ULTRAFAST STUDIES OF PHOTOISOMERIZATION REACTIONS

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Photoisomerization reactions play an important role in biological processes and have potential use in molecular switches. We have recently shown that the photoisomerization reaction for 1,4-diphenyl-1,3-butadiene (DPB) occurs on a fast timescale (less than 50 ps). Further ultrafast studies on the photoisomerization reaction have been conducted on DPB to better understand the nature of the photoisomerization coordinate. Furthermore, the possibility of photoisomerization along a cross-conjugated molecule, 1,3-diphenyl-2,3-butadiene (cc-DPB) has been studied. The possibility of photoisomerization along a branched molecular chain is important for application in molecular switches.