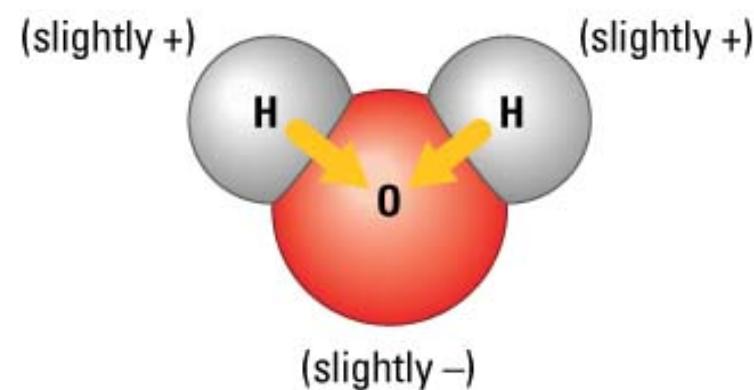
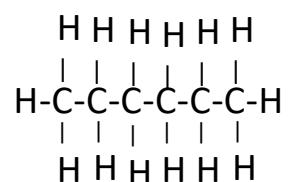
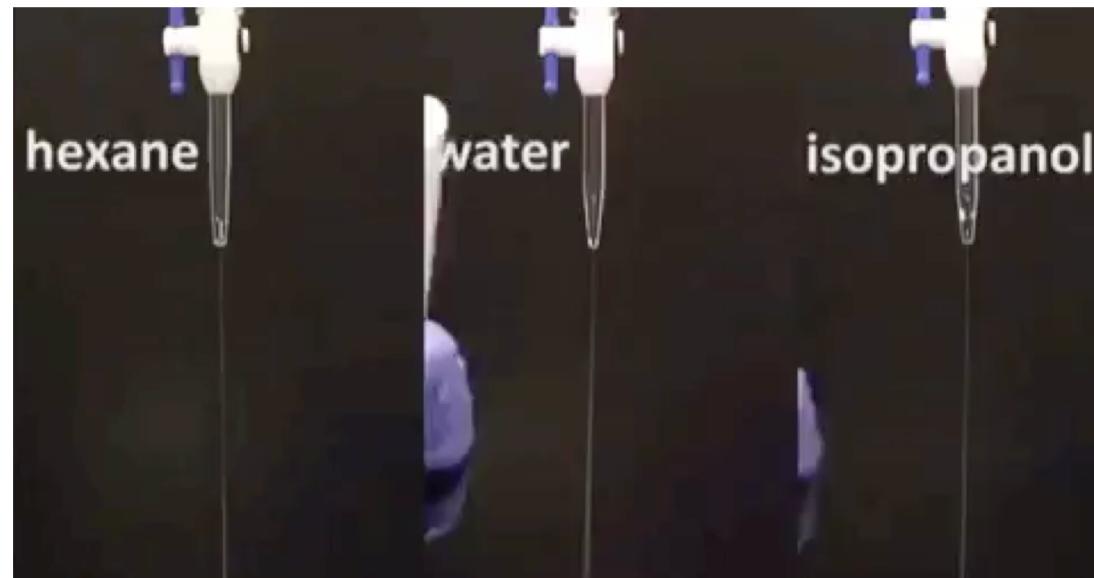


Water is a polar molecule



Démonstration de la polarité de l'eau

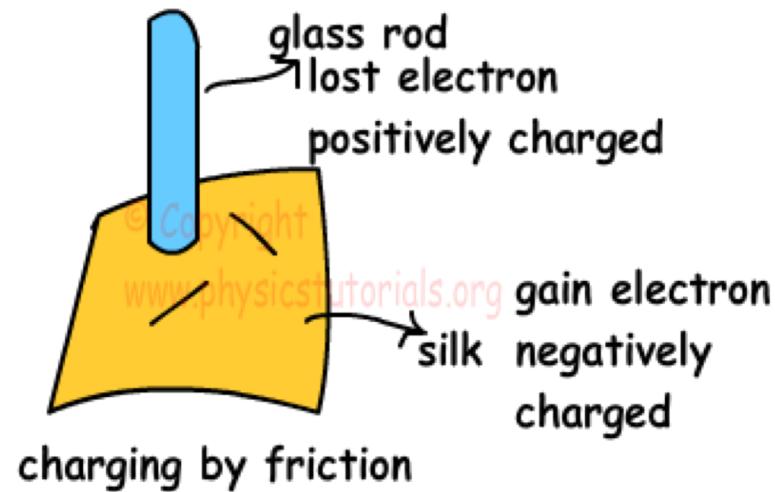
Charge électrostatique
par friction

peigne



https://www.youtube.com/watch?v=KfcVf_PdXjk

Charging by friction



Charging by Friction

Tige de verre

Electrons rubbed off
glass rod...

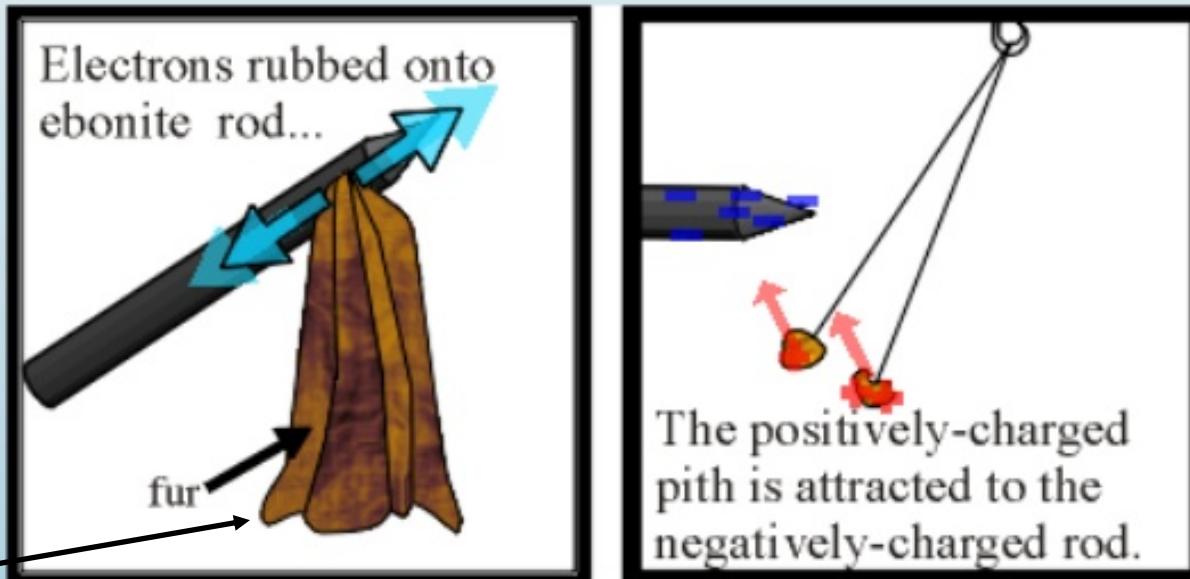
silk cloth

Soie

...leaving it positively
charged

- The two objects wind up with opposite charges.

Negatively charged objects have gained electrons.

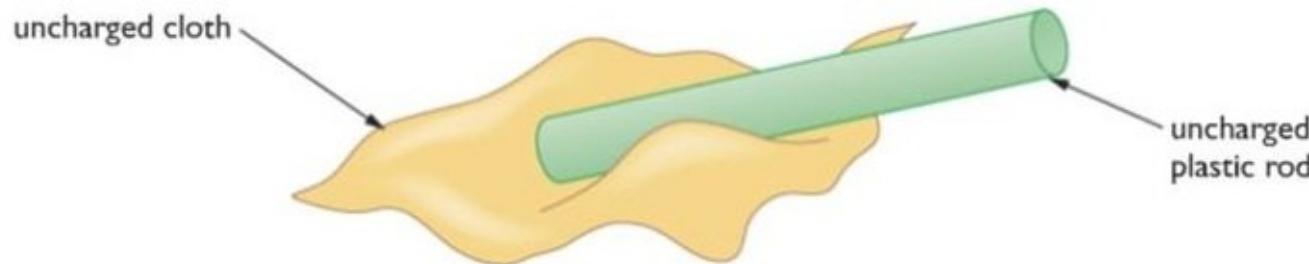


Peau de chat

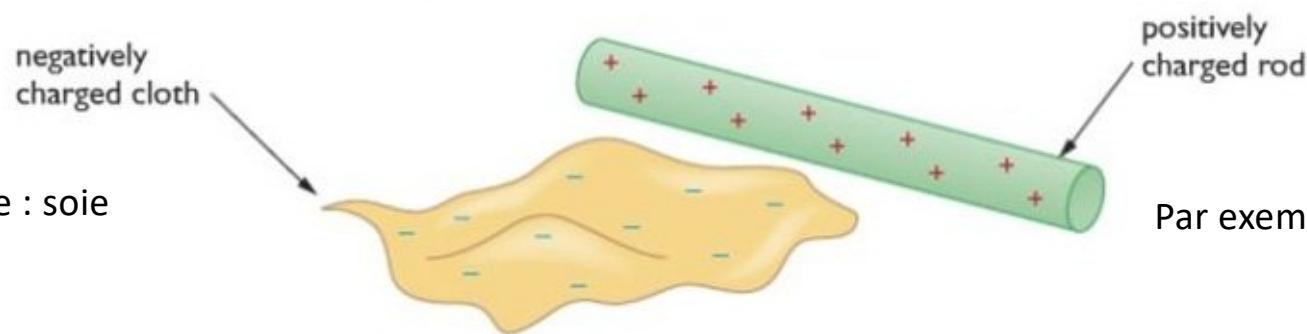
Example: rubbing a rubber rod with fur.

- **Rubber Rod: - charged**
- **Fur: + charged**

Charging by friction : electrostatic



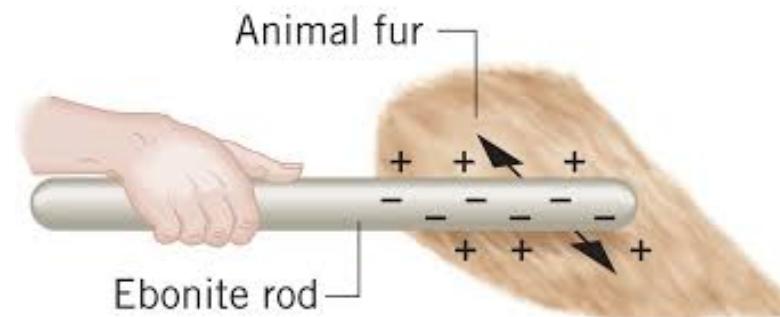
Par exemple : soie



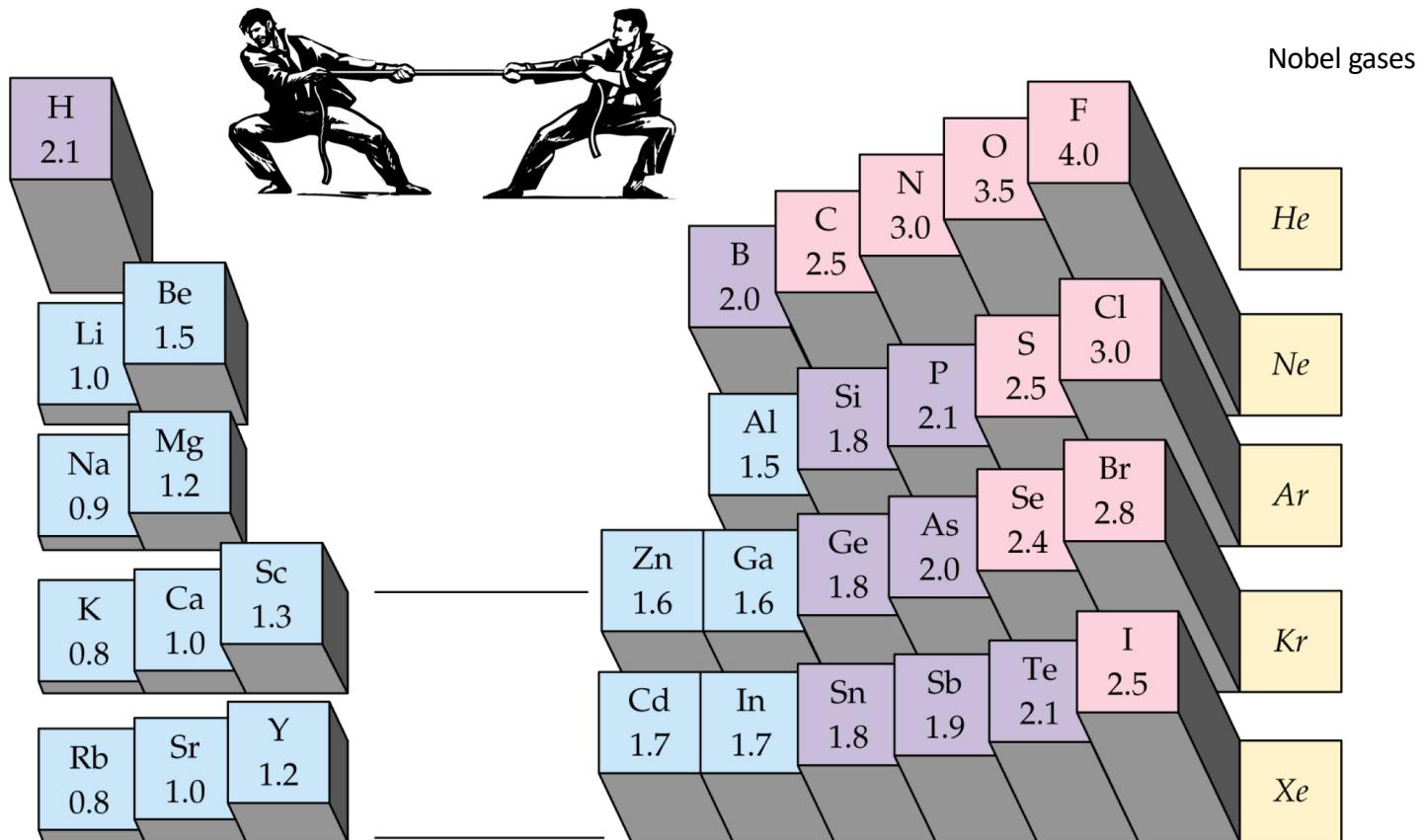
Par exemple : tige en verre

Rubbing a neutral rod with a neutral piece of cloth can result in them both becoming charged.

Charging by friction : electrostatic

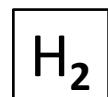
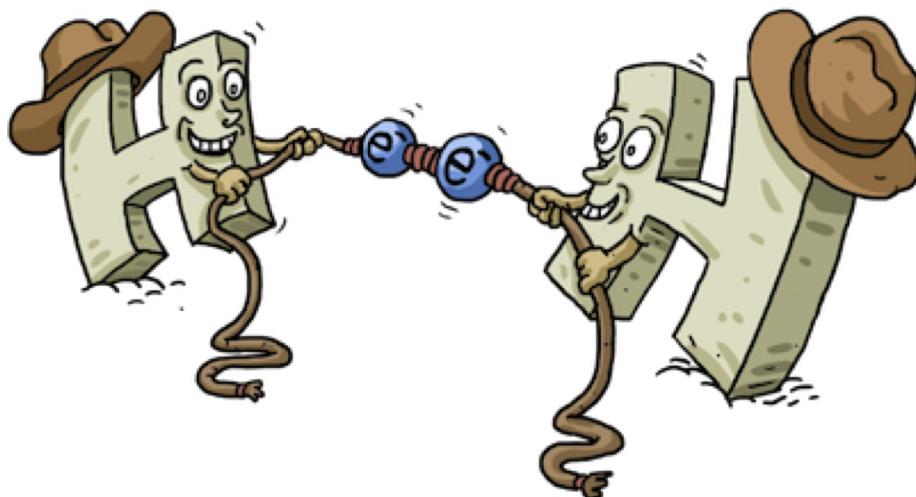


Electronegativity

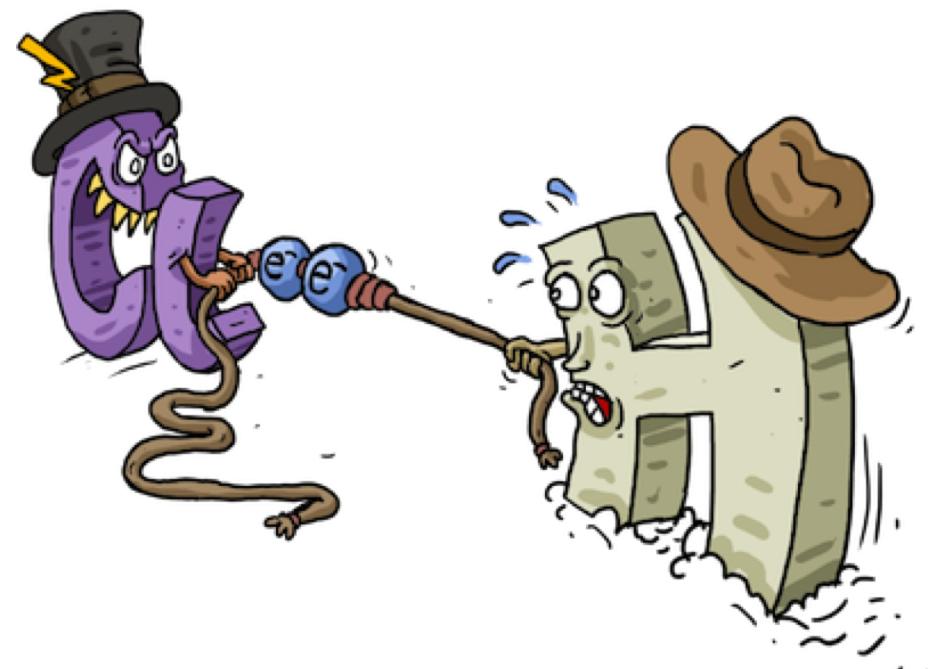


Electronegativity difference : $3.5 - 2.1 = 1.4$

Non-Polar Covalent Bond



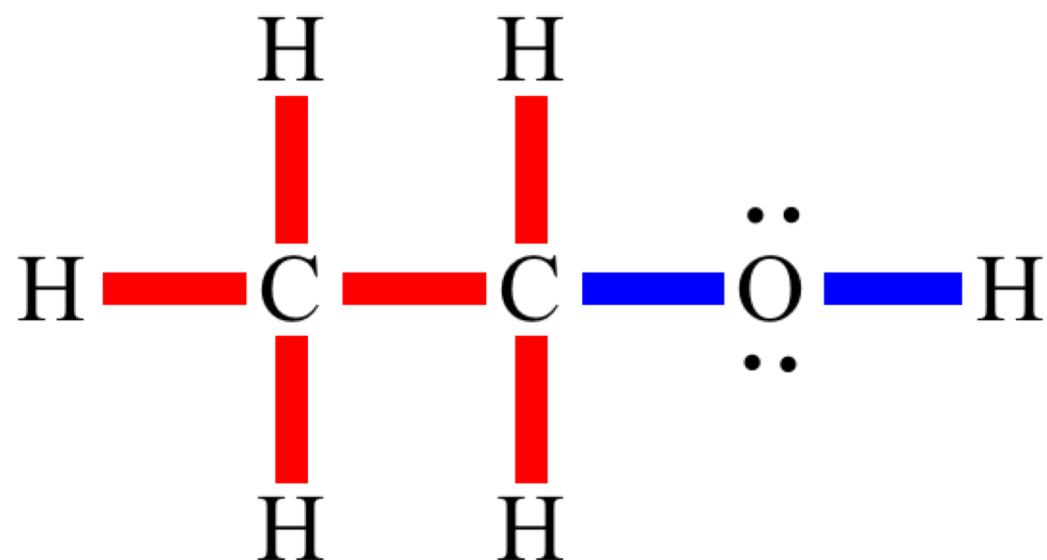
Polar Covalent Bond



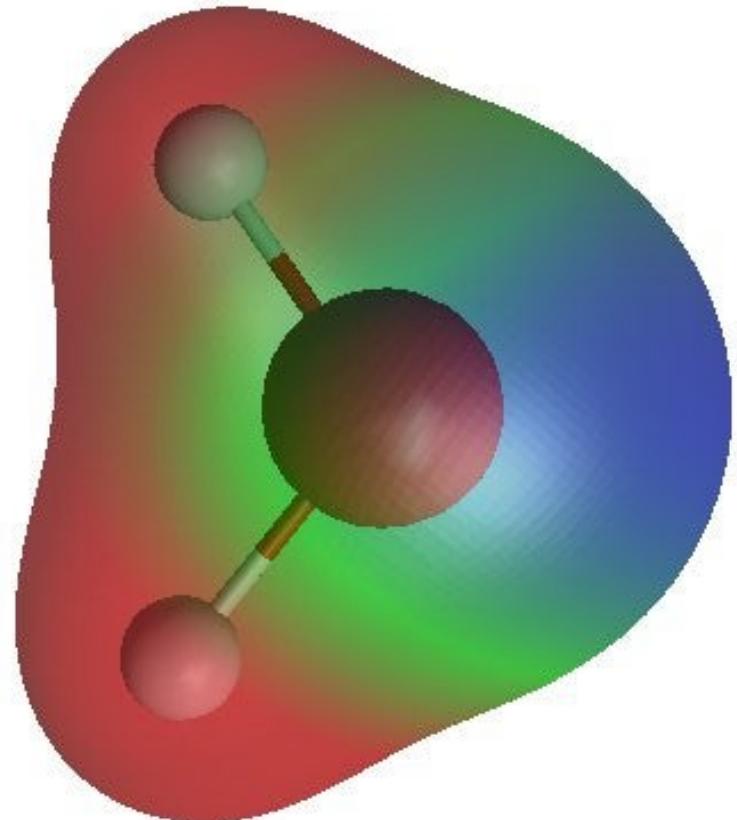
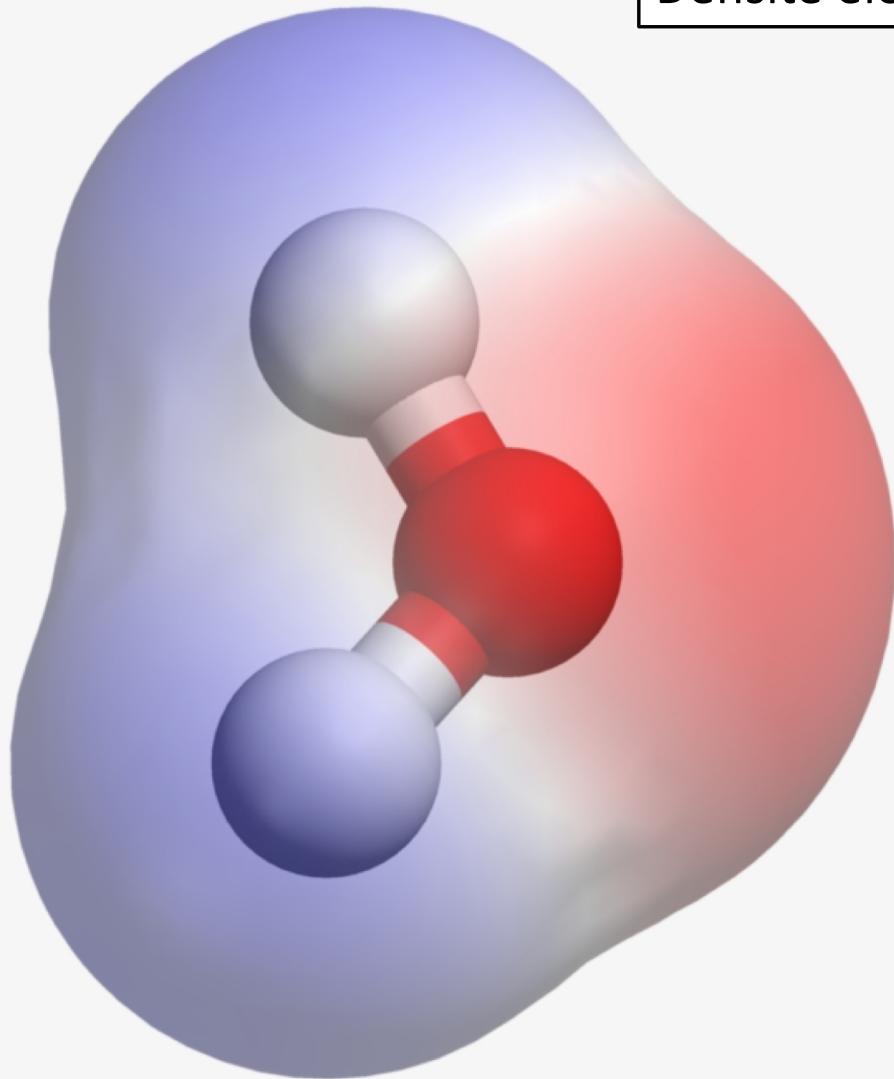
Acide chlorhydrique

ΔEN	Bonding	Bond Example
0.0 - 0.4	Nonpolar covalent bond	H-C, C-C
0.5 - 0.9	Slightly polar covalent bond	H-N, H-Cl
1.0 - 1.3	Moderately polar covalent bond	C-O, S-O
1.4 - 1.7	Highly polar covalent bond	H-O
1.8 - 2.2	Slightly ionic bond	H-F
2.3 - 3.3	Highly ionic bond	Na ⁺ F ⁻

Increasing ΔEN
Increasing ionic (polar) character

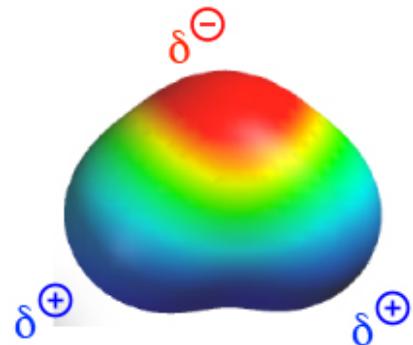
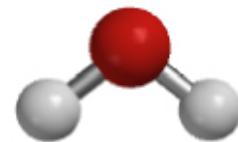
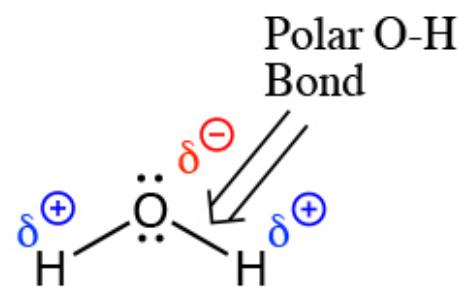


Densité électronique d'une molécule d'eau



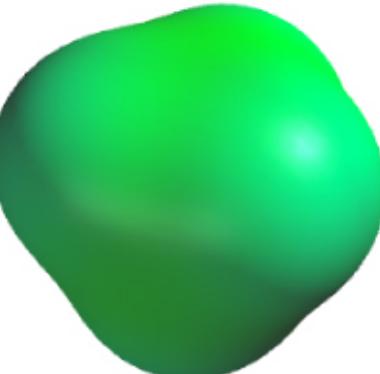
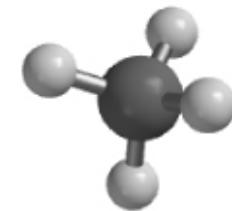
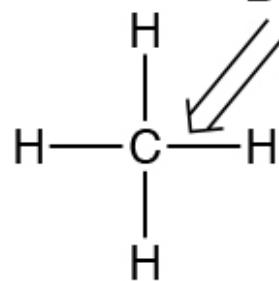
Interactions inter-atomiques

intra-moléculaires



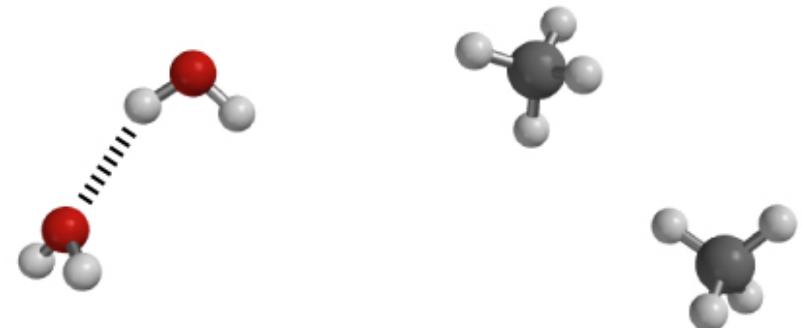
Water

Not a Polar Bond

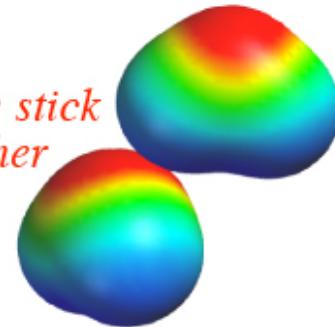


Methane

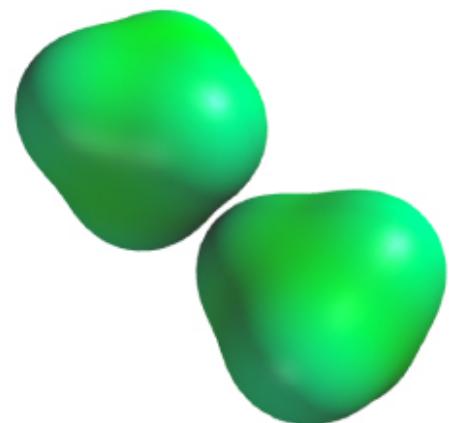
Interactions inter-moléculaires



These stick together

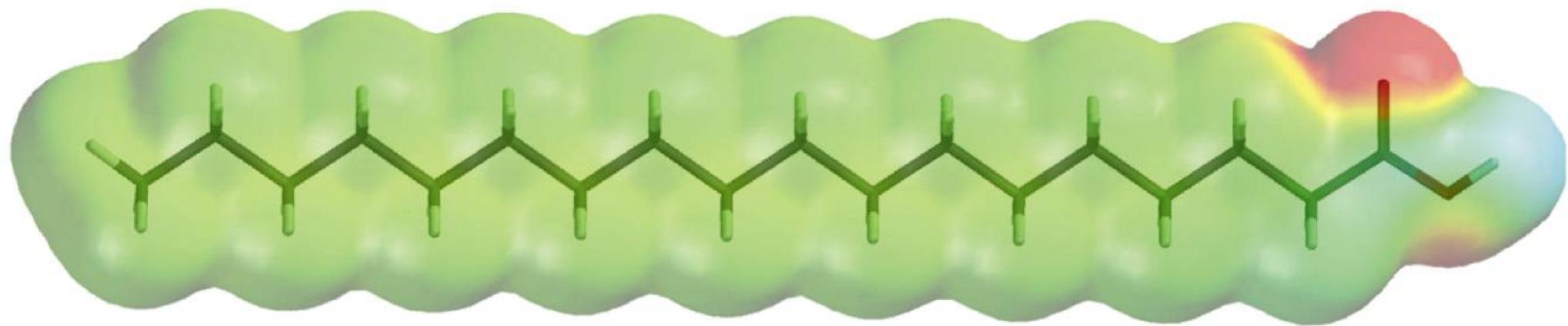


Strong interactions between polar molecules. High melting point and boiling point.



Weak interactions between molecules. Low melting point and boiling point.

A fatty acid



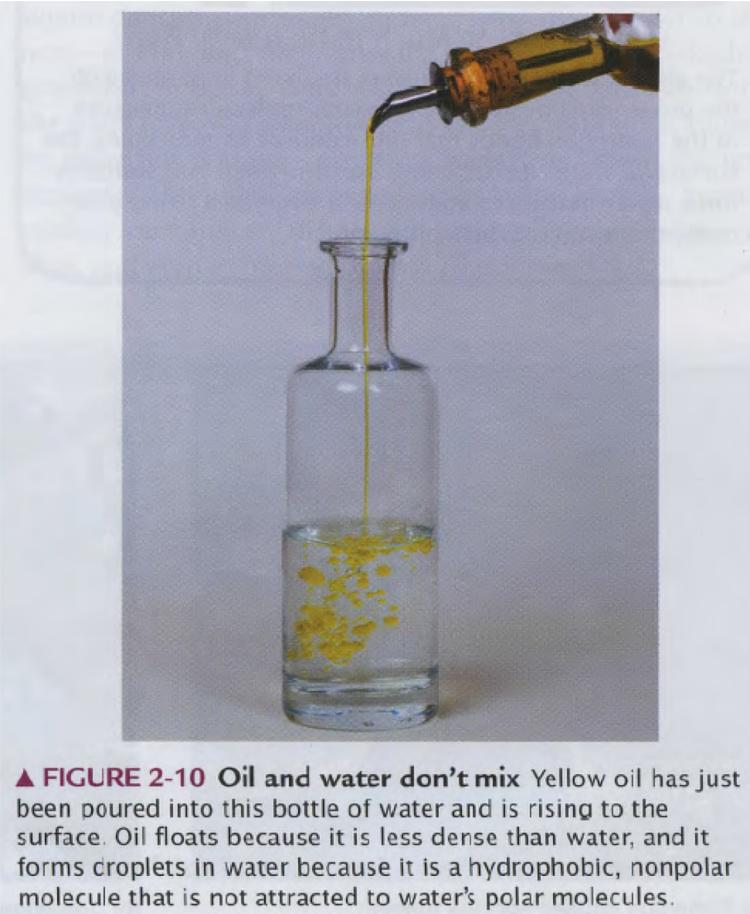
stearic acid

18 atomes de carbone

Polarity and solubility

Water :

- polar
- hydrophilic



Oil :

lipid

nonpolar

hydrophobic