ORIGIN OF MAGNETIC MOMENT AND BOHRMAGNETON

Origin of magnetic moment

Any matter is basically made up of atoms. The property of magnetism exhibited by certain materialswiththemagneticpropertyofitsconstituentatoms.Weknowthatelectronsinan atom revolve around the nucleus in different orbits.

Basically,therearethreecontributionsforthemagneticdipolemomentofanatom.

- Theorbitalmotionsofelectrons(themotionofelectronsintheclosedorbitsaroundthe nucleus) are called orbital magnetic moment.
- Spinmotionoftheelectrons(duetoelectronspinangularmomentum)iscalledspin magnetic moment.
- Thecontributionfromthenuclearspin(duetonuclearspinangularmomentum)isnearly 10 3times smaller than that of electron spin; it is not taken into consideration.

Bohr Magneton

Themagneticmomentcontributedbyanelectronwithangularmomentumquantumnumbern=1 is known as Bohr Magneton.