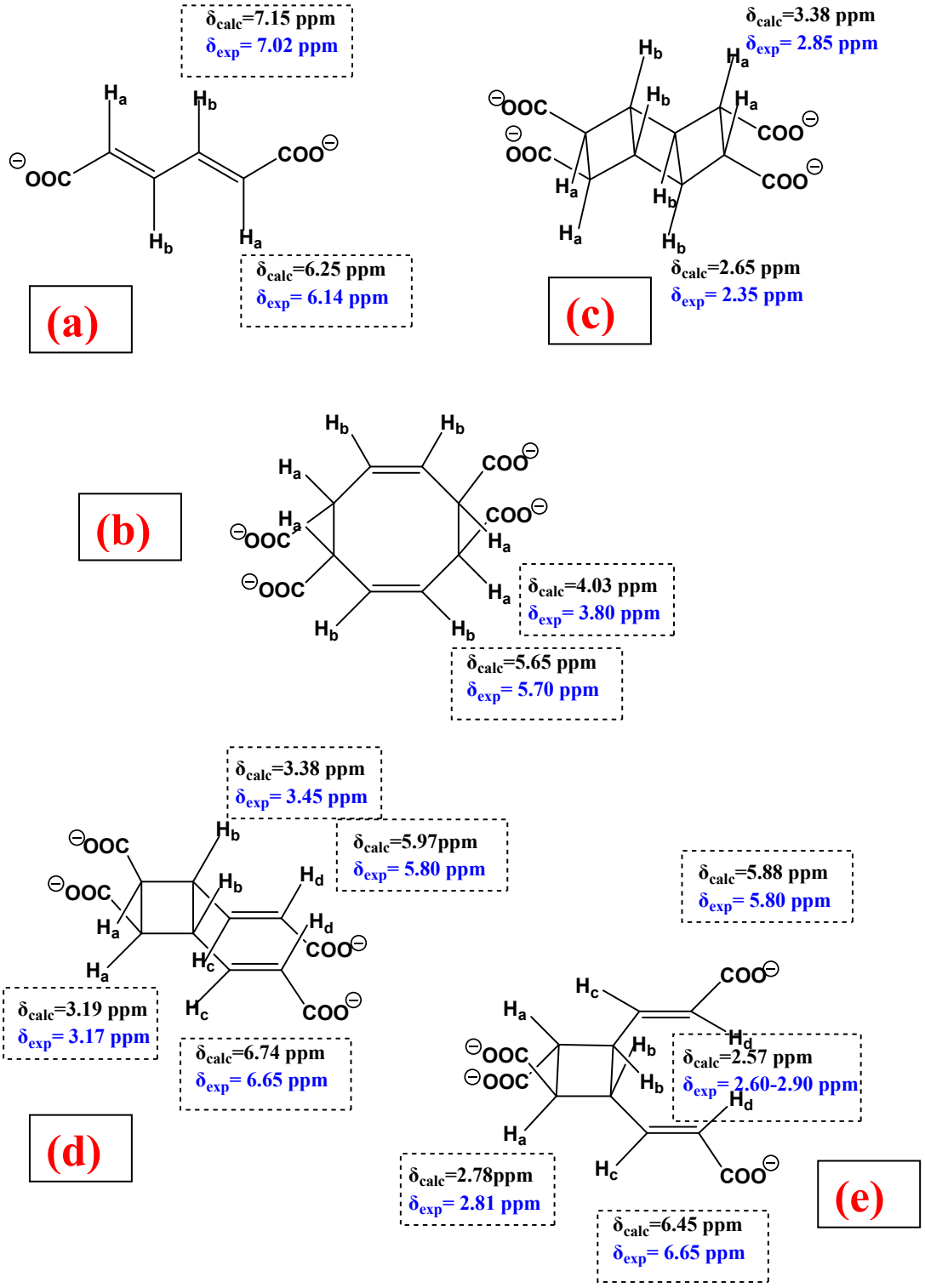


Figure S5(b). Calculated and experimental chemical shifts of the hexadiendionc dianion and all photoproducts(in the anionic form).

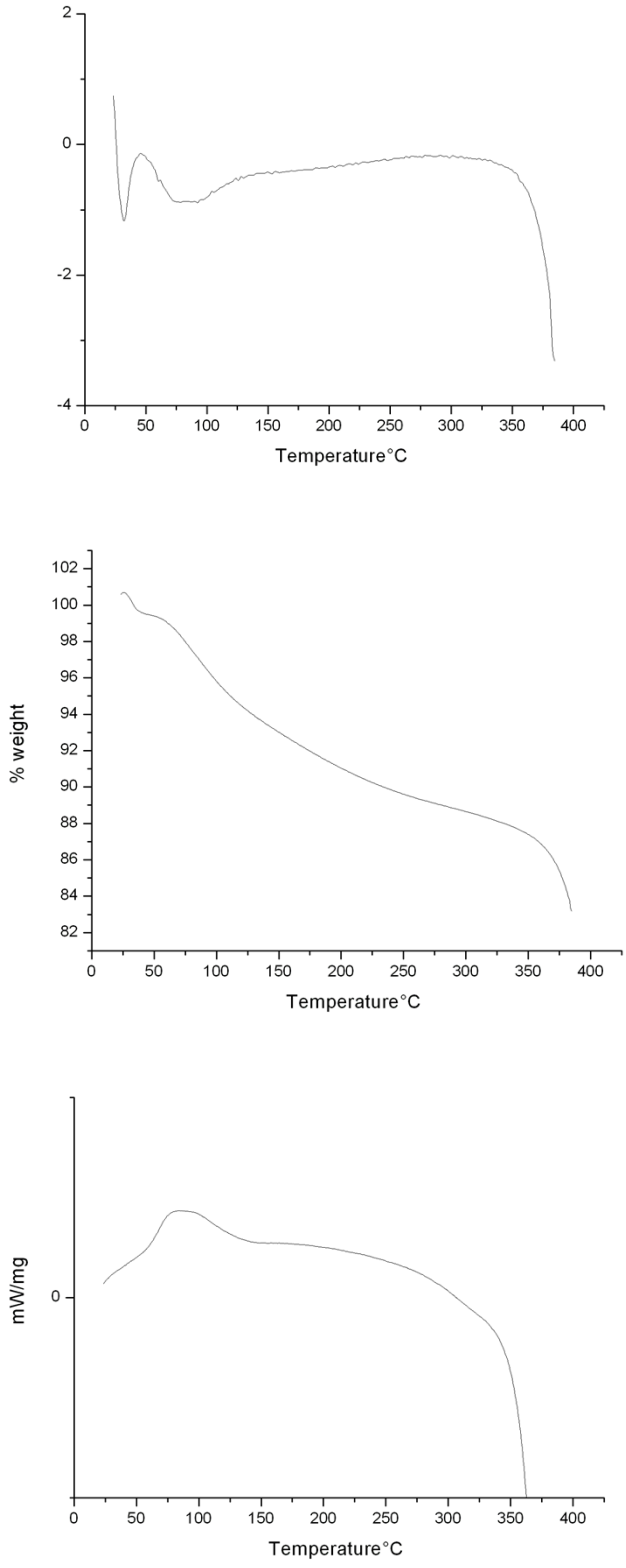


Figure S6. From bottom to the top: DSC analysis, TG analysis and DTG analysis of the photoproduct obtained after irradiation of compound **1** for 1 hour.

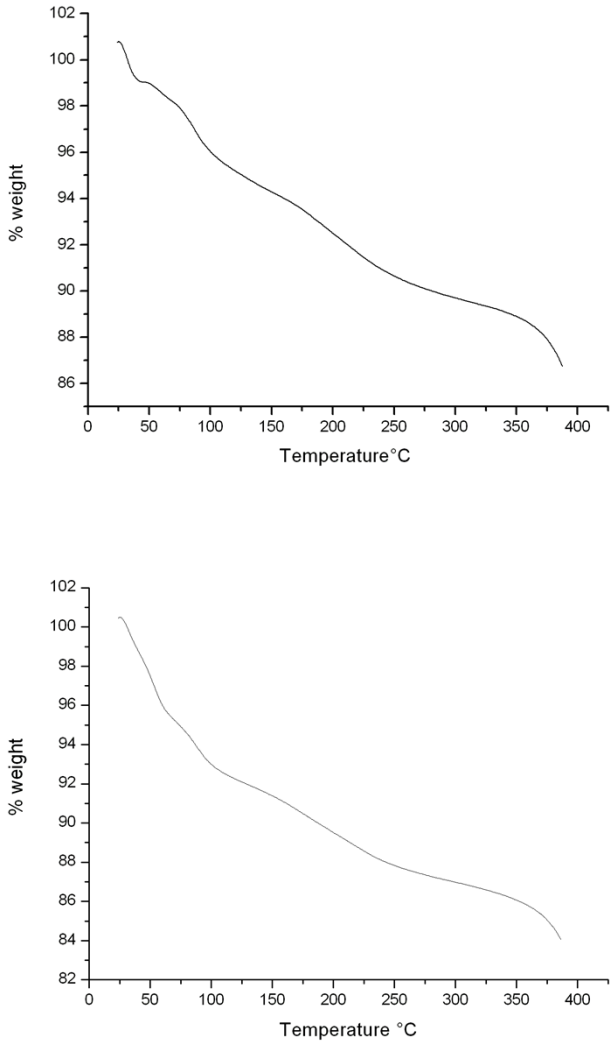


Figure S7.(a) TG analysis of hydrates **2** (top) and **2r** (bottom).

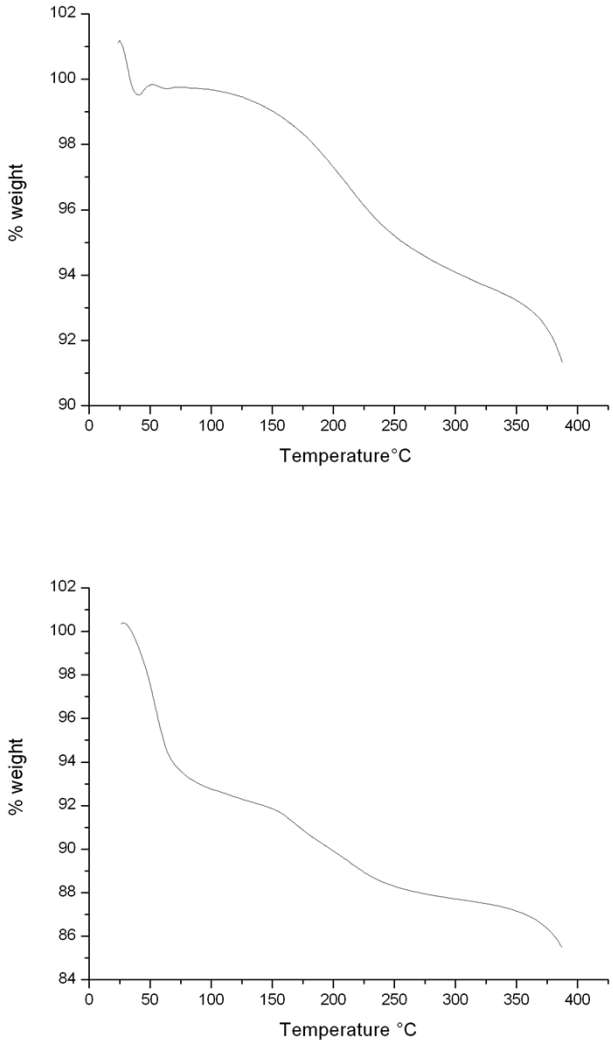


Figure S7. (b) TG analysis of hydrates **3** (top) and **3r** (bottom).

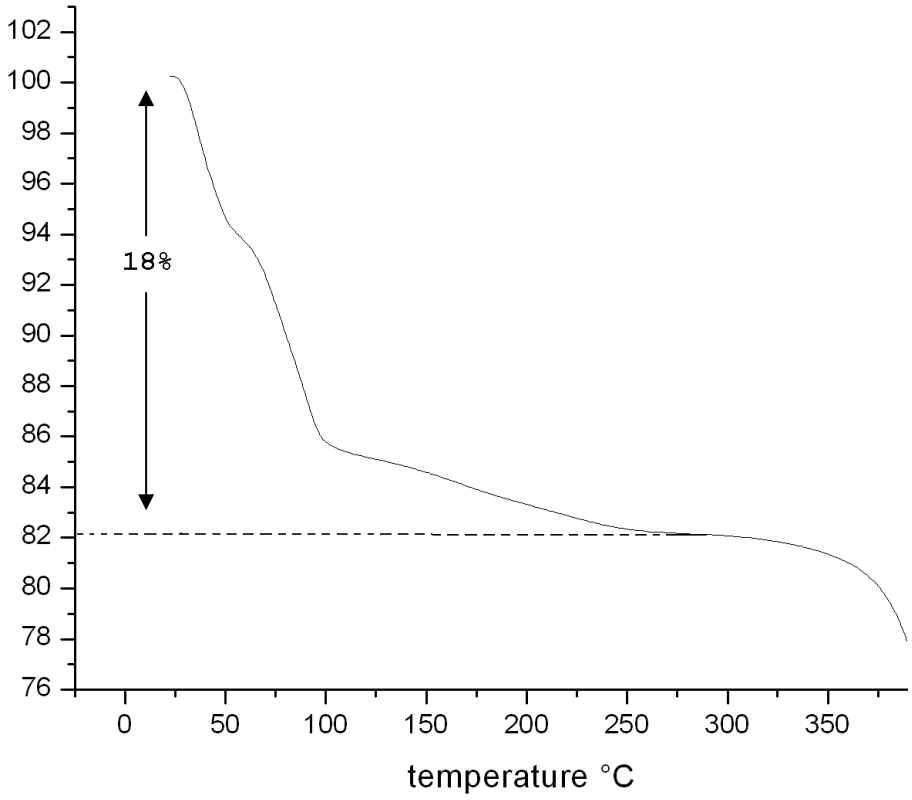
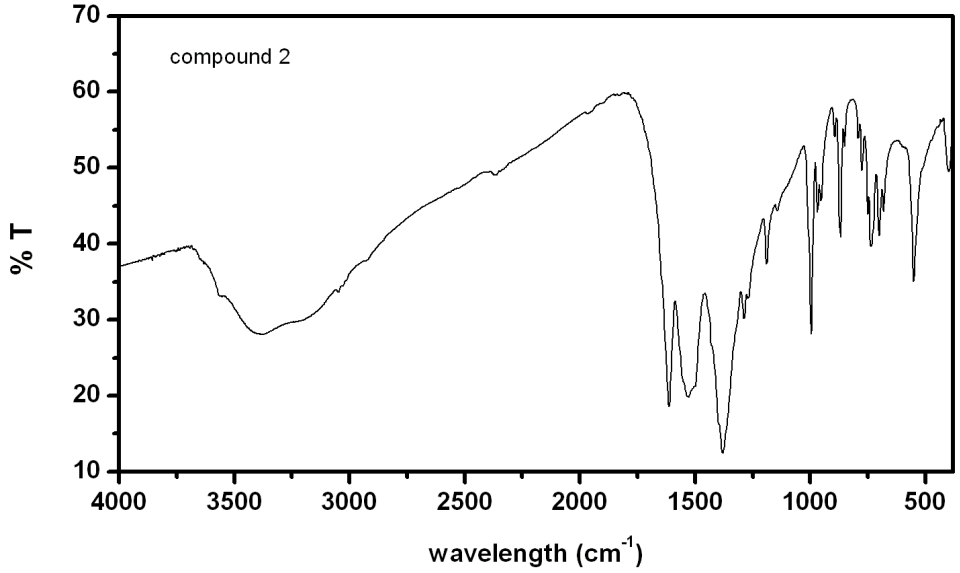


Figure S7.(c) TG analysis of hydrates **4.**



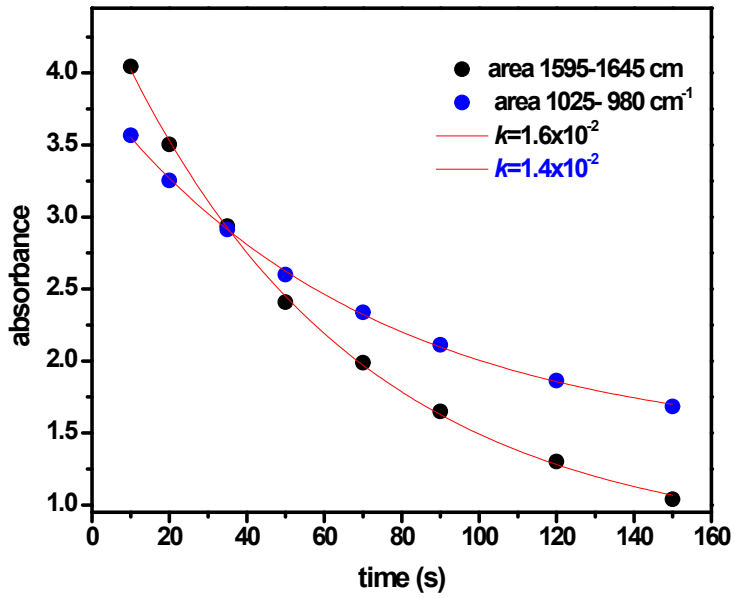
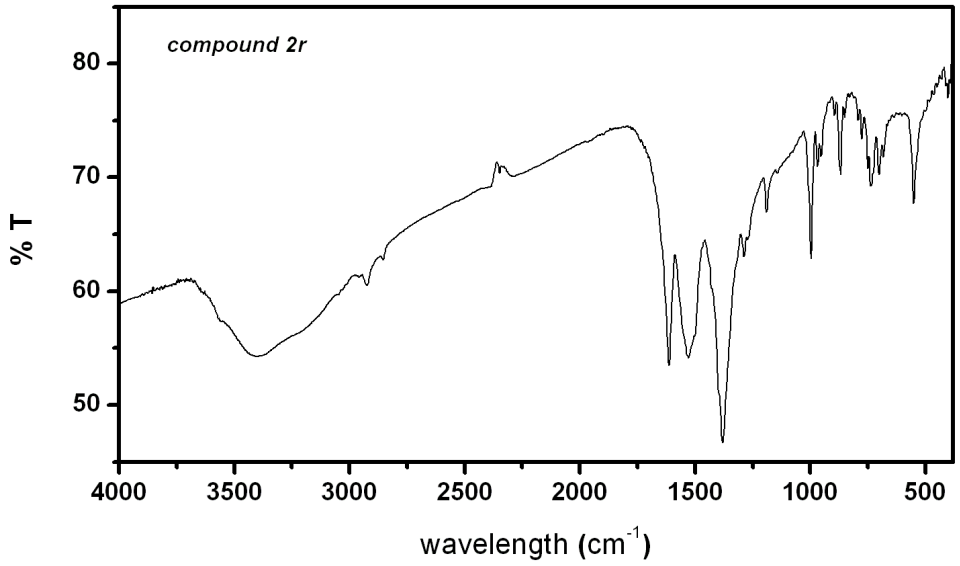


Figure S8 (a). Top: IR spectrum of compound **2**. Bottom: Absorbance in two spectral regions as a function of irradiation time with the corresponding calculated reaction constants for compound **2**.



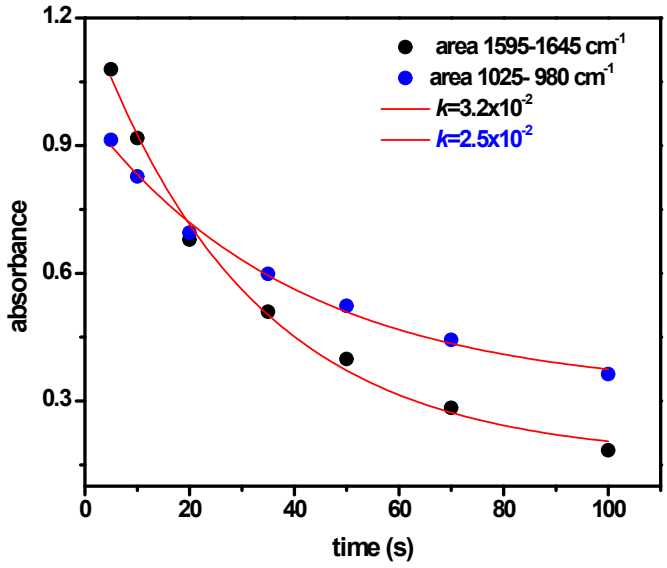
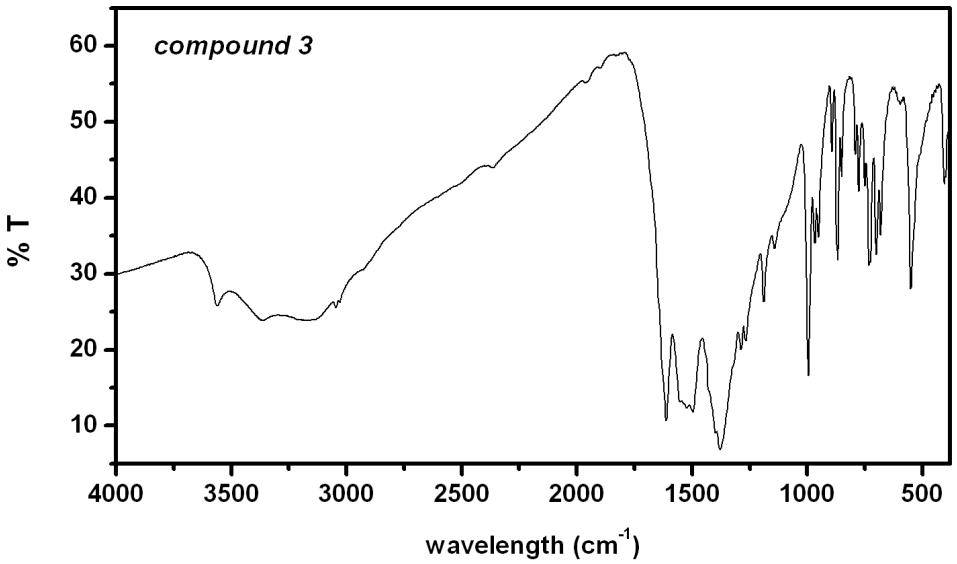


Figure S8(b). Top: IR spectrum of compound **2r.**. Bottom: Absorbance in two spectral regions as a function of irradiation time with the corresponding calculated reaction constants for compound **2r**.



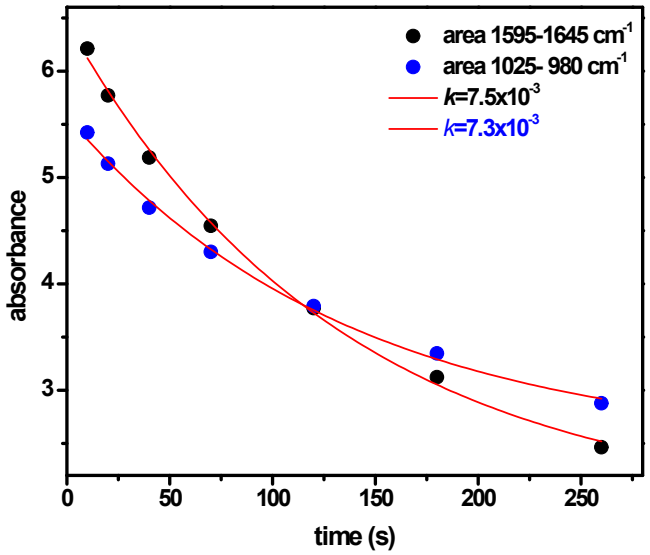
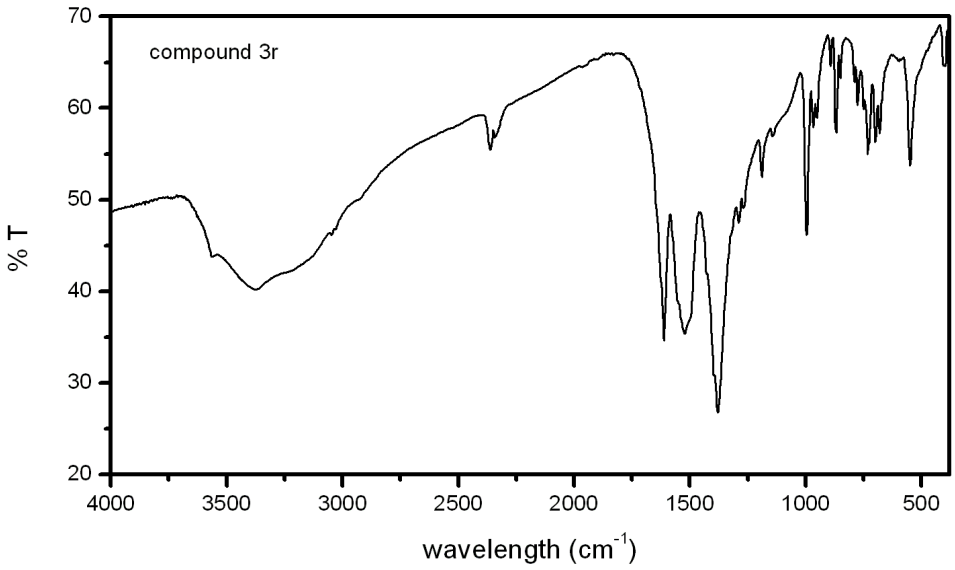


Figure S8(c). Top: IR spectrum of compound **3**. Bottom: Absorbance in two spectral regions as a function of irradiation time with the corresponding calculated reaction constants for compound **3**.



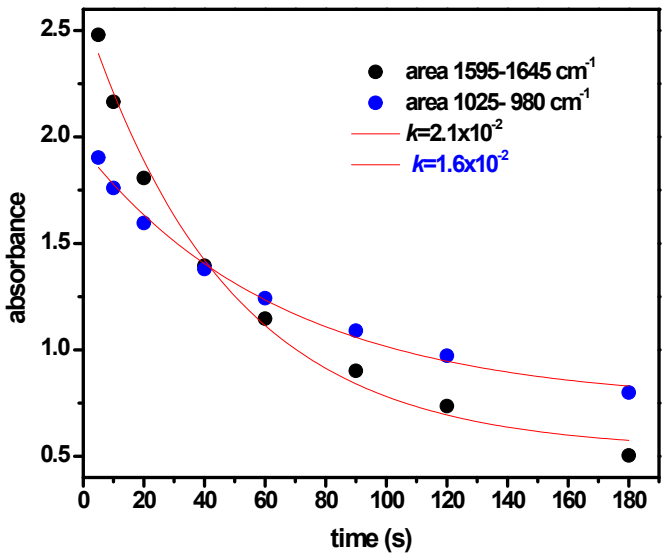
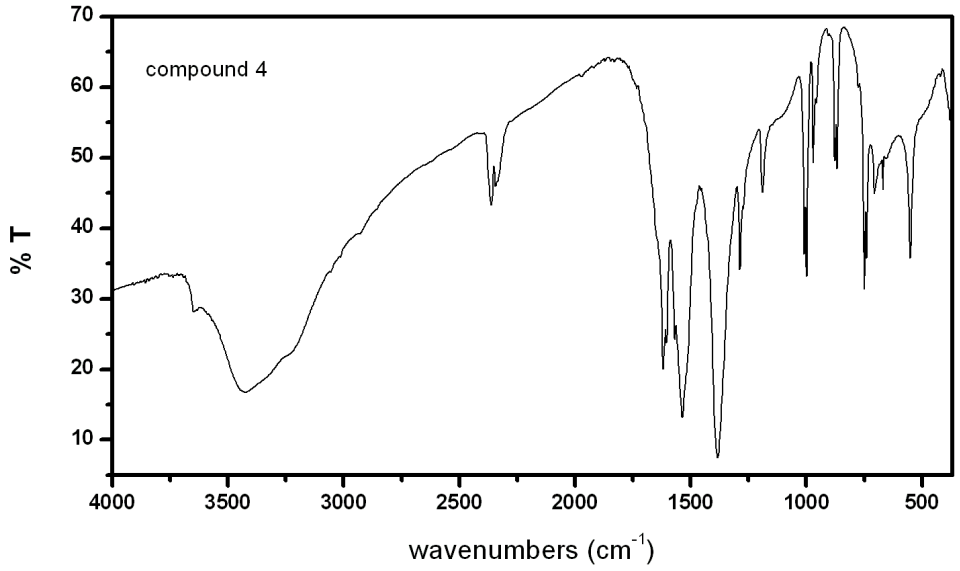


Figure S8(d). Top: IR spectrum of compound **3r**. Bottom: Absorbance in two spectral regions as a function of irradiation time with the corresponding calculated reaction constants for compound **3r**.



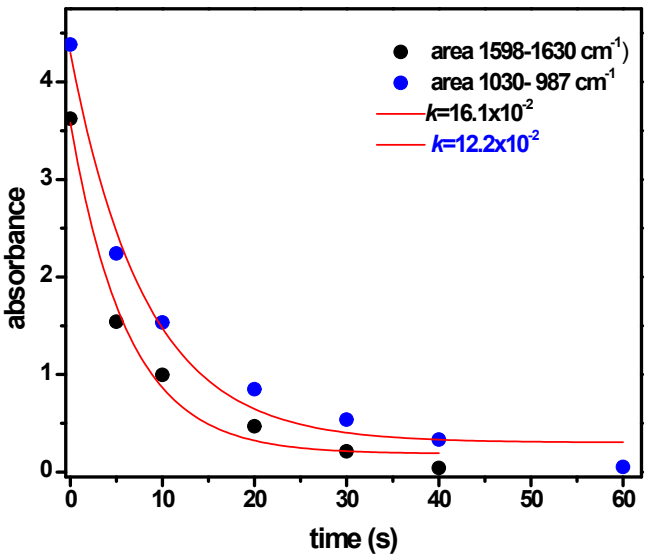


Figure S8(e). Top: IR spectrum of compound **4**. Bottom: Absorbance in two spectral regions as a function of irradiation time with the corresponding calculated reaction constants for compound **4**.

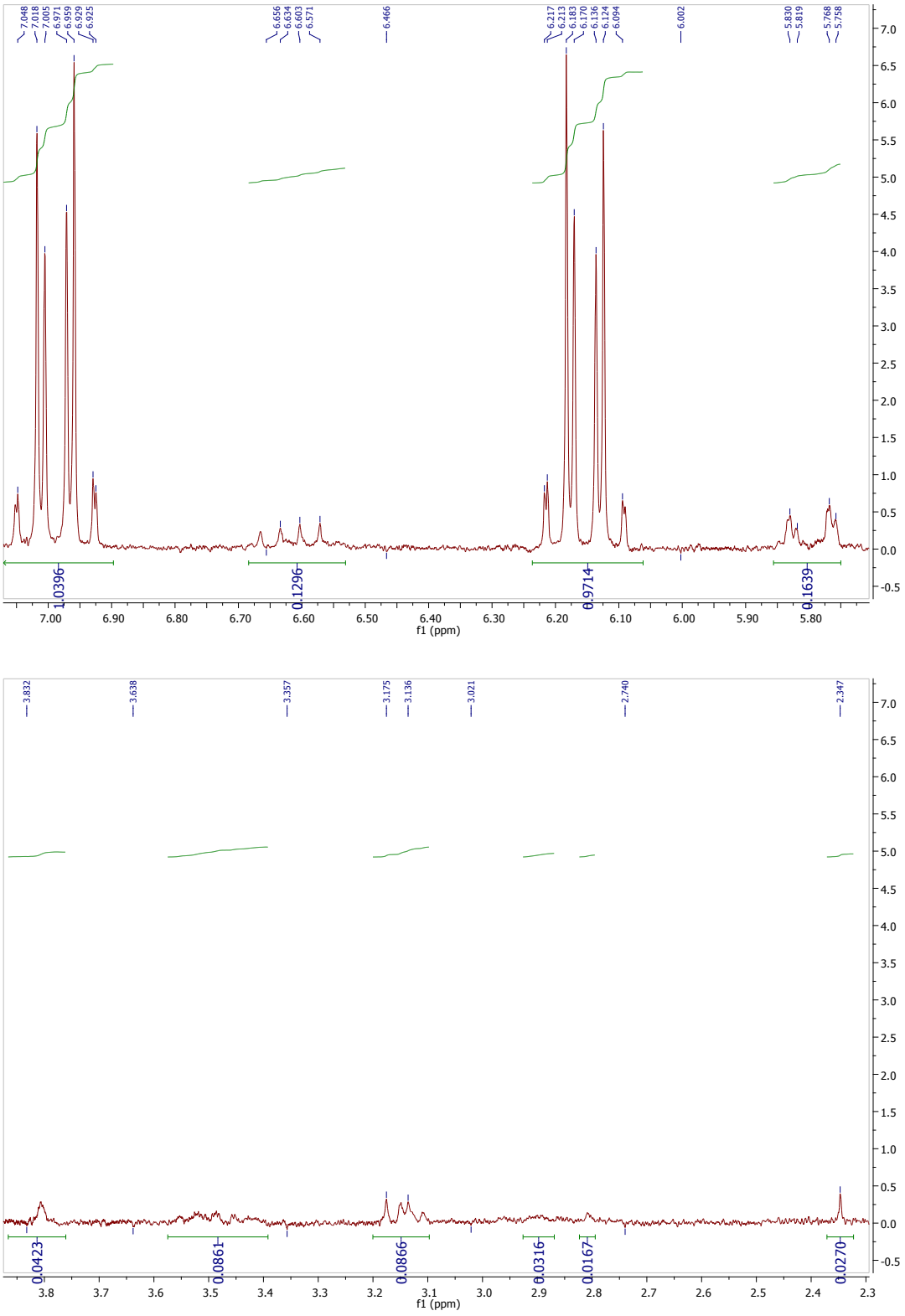


Figure S9. [1]H-NMR spectrum of the photoreaction products of **3r** (6 h of irradiation) in alkaline D_2O solution.