Peter B. Armentrout
University of Utah
CHE-0135517

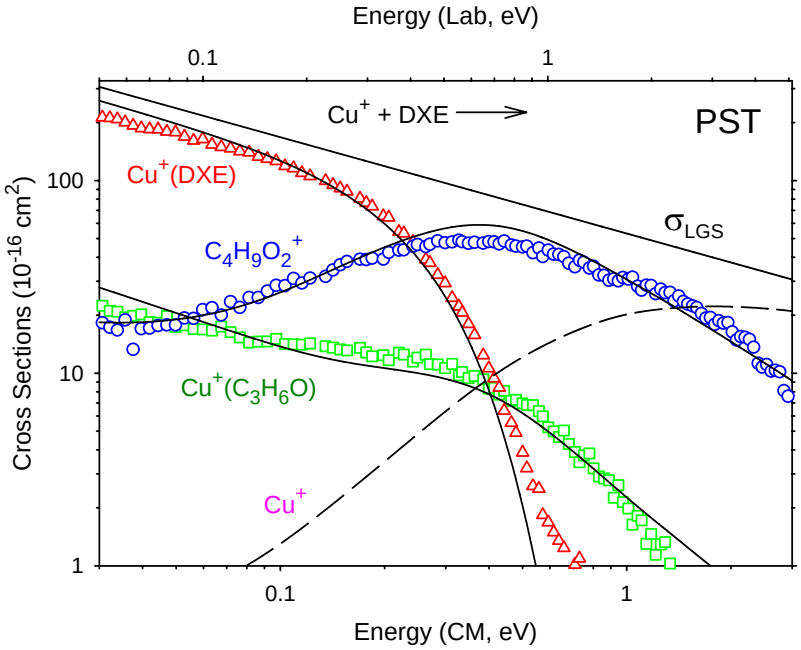
As molecules get more larger and larger, the ability to measure details of their physical nature becomes harder and harder. Scientists at the University of Utah have recently devised a new procedure for extracting energetic information that promises to be particularly valuable for large molecules.

The method relies on the fact that large molecules have lots of places to put energy, so creation of a new molecule in the gas phase by association leads to a long-lived species. By modeling the lifetime of that species at different total energies, the bond energy can be measured.

(Koizumi, H.; Muntean, F.; Armentrout, P. B. *J. Chem. Phys.* **2004**, *120*, 756-766.)

Association Reactions

$Cu^+ + DXE \rightarrow Cu^+(DXE)$



The plot shows models for the association reaction (red) and two competing reactions (blue and green) in the reaction of Cu^+ with dimethoxyethane (DXE).