

$$\left(\frac{r_3}{r_1}\right)^2$$

wherein

r_3 is the smallest mass-to-charge ratio to be detected,
and

r_1 is the largest mass-to-charge ratio to be detected.

17. A time-of-flight mass spectrometer comprising an ion source for generating ions which move along a path,

an ion storage device and means for detecting ions which exit the ion storage device, wherein the ion storage device comprises field generating means for subjecting ions to an electrostatic retarding field during an initial part only of a preset time interval, the electrostatic retarding field having a spatial variation such that ions which have the same mass-to-charge ratio and enter the ion storage device during said initial part of the pre-set time interval are all brought to a time focus during the remaining part of that time interval.

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