

Synchronised photoreversion of spirooxazine ring opening in thin crystals to uncover ultrafast dynamics

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Reversibility is an important issue that impedes ultrafast studies of photochemical reactions in the solid-state due to the accumulation of photoproducts. We will present an approach that makes use of spectrally-selected, postexcitation, ultrashort laser pulses to minimize photoproduct build-up (i.e., recover before destroy). Further, we will demonstrate that this method enabled us to probe the ultrafast dynamics of the ring opening reaction of spironaphthooxazine thin crystals (**1**; Fig. 1) by means of transient absorption spectroscopy. By extension, this approach should be amenable to other photochromic systems.

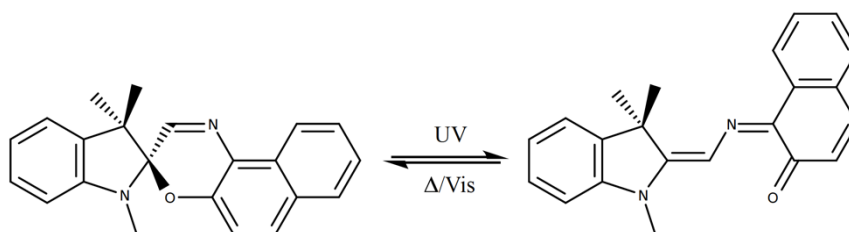


Figure 1. Structures of the photoisomers for **1**.