

Covalent Bonding: force of attraction b/w
 (2 NMS) the nuclei of two non-metal atoms
 and a shared pair of e^- .

Electromagnetic Force (atoms are neutral)

- = electrons

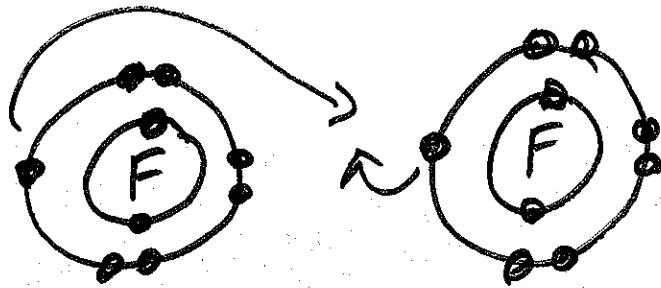
+ = nucleus

- Covalent bonding is used because neither atom is willing to give up their electrons
- Each atom must donate 1 e^- to the shared pair

* Atoms START + remain neutral

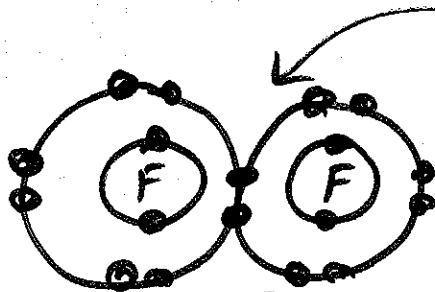
example:

F_2



$9e^-$
 $9p^+$
 0

$9e^-$
 $9p^+$
 0



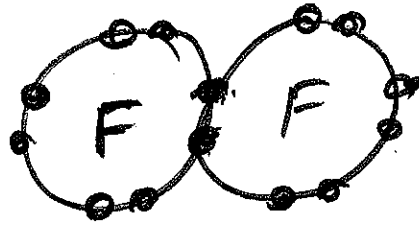
$18e^-$
 $18p^+$
 0

- valence shells overlap
- both e^- are counted for each atom

Covalent

shared valence shell

What holds it together? EM Force

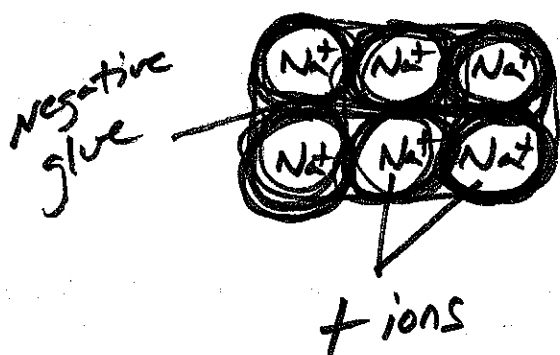
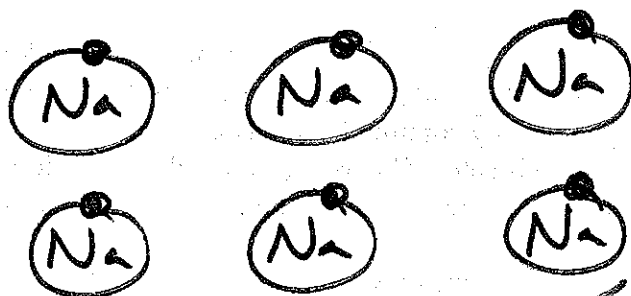


electromagnetic tug of war
- neither lets go
- stick together

Metallic Bonding: force of attraction b/w positively charged metal ions and a common pool of free-flowing e^-
(b/w 2 metals)

blend b/w ionic/covalent
metals give e^-
valence shells overlap

- EM force
+ = metal ions
- = electrons



e^- flow (electricity)