

Chapter 10

A molecule is made up two or more atoms joined by a net attractive force between them.

A molecule emits and absorb energy in the same way an atom does.

Molecules can store kinetic energy of rotation, and vibration.

The vibration-rotation spectra give information on the strength of the bond, the length of the bond etc.

The bonding mechanisms are

* **Ionic** bonding is formed by attraction of two oppositely charged ions such as Na^+Cl^- to form NaCl molecule.

Covalent bonding is formed by the sharing of valence electrons of the atoms such as H_2 , O_2 molecules

Hydrogen bonding is formed by a hydrogen atom and two negatively charged ions such as $(\text{HF}_2)^-$ ionic molecule.

Van der Waals bonding is a weak electrostatic bond between atoms that do not form ionic or covalent bonding.