VIBRATIONAL RELAXATION AND CONTROL OF SALICYLIDENE ANILINE

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We have shown that vibrational excitation prior to reaction can control the course of certain photoreactions in isolated molecules. We seek to extend vibrational control to the liquid phase. To this end, we have previously shown that the excited-state reaction dynamics of *trans*-stilbene are insensitive to vibrational excitation prior to electronic excitation. This insensitivity is likely due to poor coupling of the vibrational modes we excite to modes which correspond to the reaction coordinate, as well as rapid vibrational relaxation relative to the timescale of the reaction. In this work, we focus our attention on salicylidene aniline, a model system for excited-state intramolecular proton transfer (ESIPT) reactions. The proton transfer in salicylidene aniline occurs on the same timescale as vibrational relaxation in solution, suggesting that vibrational control may be viable. Here we present the results of experiments measuring the rate of vibrational relaxation in salicylidene aniline. We also present preliminary results of experiments exploring the influence of vibrational excitation on the ESIPT dynamics of salicylidene aniline.