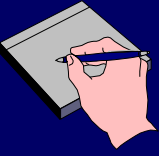# Rutherford Scattering

Scattering He^{++} atoms off of gold. Mostly go through, some scattered back!

Plum pudding theory:
+ and – charges uniformly distributed → electric field felt by alpha never gets too large

To scatter at large angles, need positive charge concentrated in small region (the nucleus)

Atom is mostly empty space with a small (r = 10^{-15} m) positively charged nucleus surrounded by cloud of electrons (r = 10^{-10} m)

The Rutherford gold foil experiment used an alpha particle gun.

(Alpha particles = He^{++})