

Achievable Resolution and Efficiency of Tandem Mass Spectrometry for Sub-mm Ion Traps

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Currently, as mass spectrometer approach hand-portability, separation front-ends are typically left off, due to the high gas loads placed on the device. With stand alone mass spectrometry, small mechanical and chemical pumps can be employed to reduce size, power need, and ruggedize. This leads to customizable front-end sample inlet systems, designed for selectivity within a controlled chemical environment-coupled directly to the mass analyzer. Tandem mass spectrometry becomes a necessity to greatly reduce false positives, and aid in correct determination of the constituents. Both theoretical and experimental data on the efficiency of MS/MS on sub-mm ion traps will be presented. The work will focus on the isolation resolution, intensity of fragment ions, and peak resolution.