PHOTOIONIZATION AND PHOTOFRAGMENTATION OF LASER DESORBED POLLUTANTS AND BIOMOLECULES.

D. ROLLAND, G. GUEVARA, J. W. HEPBURN, *Department of Chemistry, University of British Columbia, 2036 main mall, Vancouver B.C., V6T 1Z1, CANADA. drolland@chem.ubc.ca,cguevara@physics.ubc.ca,hepburn@chem.ubc.ca*.

We present the data obtained on photoionization and photofragmentation of non-volatile molecules in a molecular beam conditions. Our apparatus is made of a laser desorption source coupled to a supersonic jet that is probed by tunable visible-UV laser ionization into a time-of-flight mass spectrometer. A third tunable laser is used to perform photofragmentation of the ionic species. The cooling effect of the supersonic jet allows for stability of labile molecules such a polypeptides or pharmaceutical drugs such as spiperone, as well as permitting high resolution spectroscopy of such species. Internal temperature effects on ionization or dissociation dynamics can be compared to similar experiments performed in an ion trap (where ions are thermalized 300k), and structure information and isomerization can be deduced from those spectra.