FEMTOSECOND DYNAMICS OF THE TWISTED INTRAMOLECULAR CHARGE TRANSFER STATE OF 4-(N,N-DIMETHYLAMINO)BENZONITRILE (DMABN) IN POLAR SOLUTION

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We studied the dynamics of the twisted intramolecular charge transfer (TICT) state of 4-(N,N-dimethylamino)benzonitrile (DMABN) in polar solvents by femtosecond transient absorption spectroscopy. The TICT state forms in tens of picoseconds in both methanol and propanol as determined by the absorption change at 400 nm. We have also observed transient absorption for the first time near 800 nm which we attribute to excited singlet absorption. The close agreement between the decay at 800 nm and the rise at 400 nm suggests that the initial singlet state is the TICT state precursor.