



Donnerstag, 18.10.2018

Hörsaal C, Chemie Zentralbau, 17:15 Uhr

Sprecher: Nikolaus Ernsting

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Thema: New views through old holes:

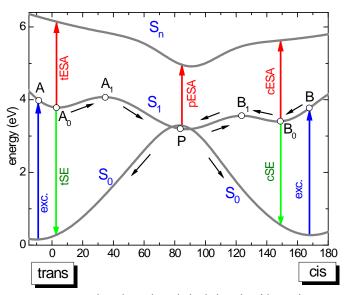
looking for the perpendicular

"phantom" state of

photoisomerizing stilbene

Abstract:

In the photoisomerization path of stilbene, a perpendicular state P on the S_1 potential energy surface is expected just before internal conversion through a conical intersection S_1/S_0 . The situation is depicted schematically below:



torsion about the ethylenic bond, ϑ (degree)

For decades the observation of P was impossible because of a short lifetime τ_P in combination with slow population flow over a barrier (A₁ or B₁ in the figure). But these limitations can be overcome by ethylenic substitution.

Comparing stilbene and 1,2-dimethyl-stilbene with precision transient absorption spectroscopy in the range 250-800 nm, we determine the electronic properties of P.

By substitutions – also at the phenyl moieties - the excited *trans*, *cis*, and *perpendicular* forms are stabilized on a >10 ps timescale. Their excited-state absorption bands (ESA in the figure) are used for resonance in fs stimulated Raman spectroscopy. In this way we find several new phenomena during the photoreaction.

Organisation: C. Lambert

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Informationen zur Forschergruppe unter: http://www.for1809.uni-wuerzburg.de