

CHARACTERIZING THE STRUCTURE OF SUCCINIMIDE WITH BROADBAND ROTATIONAL SPECTROSCOPY

SIVANJALI ELENA WILLIAMS, *Department of Chemistry, Harvey Mudd College, Claremont, CA, USA*;
CHISOM ADAOBI DIM, *Department of Chemistry, University of California, Davis, Davis, CA, USA*;
CAROLINE SORRELLS, *Department of Chemistry, Harvey Mudd College, Claremont, CA, USA*; KYLE
N. CRABTREE, *Department of Chemistry, University of California, Davis, Davis, CA, USA*; A. O.
HERNANDEZ-CASTILLO, *Department of Chemistry, Harvey Mudd College, Claremont, CA, USA*.

Succinimide is a heterocyclic organic compound whose derivatives have anticonvulsant applications. We measured its molecular parameters using chirped-pulse Fourier transform microwave (CP-FTMW) spectroscopy in the 26-40 GHz frequency range, which is highly sensitive to the molecular structure. The spectrometer is equipped with a heated reservoir to increase the vapor pressure of solid samples, and is coupled to a supersonic expansion which results in rotational temperatures on the order of 1-5 K. The rotational spectra were analyzed with the help of state-of-the-art ab initio calculations. We have determined the rotational constants, inertial defect, and centrifugal distortion constants of succinimide. In this talk we will discuss our findings on the molecular structure and comparisons to structurally similar molecules.