BIOCHEM

L1 – Bonding in bio compounds

Bonding in Biological Compounds:

- Covalent bonding •
- Hydrogen bonding •
- Ionic bonding
- Hydrophobic interactions
- Polar and non-polar compounds •

Covalent Bonding

- A covalent bond between two atoms arises from the SHARING of a PAIR of electrons.
- There is no formal charge.
- Hydrogen would like to have 2 outer shell electrons.
- Elements from the first row of the periodic table (eg C, N, O, F) like to have 8 outer shell electrons. •

H forms 1 covalent bond C forms 4 covalent bonds N forms 3 covalent bonds O forms 2 covalent bonds F forms 1 covalent bond

Example:

r shell elector of A selector to share 4 electron pairs (make 4 covalent bonds). Methane Carbon



Carbon now has 8 electrons in its outer shell. Each hydrogen has 2 outer shell electrons. Tetrahedral in shape (electron pairs as far apart as possible)

Ammonia (NH3)

Nitrogen (2,5) has 5 outer-shell electrons and would like 8 to attain the structure of neon.



Hydrogen has 1 electron and would like 2 in order to fill its 1s subshell and attain the structure of helium.

Add the hydrogens



