

USING ELECTRONIC SPECTROSCOPY TO PROBE STERIC EFFECTS IN ROVIBRATIONAL ENERGY TRANSFER FROM  $S_1$  GLYOXAL

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The detection of dispersed fluorescence from rotational and vibrational states populated after single collisions of excited  $S_1$  glyoxal with another atom or molecule has proven to be a powerful technique for monitoring rovibrational energy transfer in crossed molecular beams. Additional information concerning the steric aspects of energy transfer can be obtained by creating collision geometries where the planar glyoxal molecule is predominately "broadside" or "edge-on" with respect to the collision partner. These collision geometries are achieved via the natural alignment of glyoxal resulting from  $S_1 - S_0$  excitation with a polarized pump laser. The degree of alignment attainable via direct excitation, as well as the steric dependence of the rovibrational energy transfer as deduced from dispersed fluorescence spectra, will be discussed.