

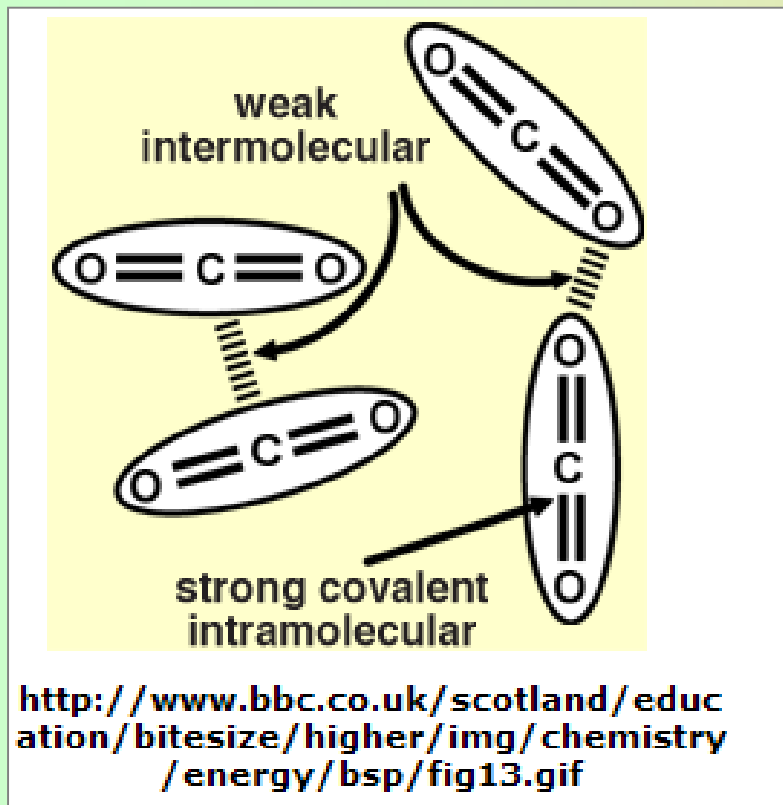
# Intermolecular Forces

## Introduction

Intermolecular forces (forces between molecules) are much weaker than covalent bonds.

Three types of intermolecular attractive forces are known to exist between neutral molecules:

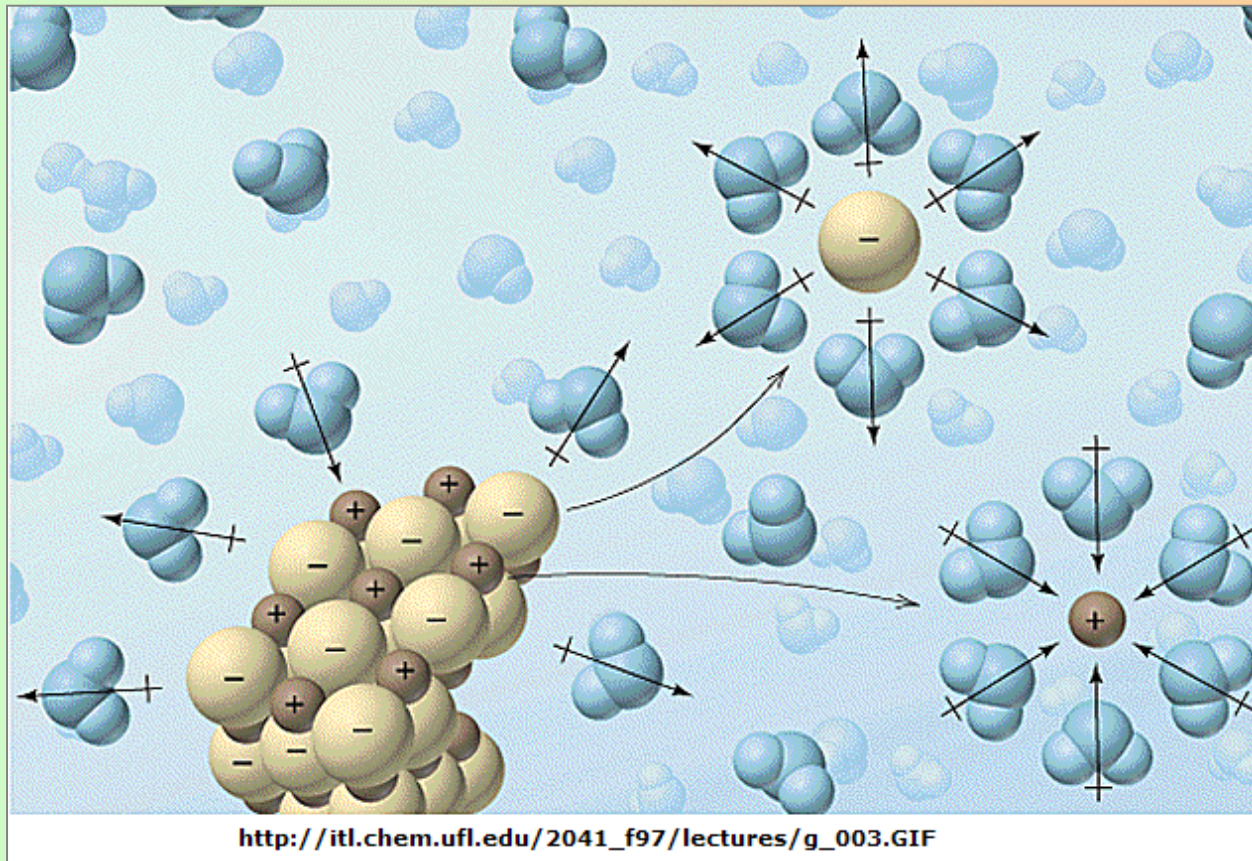
- Dipole-dipole forces
- London dispersion forces
- Hydrogen-bonding forces



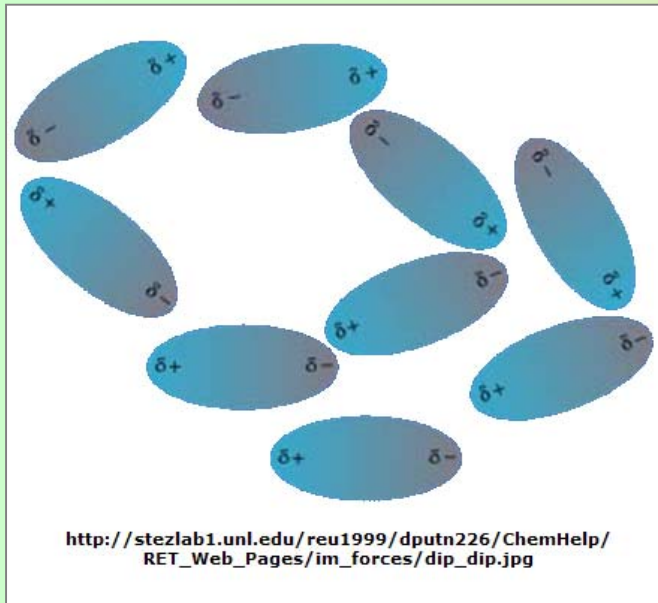
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## Ion-dipole forces

An ion-dipole force exists between an ion and the partial charge on the end of a polar molecule.



# Intermolecular Forces

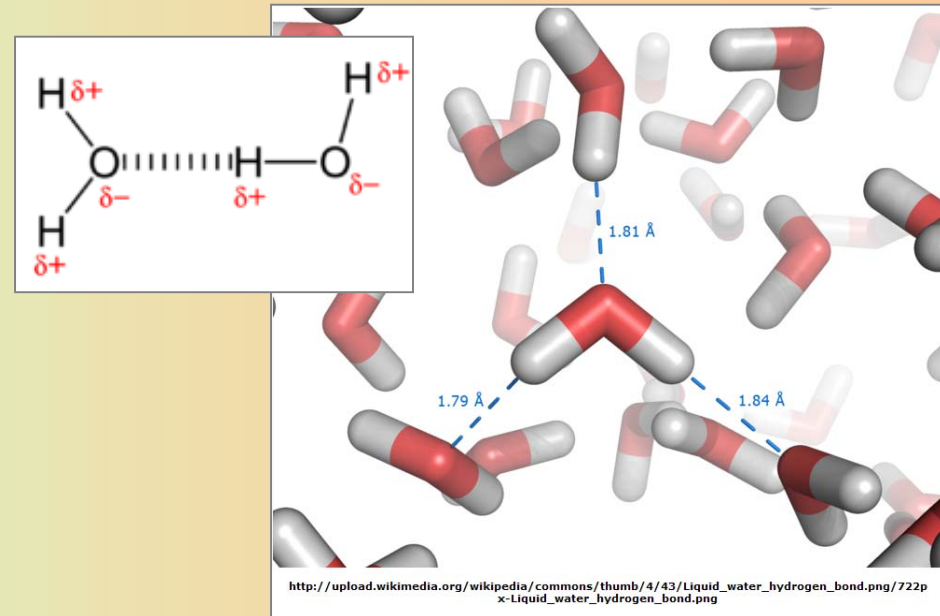


## Dipole-dipole forces

A dipole-dipole force exists between neutral polar molecules. Polar molecules attract each other when the positive end of one molecule is near the negative end of another.

## Hydrogen bonding

Hydrogen bonding is a special type of intermolecular attraction that exists between the hydrogen atom in a polar bond (particularly H-F, H-O or H-N) and an unshared electron pair.



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## London Dispersion Forces

The motion of electrons in an atom or a molecule can create an instantaneous dipole moment.

Thus, attraction between those instantaneous dipoles happen and this type of attraction is called London dispersion force.

