

## **Abstract**

The purpose of this research was to determine geometric zones where vinyl acetate will change conformation, from one of low steric hindrance to one of higher steric hindrance. Gaussian was used to find these zones as well as determine features of the molecule, such as bond length. In the end, it was determined that three singlet curve crossings and two triplet curve crossings occurred between 16.318 kJ/mol and 641.896 kJ/mol over the ground state energy. This data will provide important information for photochemical reactions going forward.