PROGRESS TOWARD INNOVATIONS IN CRYOGENIC ION CLUSTER SPECTROMETERS

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Cryogenic Ion Vibrational Spectroscopy (CIVS) is a useful technique that yields rich information about non-covalent interactions in various systems including catalytic complexes, small biologically relevant molecules, and solvent networks. Current instrumentation demands high production costs and large laboratory facilities. We have designed an affordable and compact instrument that is capable of current CIVS experiments. This setup utilizes an ion funnel and a Linear Trap Quadrupole (LTQ) which improves the ion density and allows for spectroscopic interrogation directly in the trap. Preliminary results and future innovations will be discussed.