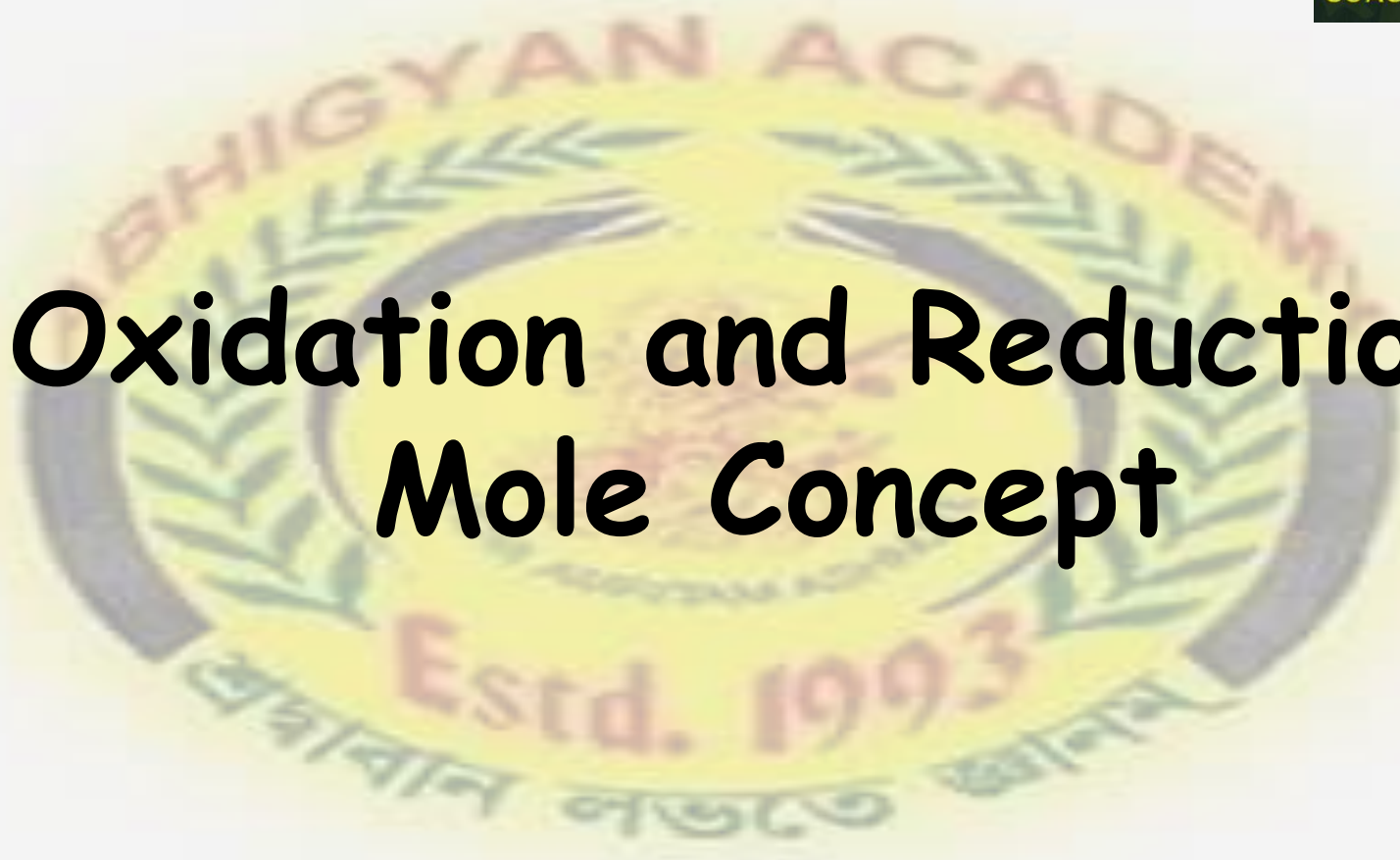


Oxidation and Reduction, Mole Concept

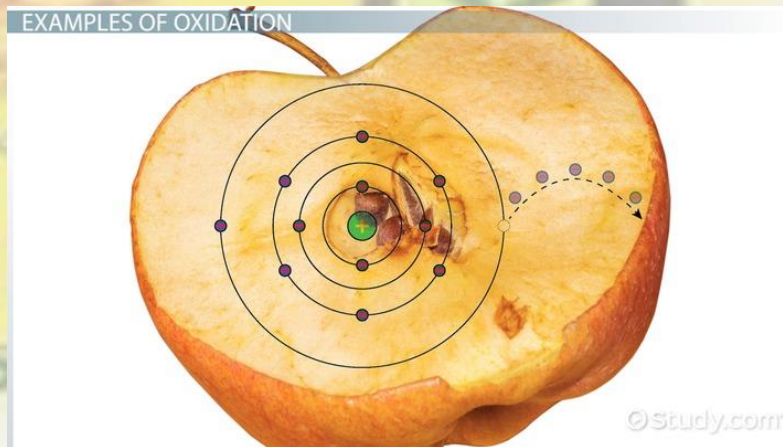


Oxidation

It is defined as the addition of oxygen to the substance or the removal of hydrogen from the substance.

(In electronic terms loss of electrons is called oxidation.)

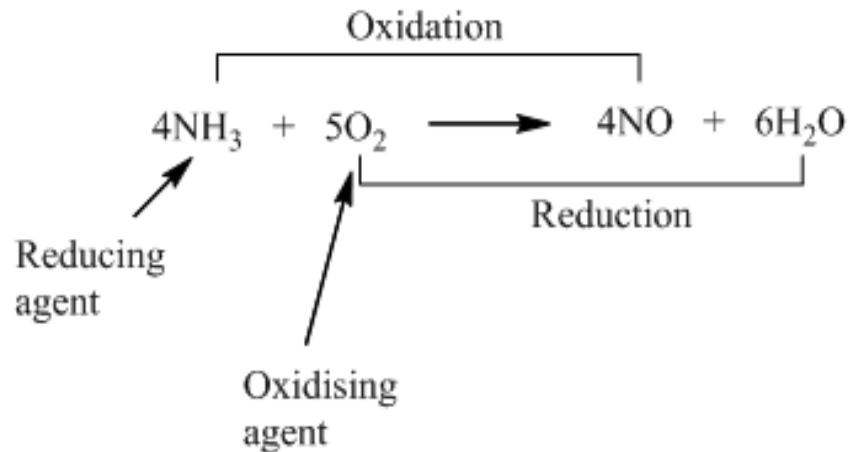
For example;



Oxidizing Agent

The substances which can add oxygen to other compounds are known as oxidizing agents.

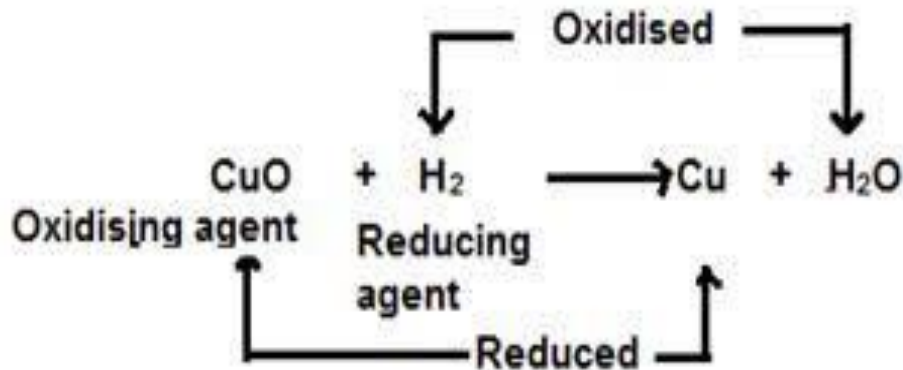
E.g.: O_2 , O_3 , HNO_3 , $KMnO_4$



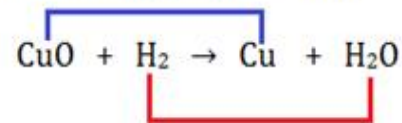
Reduction reactions

Those reactions in which hydrogen combines with a substance or oxygen is removed from a substance, are known as reduction reactions.

For eg:

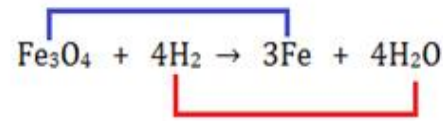


Removal of oxygen [Reduction]



Addition of oxygen [Oxidation]

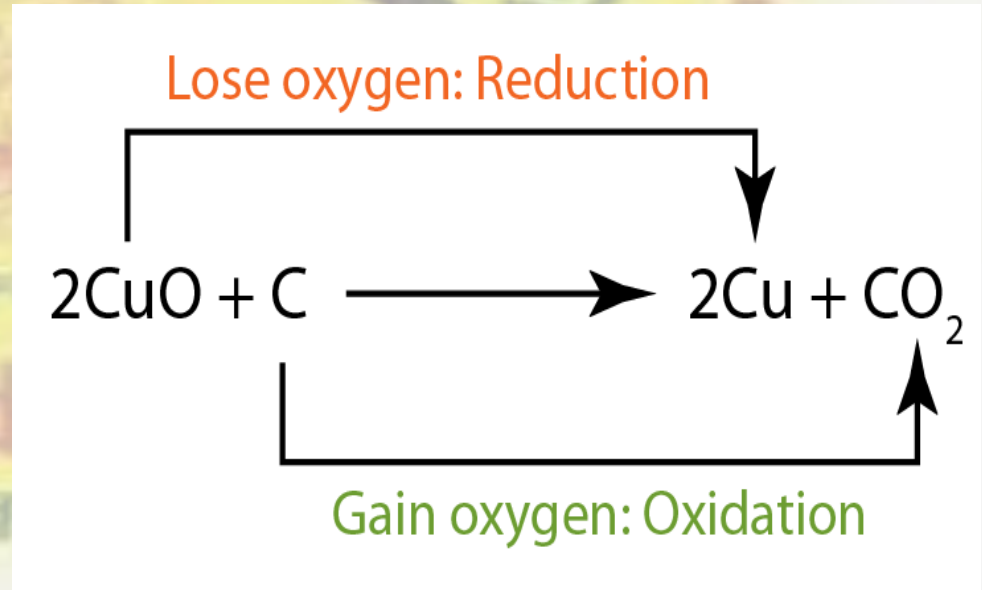
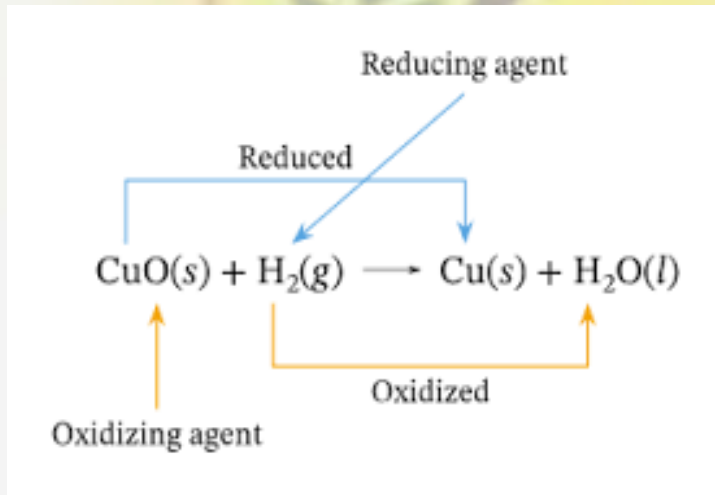
Removal of oxygen [Reduction]



Addition of oxygen [Oxidation]

Reducing agent

Reducing agent is a substance that provides Hydrogen or removes Oxygen from other compound.



Oxidising agents	Reducing agents
Bromine (Br_2)	Carbon (C)
Chlorine (Cl_2)	Carbon monoxide (CO)
Concentrated sulphuric acid (H_2SO_4)	Hydrogen (H_2)
Nitric acid (HNO_3)	Hydrogen sulphide (H_2S)
Oxygen (O_2)	Metals
Potassium manganate(VII) (KMnO_4)	Potassium iodide (KI)
Potassium dichromate(VI) ($\text{K}_2\text{Cr}_2\text{O}_7$)	Sulphur dioxide (SO_2)
Hydrogen peroxide (H_2O_2)	Ammonia (NH_3)