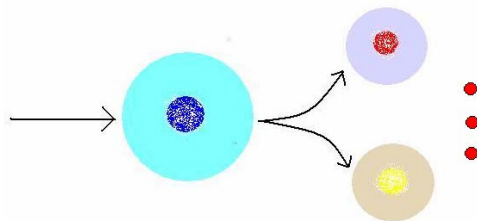


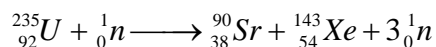
Nuclear Fission

Nuclear fission is the process of splitting a heavy nucleus into smaller nuclei and one or more neutrons.

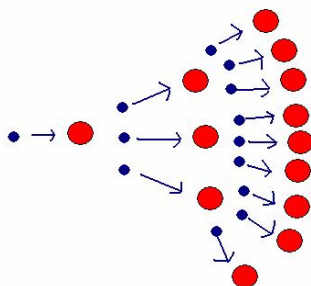


This process releases **tremendous amount of energy** due the fact that heavy nucleus is less stable than the products.

The nuclear fission reaction that was first investigated was the bombardment of neutron with uranium-235. This fission is very complex, but it can be represented in the following simple form:



The great significance of this reaction is not only the liberation of large amount of energy but also sustaining the chain reaction. That means, the three neutrons produced in the first step can further split three more uranium-235 nuclei to produce nine neutrons, and so on.



Remember, in each step a huge amount of energy is released. This is the basis for building an **atomic bomb**.

However, under controlled conditions, this released tremendous amount of energy can be harnessed to utilize for peaceful purpose and to solve our energy needs. Here where the **nuclear reactors** come into play. There are mainly three kinds of nuclear reactors:

- Light water reactors
- Heavy water reactors
- Breeder reactors

The energy obtained from nuclear reactors is much cheaper than the energy obtained from conventional means. But, there is one problem with nuclear reactors; they produce nuclear waste that is also radioactive. Unless we solve the problem of disposing off the nuclear waste, we should really think twice before we craze about the nuclear energy.
