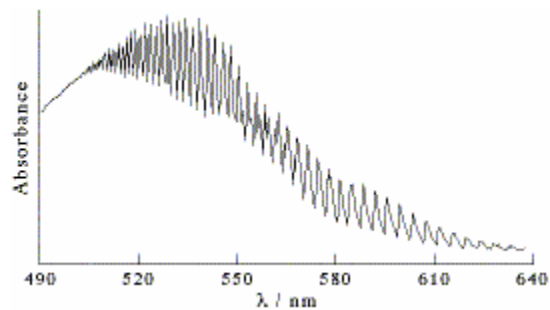


**LAB #4: SPECTRUM AND DISSOCIATION ENERGIES OF I<sub>2</sub>: Pre-lab Questions**

1. Using the information in the lab handout, assign the peaks to a transition between vibrational quantum numbers,  $v' \leftarrow v''$  for the transitions between ~530-600 nm in the following spectrum of I<sub>2</sub> (Fig 13.9 from McQuarrie & Simon).



2. Describe how you would use the information from #1 to create a Birge-Sponer plot.

3. Describe in words the parameters:  $\tilde{T}_e'$ ,  $\tilde{x}_e''\tilde{v}_e''$ ,  $\tilde{D}_e'$ , and  $E^*$ .