4-HYDROXYPHENETHYL ALCOHOL. IDENTIFICATION OF THE TWO LOWEST ENERGY CONFORMERS VIA ROTATIONALY RESOLVED ELECTRONIC SPECTROSCOPY.[a]

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Rotationally resolved $S_1 \leftarrow S_0$ fluorescence excitation spectra of the two most intense bands in the electronic spectrum of 4-hydroxyphenethyl alcohol(HPEA) have been obtained. The two bands have been assigned to two different conformers of HPEA, based on small differences in their hybrid characters and rotational constants. Both conformers are folded, with the -OH group of the tail pointing towards the ring; they differ in the orientation of the -OH group attached to the aromatic ring. Surprisingly, the two conformers have substantially different energies in both electronic states, indicating that the interaction between the two substituents is not small. Possible reasons for this behavior will be discussed.

[a]Work supported by NSF.