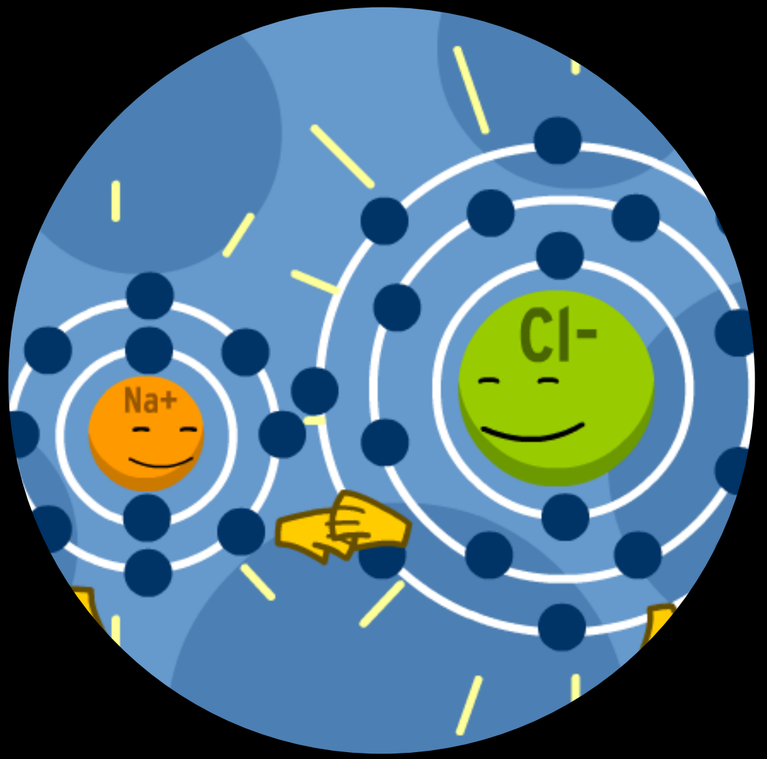
Chemistry

CHEMICAL BONDING



CHEMICAL BOND

The attractive force which holds various constituents (atoms, ions, etc) together in different chemical species is called a chemical bond. During the formation of a chemical bond, energy is released.

• The capacity of an element to form chemical bonds is known as its **valency**. The valency of an element is the **combining capacity** of an element.

Some elements e.g., Cu, Fe etc. exhibit more than one valencies (variable valency). Cu and Hg exhibit + 1 and + 2 valencies and Fe exhibits + 2 and + 3 valencies

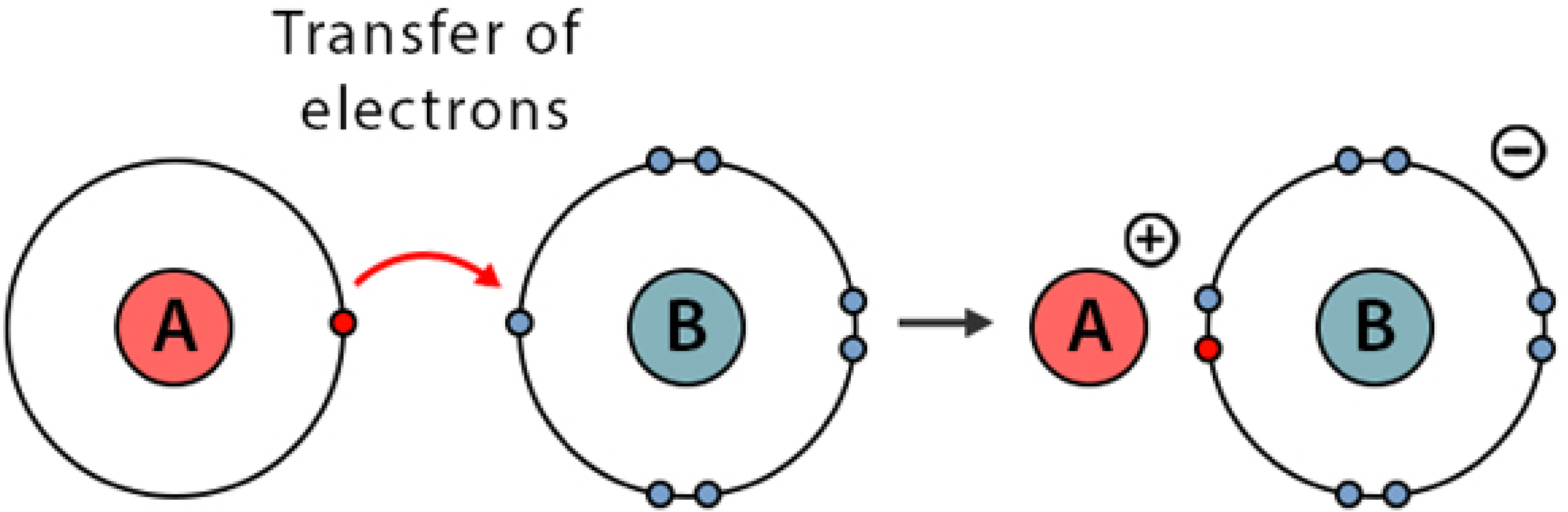
Some important elements and their valencies are as follows:

(i) H, Cl, Br, I, Cu etc. are monovalent as their valency is 1.
(ii) O, S, Mg, Ca, Zn, Fe, Cu, Pb, Co, Ni etc. are divalent as their valency is 2.
(iii) N, P, Al, Cr, B etc are trivalent as their valency is 3.
(iv) C, Si etc are tetravalent as their valency is 4.

TYPES OF CHEMICAL BOND

1. Electrovalent or ionic bond
2. Covalent bond
3. Coordinate bond

Ionic Bond

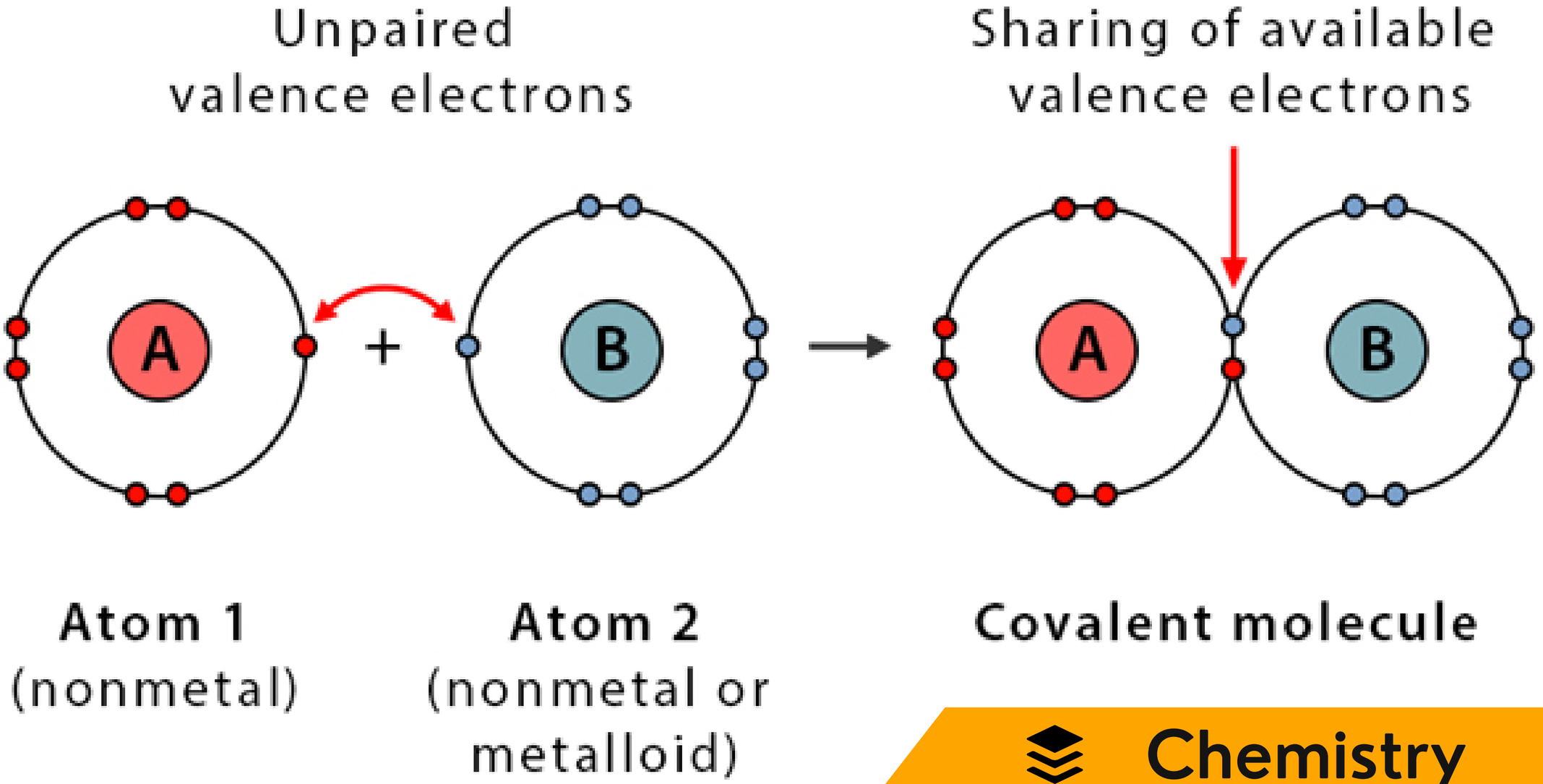


Atom 1
(metal)

Atom 2
(nonmetal)

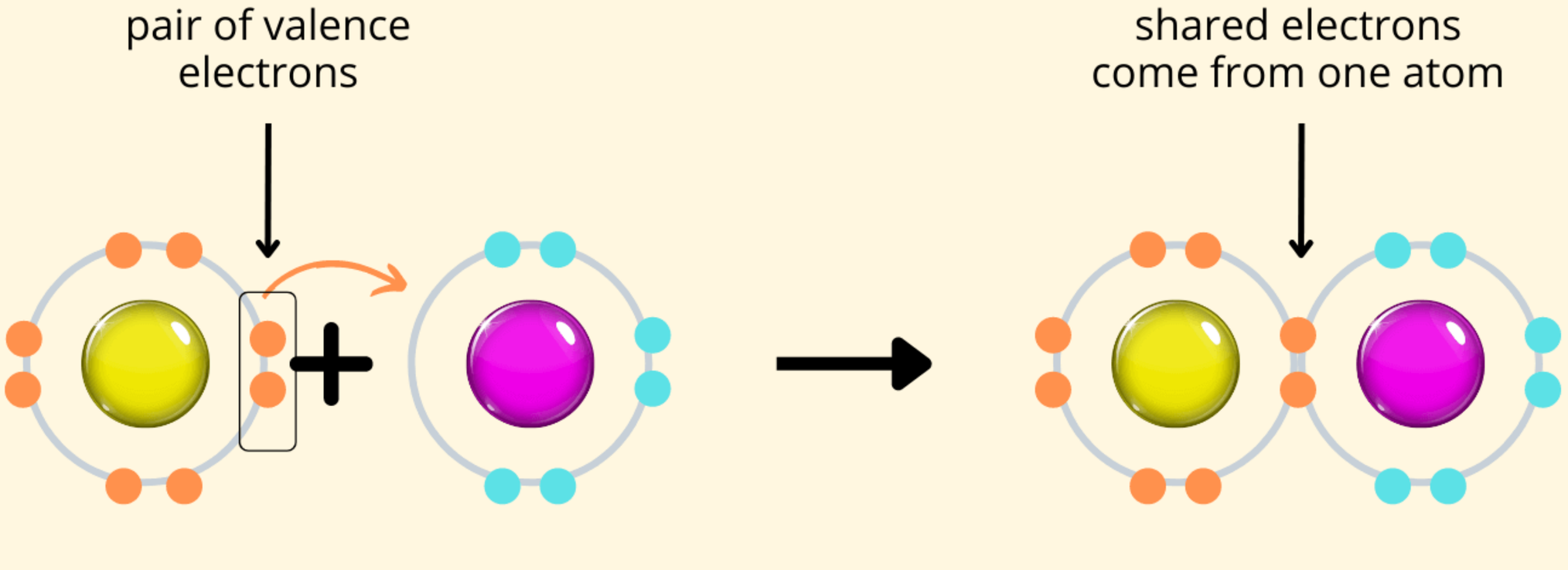
Ionic molecule

Covalent Bond

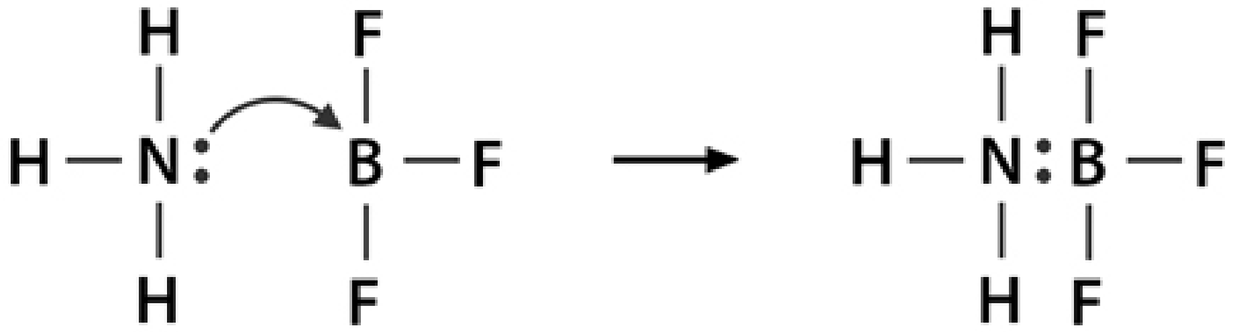


Coordinate Covalent Bond
(Dative Bond)

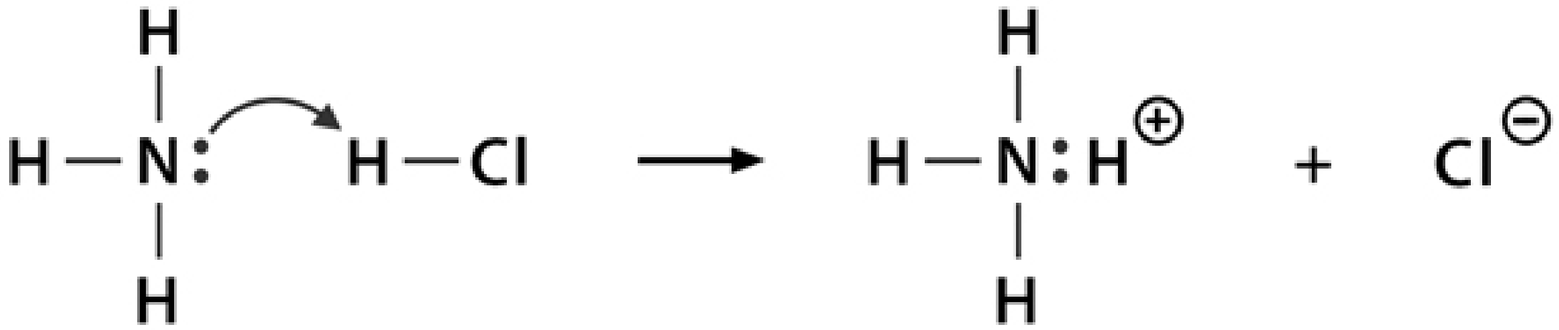
A coordinate covalent or dative bond is a covalent bond that forms when both electrons come from the same atom.



1. Ammonia Boron Triflouride



2. Ammonium ion



3. Hydronium ion