Purpose: measuring masses of ions.

- Charged particle is accelerated by moving through potential difference $|\Delta V|$.

- Trajectory is then bent into semicircle of radius r by magnetic field $\vec{B}$.

- Kinetic energy: $\dfrac{1}{2}mv^2 = q|\Delta V|$.

- Radius of trajectory: $r = \dfrac{mv}{qB}$.

- Charge: $q = e$

- Mass: $m = \dfrac{eB^2 r^2}{2|\Delta V|}$.