# CU-Boulder CHEM-5181

**Problem 5.1- Electrospray Ionization Charge States.**

Below are two expanded views of an electrospray mass spectrum of an unknown biomolecule collected with the Orbitrap high-resolution mass spectrometer in the CU-Boulder Mass Spectrometry Facility. The first spectrum shows a charge envelope between *m/z* 650 and 1150.

**(a)** Using knowledge of the *m/z* values for the peaks of the envelope, assign charge states to all peaks having relative abundance > 15 and determine the mass of unknown compound (Da).



**(d)** Using data from the second mass spectrum, which is an expanded view of the region between *m/z* 737.2 and 738.8, re-calculate the charge of the peak at *m/z* 738.02307.

