



ORIGIN OF MAGNETIC MOMENT AND BOHR MAGNETON

Origin of magnetic moment

Any matter is basically made up of atoms. The property of magnetism exhibited by certain materials with the magnetic property of its constituent atoms. We know that electrons in an atom revolve around the nucleus in different orbits.

Basically, there are three contributions for the magnetic dipole moment of an atom.

- The orbital motion of electrons (the motion of electrons in the closed orbits around the nucleus) are called orbital magnetic moment.
- Spin motion of the electrons (due to electron spin angular momentum) is called spin magnetic moment.
- The contribution from the nuclear spin (due to nuclear spin angular momentum) is nearly 10^3 times smaller than that of electron spin; it is not taken into consideration.

Bohr Magneton

The magnetic moment contributed by an electron with angular momentum quantum number $n=1$ is known as Bohr Magneton.