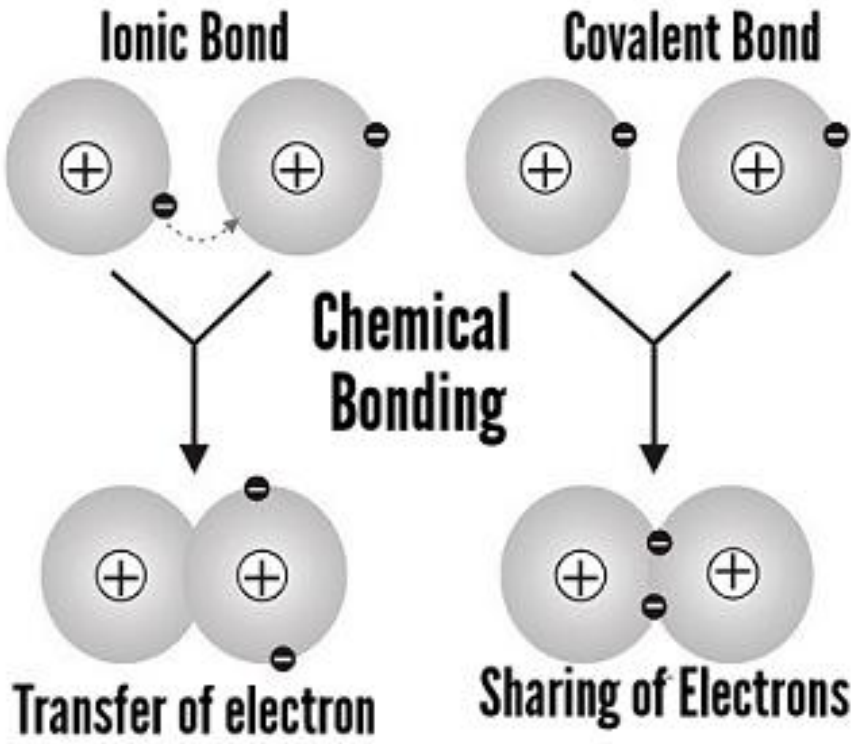
CHEMICAL BONDING



For Under Graduate Student

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Chemical bonding provides the energy necessary to hold two different atoms together as part of a chemical compound.

Strength of the bond depends on the molecules or atoms involved in the process of bond formation.

Types of Chemical Bonding

Ionic Bonds

Covalent Bonds

Hydrogen Bonds

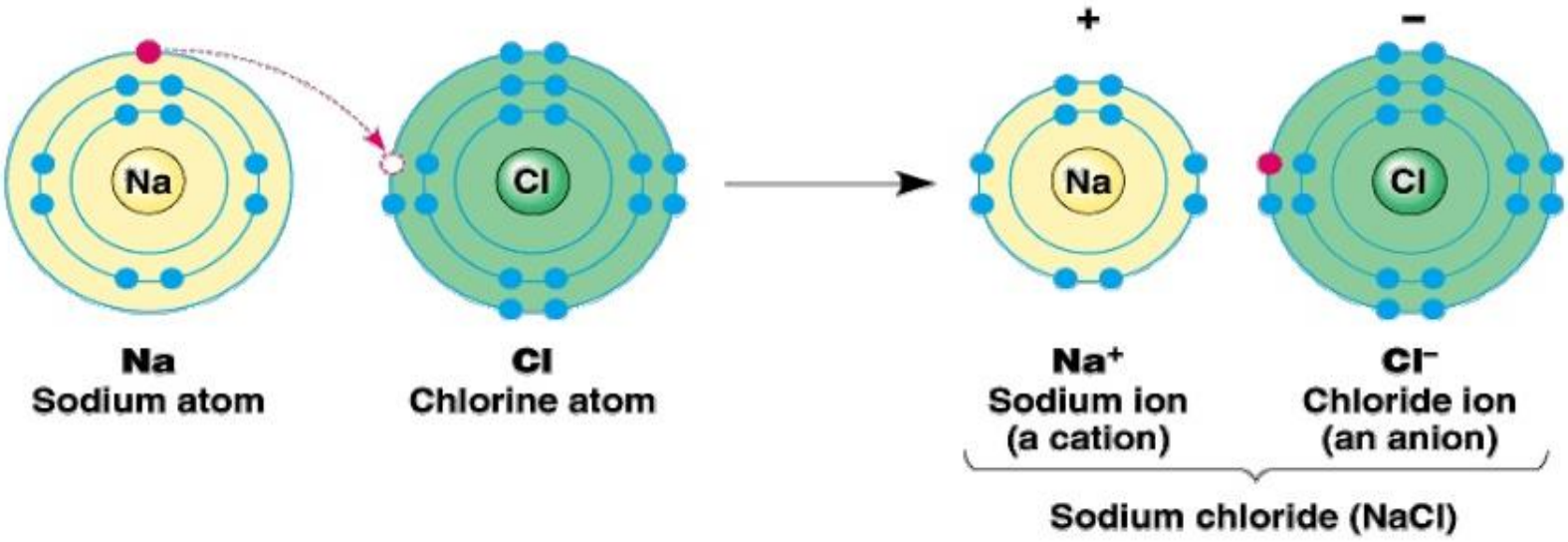
Metallic Bonds

Ionic Bonds

An Ionic bond is when an electron leaves one atom and exothermically enters into orbit around another. These to oppositely charged ions now attract each other.

Ionic bonds are generally formed between metals and nonmetals

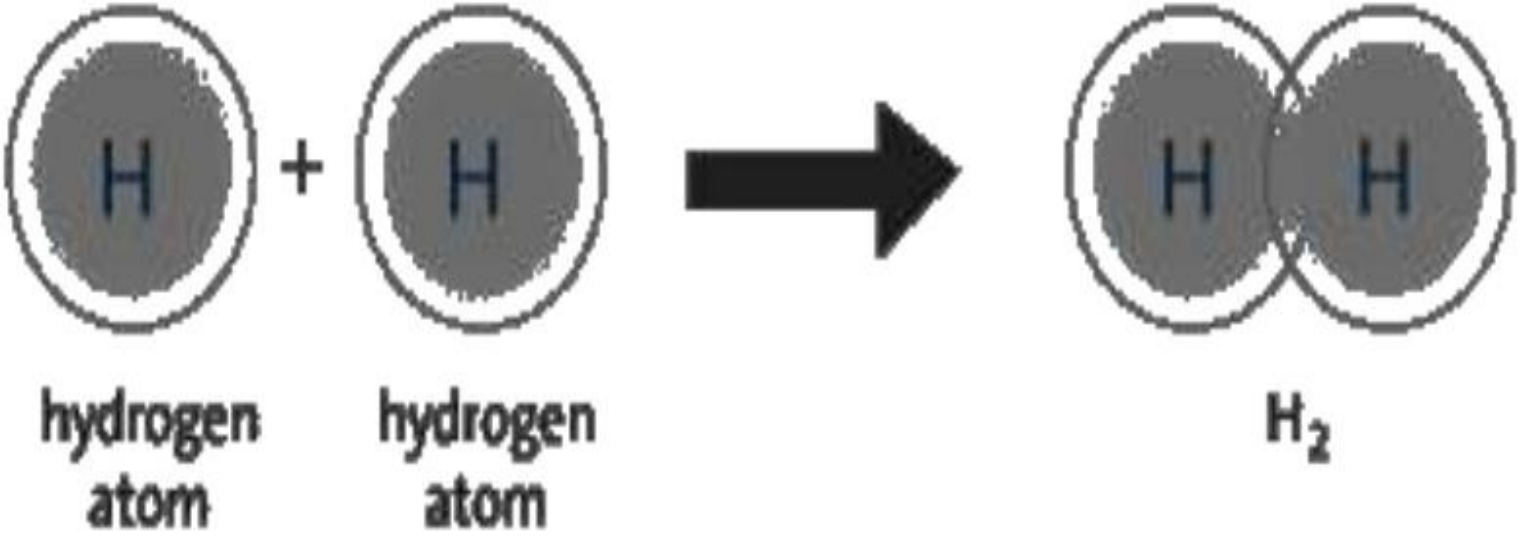
Example of Ionic Bond



Covalent Bonds

A type of chemical bond in which there is mutual sharing of electrons between two atoms is called covalent bond. It is further classified into single, double, and triple covalent bond with respect to mutual sharing of one, two, and three bonds respectively.

Example of Covalent Bond

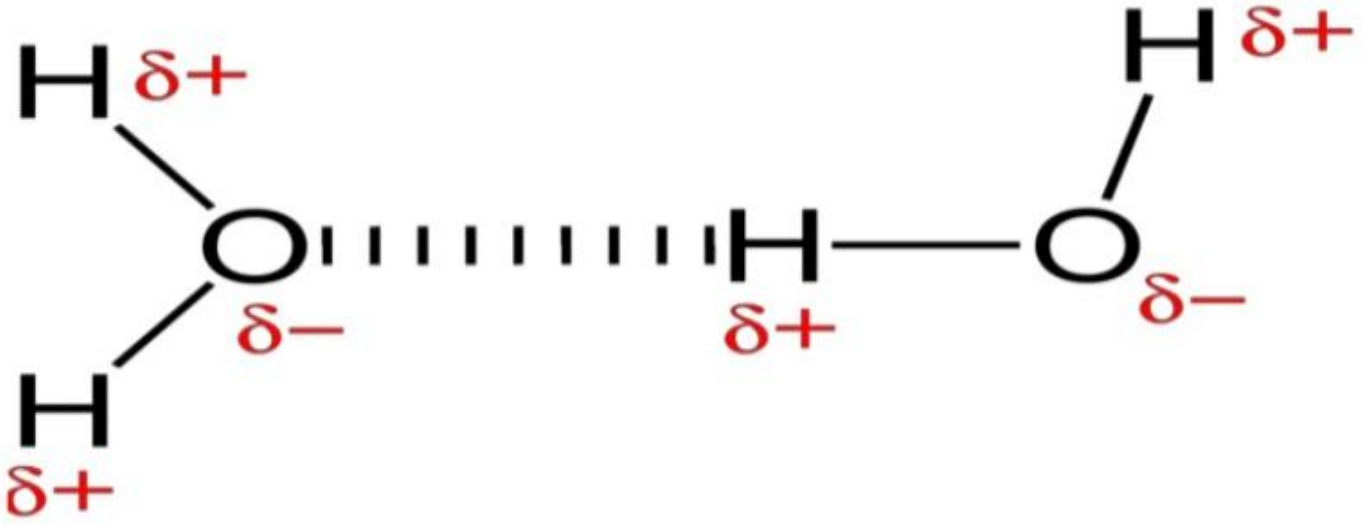


Hydrogen Bonds

A hydrogen bond is the attractive force between the hydrogen attached to an electronegative atom of one molecule and an electronegative atom of a different molecule.

Usually the electronegative atom is oxygen, nitrogen, or fluorine, which has a partial negative charge.

Example of Hydrogen Bond

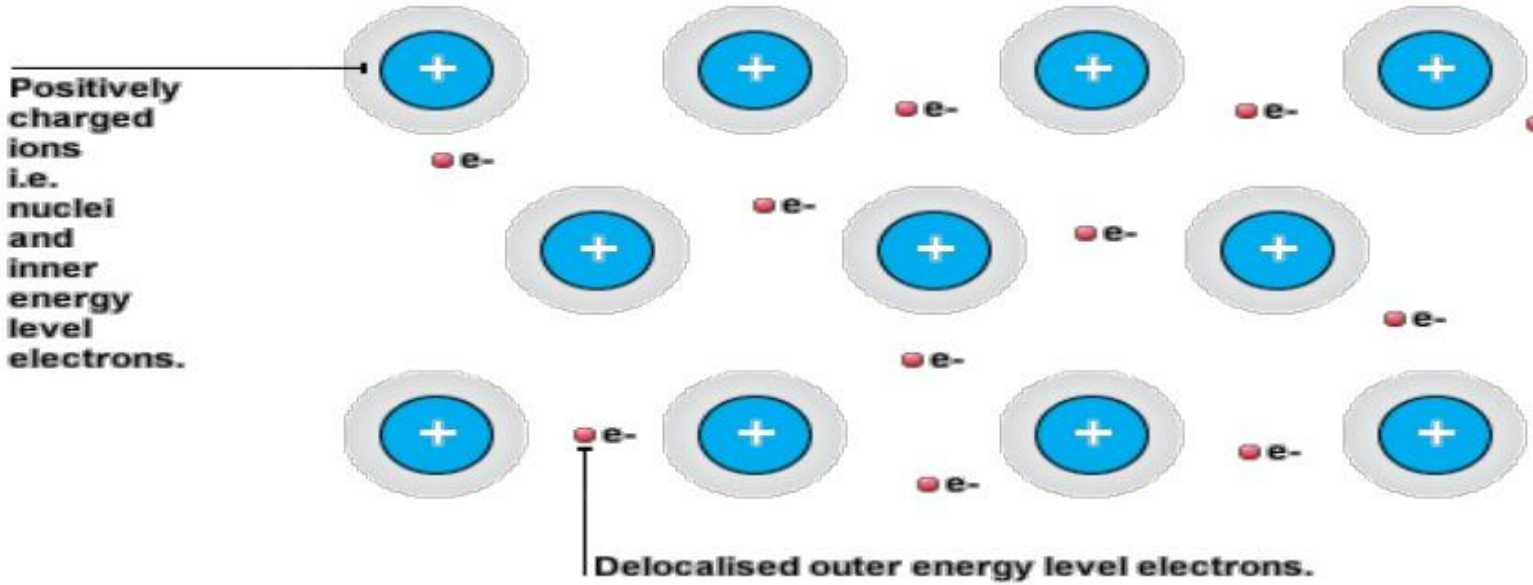


Metallic Bonds

Metallic bonding is the type of bonding found in metallic elements. This is the electrostatic force of attraction between positively charged ions and delocalized outer electrons.

Metallic bonding refers to the interaction between the delocalized electrons and the metal nuclei.

Example of Metallic Bond



e^- = delocalised electrons

+ = metal cation