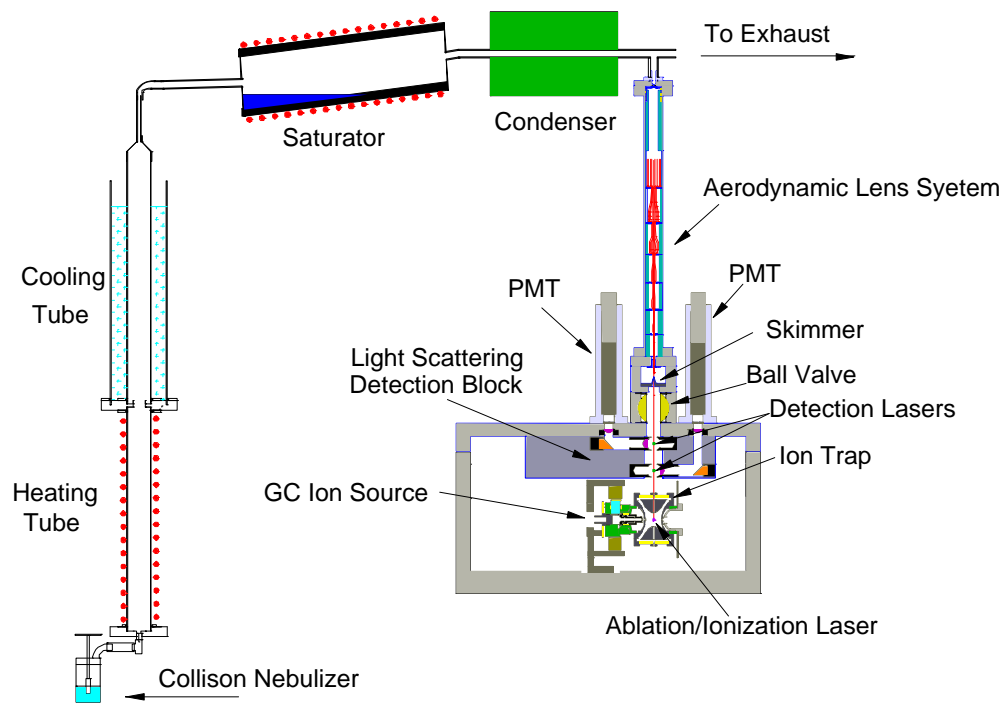


Quantitative Aerosol MALDI Mass Spectrometry

We have adapted our ion trap-based particle mass spectrometer for on-line MALDI analysis. Analyte containing particles are passed through a heated chamber that contains a MALDI matrix compound. When the particles pass through the heated chamber and then into a cooled chamber the matrix rapidly forms a super saturation and condenses on the analyte particle. The MALDI matrix coated particles are then sampled into the inlet, collimated, sized and then laser ionized when they reach the center of the ion trap. The nascent ions are then trapped and mass analyzed.

Our research involves the development of new trapping techniques to extend the mass range that can be accessed by the aerosol MALDI technique.



A digital ion trap will be used to extend the accessible mass range. Eventually, we hope to couple this mass analysis technique to high pressure liquid chromatography to continuously monitor its output. Other applications include counting and identifying airborne bacteria.