

Answer on Question #43207-Physics-Atomic Physics

Define atom and write its component?

Answer

An atom is the defining structure of an element, which cannot be broken by any chemical means. A typical atom consists of a nucleus of protons and neutrons with electrons orbiting this nucleus.

How Rutherford and Bohr model helps us to get atomic structure?

Answer

Rutherford and Bohr pictured the arrangement of the atom's parts to look like our solar system. At the center of every atom is a nucleus, which is comparable to the sun in our solar system. Electrons move around the nucleus in "orbits" similar to the way planets move around the sun.

Each orbit around the nucleus represents an energy level, and electrons cannot exist in between orbits. Orbit closer to the nucleus have lower energy. If energy is added, an electron can be "excited" to jump to a higher energy level and orbit farther from the nucleus. Eventually, though, the electron will return to its original state, and the atom will give off energy equal to the difference between the two orbits.

Each orbit can hold only a certain number of electrons. The lower-energy orbits must fill up first, if the atom is to be at its "ground" state. This is the lowest energy state and therefore most stable state.

Input quantum number in sequence?

Answer

The **principal** quantum number n , the **subsidiary** or **azimuthal** or **angular momentum** or **orbital shape** quantum number l , the **magnetic** quantum number m_l , the **electron spin** quantum number m_s .