

Bonding

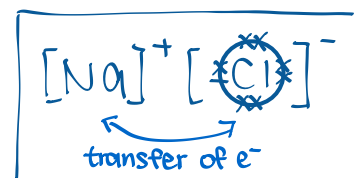
1 What is a bond?

- Strong electrostatic force \therefore positively & negatively charged species
 \hookrightarrow 静电引力 \hookrightarrow 物质

2 Ionic bond

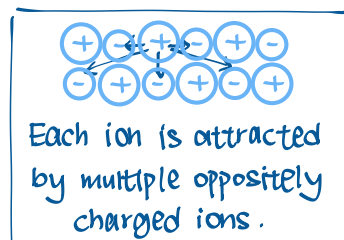
组成的物质

- Grp I-III w/ Grp IV-VII //
cation & anion \rightarrow both element, eg. NaCl
simple / polyatomic ion, eg. NaNO_3
- +ve: cation
- -ve: anion



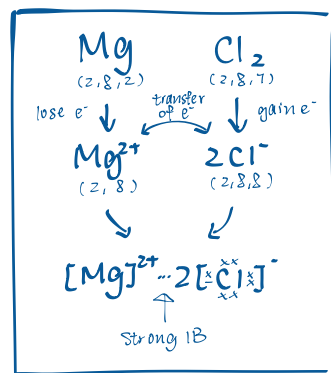
DIRECTIONALITY

- non-directional



FORMATION (MgCl_2)

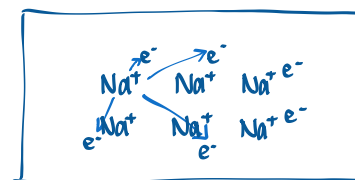
- 1 Mg atom loses 2 outermost shell $e^- \rightarrow \text{Mg}^{2+}$
 - 2 Cl atoms of each accept 1 e^- to its outermost shell $\rightarrow \text{Cl}^-$
- \Rightarrow transfer of e^-
 \rightarrow strong IB \therefore them



3 Metallic bond

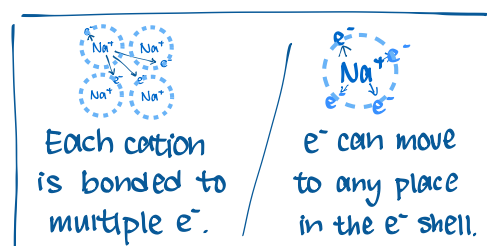
组成的物质

- Grp I-III 自己一个人
- +ve: metal ion
- -ve: delocalised e^- \rightarrow 还是被 ion 吸引着, 不是 "free"



DIRECTIONALITY

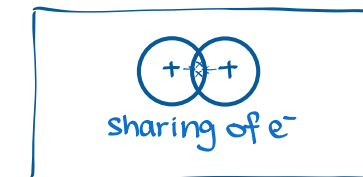
- non-directional



4 Covalent bond

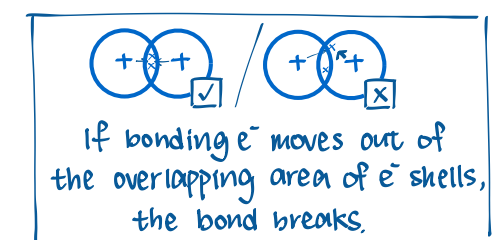
组成的物质

- Grp IV-VII 自然组合
- +ve: nucleus
- -ve: bonding e^-



DIRECTIONALITY

- directional



FORMATION (CH_4)

- 1 C atom has 4 outermost shell e^- , of each shares 1 e^- from H atom
- \Rightarrow Strong CB \therefore them