All the objects around you, this book, your pen or pencil and things of nature such as rocks, water and plant constitute the matter of the universe. Matter is any substance which occupies space and has mass.

Dalton, in 1808, proposed that matter was made up of extremely small, indivisible particles called atoms. (In Greek atom means which cannot be cut). This concept was accepted for number of years.

The main postulates of Dalton's atomic theory are

Matter is made up of small indivisible particles, called atoms.

Atoms can neither be created nor destroyed. This means that a chemical reaction is just a simple rearrangement of atoms and the same number of atoms must be present before and after the reaction.

Atom is the smallest particle of an element which takes part in a chemical reaction.

Atoms of the same element are identical in all respects especially, size, shape and mass.

Atoms of different elements have different mass, shape and size.

Atoms of different elements combine in a fixed ratio of small whole numbers to form compound atoms, called molecules.

However, the researches done by various eminent scientists and the discovery of radioactivity have established beyond doubt, that atom is not the smallest indivisible particle but had a complex structure of its own and was made up of still smaller particles like electrons, protons, neutrons etc. At present about 35 different subatomic particles are known but the three particles namely electron, proton and neutron are regarded as the fundamental particles.

We shall now take up the brief study of these fundamental particles. The existence of electrons in atoms was first suggested, by J.J. Thomson, as a result of experimental work on the conduction of electricity through gases at low pressures and high voltage, which produces cathode rays consisting of negatively charged particles, named as electrons. The e/m ratio for cathode rays is fixed whose values is 1.76 × 108 C/g

We know that an atom is electrically neutral, if it contains negatively charged electrons it must also contain some positively charged particles. This was confirmed by Goldstein in his discharge tube experiment with perforated cathode. On passing high voltage between the electrodes of a discharge tube it was found that some rays were coming from the side of the anode which passed through the holes in the