

History: Neil Bohr

- Neil Bohr (1885- 1962) Danish physicist who's achievements has had a profound impact in the scientific community, revolutionizing the way we understand science
- Bohr's work helped to solve problems that classical physics could not explain about the nuclear model of the atom
- Bohr passed on to the study of the structure of the atom on the basis of Rutherford's discovery of the atomic nucleus, which lead to Bohr's highly recognized **Bohr Model of the Atom**.

The Bohr Model(1912):

- ∪Within the atom exist a positive nucleus
 - ∪Electrons orbit the nucleus in circles, but the nucleus doesn't move
 - ∪Electrons can only occupy discrete orbits known as quantization
 - ∪Energy changes in terms of jumps done by the electrons
 - ∪Electrons traveling from a high energy state to a lower leads to the emission of photons (packets of light)
 - ∪Electrons traveling from a low energy state to a high leads to the absorption of photons
- In 1922 Bohr was awarded a Nobel Prize in physics for his discovery, just at a age of 37.
 - Although Bohr's model of the atom is one of his most well known work, he did not stop there in terms of research, putting forth:
 1. The liquid drop theory- a liquid drop becomes a very good picture of the nucleus. Permitting an understanding behind the mechanism of nuclear fission and chain reactions.
 2. The concept of Complementarity- things may have a dual nature, but we only experience one outlook at a time. Eg. How electrons are both particles and waves
 - An institute of theoretical physics was created at Copenhagen University, which he directed until his final days.
 - One of Bohr's most famous students was Werner Heisenberg (Heisenberg's Uncertainty)
 - Bohr was well known by Albert Einstein, both partaking in friendly debates about Quantum Theory.
 - The chemical element Bohrium, in the periodic table(symbol Bh, atomic # 107) was first produced in 1976