LASER SPECTROSCOPY OF TRAPPED IONS: A TOOL FOR MASS SPECTROMETRY.

D. ROLLAND, A.A. SPECHT, M.W. BLADES, J.W. HEPBURN, *Department of Chemistry, University of British Columbia, 2036 main mall, Vancouver B.C., V6T 1Z1, CANADA. drolland@chem.ubc.ca,specht@chem.ubc.ca, blades@chem.ubc.ca, hepburn@chem.ubc.ca*.

We report the study of the visible absorption spectroscopy of non-volatile cations trapped in the gas phase in a RF Paul trap. Absorption spectra of individual polycyclic aromatic hydrocarbons (PAHs), fullerene C_{60} or other drug/biological cations are recorded by monitoring the photofragmentation process through resonance enhanced multiphoton dissociation (REMPD). The combination of the versatility of the ion trap as a mass spectrometry and mass selection technique and the molecular conformation selectivity of laser spectroscopy make the apparatus a powerful tool for direct sampling analysis. It also provides access to information on the process and dynamics of the photo-induced fragmentation.