A HIGH RESOLUTION STUDY OF THE ELECTRONIC SPECTRA OF CONFORMERS OF 1,3 AND 1,4 DIVINYLBENZENE: UNEXPECTED EXCITED STATE BEHAVIOR[a]

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The vibrationally resolved $S_1 \leftarrow S_0$ electronic spectra of 1,3- and 1,4-divinylbenzene each exhibited two origin bands that are ~800 cm^{-1} and ~1000 cm^{-1} apart respectively. Intrigued by this observation, we have recorded the different bands at full rotational resolution in a molecular beam. Analyses of these data show that the two bands are the $S_1 \leftarrow S_0$ of the different conformers, *cis* and *trans*, in each molecule, which are remarkably far apart. Typically, such systems exhibit more closely spaced origin bands. A model that accounts for this unexpected behavior will be discussed.

[a]work supported by NSF.