

MS15-P14 | THE INFLUENCE OF [2+2] PHOTODIMERIZATION AND HIGH PRESSURE ON THE STRUCTURAL TRANSFORMATIONS IN CRYSTALS

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The [2+2] photodimerization in atmospheric pressure conditions has been widely studied by the crystallographic community. However, there are only few examples of experiments conducted at high pressure. Our research shows, on the example of crystals of seven compounds, how pressure influences the crystal structures and how it modifies the ongoing reaction. To induce the [2+2] photodimerization, UV radiation was used. The photoreaction was conducted in a step-by-step manner with the X-ray data collection after every irradiation. This allowed to obtain the structures of partly reacted crystals, *i.e.* the crystals containing both monomer and dimer molecules. The structural transformations and the influence of pressure on them and on the reaction rate were studied by means of monitoring (a) the unit cell parameters, (b) intermolecular geometry and (c) free space volume with the increase of product content. The results for all the compounds were compared with each other. The applied pressure not only modified the crystal lattice, but also restrained the structural changes caused by the photoreaction.