

Velocity selector-mass spectrometer

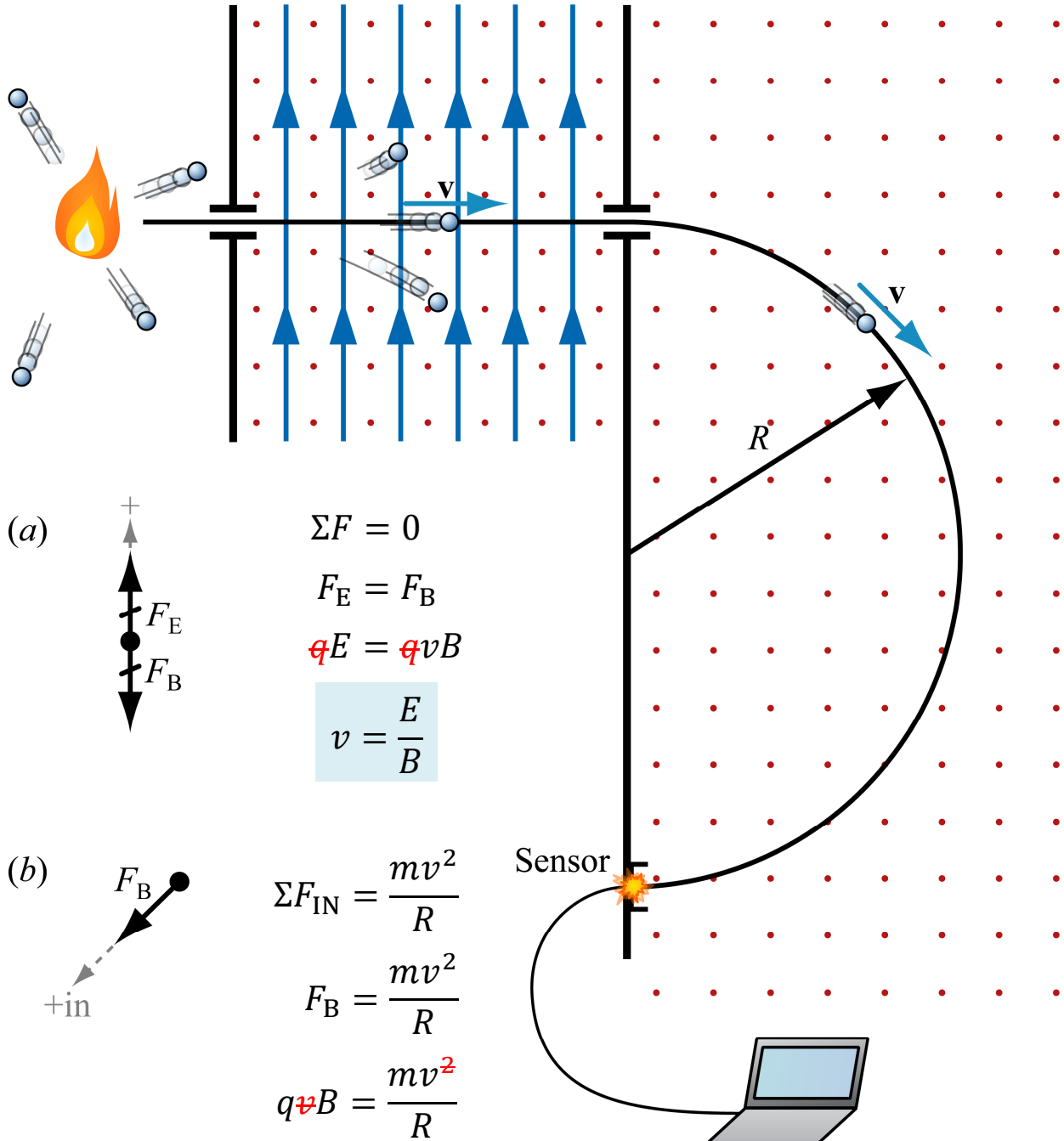
Ion source

(a) Velocity selector

(b) Mass spectrometer

B (out), **E** (up)

B (out), no **E**



(a)



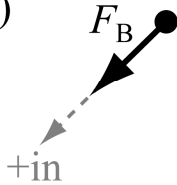
$$\Sigma F = 0$$

$$F_E = F_B$$

$$qE = qvB$$

$$v = \frac{E}{B}$$

(b)



$$\Sigma F_{IN} = \frac{mv^2}{R}$$

$$F_B = \frac{mv^2}{R}$$

$$qvB = \frac{mv^2}{R}$$

$$\frac{q}{m} = \frac{E}{B^2 R}$$