Notes Page

Jaimie, Felix, Vincent, Adam

Born August 30th 1871 Nelson New Zealand

Died October 19 1937 Cambridge

He discovered that there is a concentrated positive charged in the middle of atom.

His thesis was entitled magnetization of iron by high frequency discharges. Alpha particles

Discovered that most of an atom’s mass is located in the nucleus

Invented a detector for electro-magnetic wave.

Worked with someone else on the behaviour of ions in gases

The atom’s electron doesn’t affect the alpha particle

Collaborated with Frederick Soddy on creating disintegration theory: A theory of radioactivity which regards radioactive phenomena as atomic-not molecular processes

There were large amount of experimental evidence

Bohr and Rutherford worked together in 1912, and Bohr adapted Rutherford’s nuclear structure to Max Planck’s quantum theory

Together with HG Moseley he used cathode rays to bombard atoms of various elements and showed that the inner structures correspond with a group of lines which characterize the elements.

In 1919 he became the first person to transmute one element to another for example Nitrogen to Hydrogen through nuclear reaction involving the shooting of Alpha particle

14 7 N -> 4 2He + 4 2He + 4 2He + 2 1 H

Each element can assigned into an atomic number

Discovered Alpha and Beta ray

Alpha ray = Helium Nuclei

When alpha particles are fired into gas atoms, a few are violently deflected, which means that there is a dense, positively charged central region, aka the nucleus, containing most of the mass

Questions

1. How did he discover the nucleus?
2. What is an alpha particle?
3. What country was he born in?
4. What element did he turn into hydrogen through nuclear reaction?
5. What did kind of waves did the detector he made identify?

References:

[www.nobelprize.org](http://www.nobelprize.org)

[www.chemheritage.org](http://www.chemheritage.org)

[www.rutherford.org.nz](http://www.rutherford.org.nz)