J. J. Thomson

preview page
He discovered electrons by placing a positive source near a Cathode Ray Tube

sale.co.uk

• The particles were attracted towards it.

• Then he placed a negative source near the Cathode Ray Tube

The particles were repelled away from it.

• From his experiments he was able to find the mass of an electron:

9.109 x 10^{-31} kg, or almost had no mass at all.



Quantum Model (1926-uk) It is the current Model of Matters3 Proposed School Scho

- States that the Atom contains a small, dense positively charged Nucleus that contains both Protons and Neutrons.
- Electrons exist in a cloud surrounding the Nucleus and do not follow a specific orbit or path but randomly move in energy shells (orbitals).

- ACCINIC IVIASS Unit otesale.co.uk
 The proton and portion were 33 covered many years before evaluated the technology to accurately determine the mass of the particles.
 - They knew through experimentation that protons and neutrons had approximately the same mass and were significantly bigger than the electron's mass.
 - Therefore all mass came from the protons and neutrons. • The mass they assigned to them was one amu

Bohr Models • Although the Robinodel is 183 perfect, it is a useful way for us to victure attens and their fundamental particles. • To draw Bohr diagrams follow these guidelines: • Remember that this is a planetary model. In the center is a nucleus, which is made up of protons and neutrons. Electrons are outside the nucleus in different orbits, or shells.

- The first shell capitely a maximum 2 electrons and must be filled theore angelectrons are placed in an other shell.
 The second shell can hold a maximum of 8 electrons and must be filled before any electrons are placed in any other shell
- The third shell can hold 8 electrons and must be filled before any electrons are placed in any other shell.
 (After this shell the Bohr model breaks down and becomes too complex for grade 9)

Bohr Atom Example.co.uk • Aluminum preview from Notesale.co.uk 44 of 83



about 15% of theorements ale co.uk
Theorements 83
Have no hust

Are brittle Are non-conductors (except carbon/graphite) • Are solid or gas at room temperature (except Bromine).

- Also known as Som-metals 83
 Aboute % of the attended 55
 Have properties
 - Have properties of both metals and non-metals

• They are:

- Solid at room temperature
 - Semiconductors

• Similar to non-metals in most properties but some have lustre.

- Halogens Halogens all havome electrcs3nissing from their shells. Halogen are vorage od at stealing electrons and therefore they are highly reactive.
- Fluorine is the most reactive element because it is small and therefore has a high electrostatic attraction.
- As the atoms become larger they become less reactive. • They are so reactive alone, they always form diatomic molecules

Ex. F_2 , Cl_2 , Br_2 , I_2

Particle Theory of Matter Review All matter is mademp of extremely tiny particles. Theorem spaces are ween particles

- Each substance has its own kind of particle
- Particles attract each other
- Particles are always moving
- At higher temperatures, particles move faster.

• How many of each Notesale.co.uk compressient present in each page 73 of 33 ent are present in each

• Al_2O_3

• NH₄OH



• $Cu_3(PO_3)_2$