

Chapter 4

STRUCTURE OF ATOM

α -ray scattering experiment:

α -ray scattering experiment led to the discovery of Rutherford's atomic model.

Fast moving α - particles were made to strike on gold foil. The rays emerged after striking gold foil are captured on fluorescent screen. It was expected that most of the α - were expected to bounce back due to repulsion.

But the observations are,

- i) Most of the α - particles passed in straight lines without any deviation.
- ii) Few particles deviated in small or large angles.
- iii) Very very few (1 in 20,000) particles bounced back.

From this we can understand that, positive charge is not occupying the whole space of Thomson proposed.

Conclusion:

- Positively charged part (protons) occupying a very small space in atom.
- Electrons are occupying large space compared to protons.