Photochemical [2+2] cycloaddition as a tool to study solid state structural transformation

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Supporting information

Fig: S1. The TGA of the crystals of complex 1 (--), irradiated crystals of 1 (---) and dehydrated crystals of 1 (----). The inset showing magnified picture at the point of water removal.
**Fig: S2.** The powder pattern of the crystals of complex 1, complex 1 after irradiation and complex 1 after dehydration
**Fig. S3.** The $^1$H NMR spectrum of the crystals of complex 1 after irradiation for 30 h which shows the mixture of unreacted complex 1 and the photodimerized product.

**Fig. 4.** The $^1$H NMR spectrum of the dehydrated crystals of complex 1 after irradiation for 30 h.
**Fig. 5.** The $^{113}$Cd solid state NMR spectra of complex 1 (A) and its dehydrated product (B)

**X-ray crystallography:** Both Cd(II) and O of aqua ligand are sitting on twofold symmetry. One H atom of water ligand was located. But DFIX option was used to constraint the position of this atom in the LS refinements. The 2 restraints mention in the CIF arise due to this.