

**STRONGS** Intra Molecular } Inter molecular

Within a molecule } Between molecules

**STRONGS**

① Ionic - RADIUS, charge

② Covalent

③ Ionic - Dipole ← Polar Covalent

④ Dipole - Dipole

⑤ LDF

London Dispersion forces

"Van der Waals force"

**WEAK**

**IMF**

Energy

Dec 4-8:41 AM

① Ion - Ion

② Ion - Dipole

③ Dipole - Dipole

④ LDF

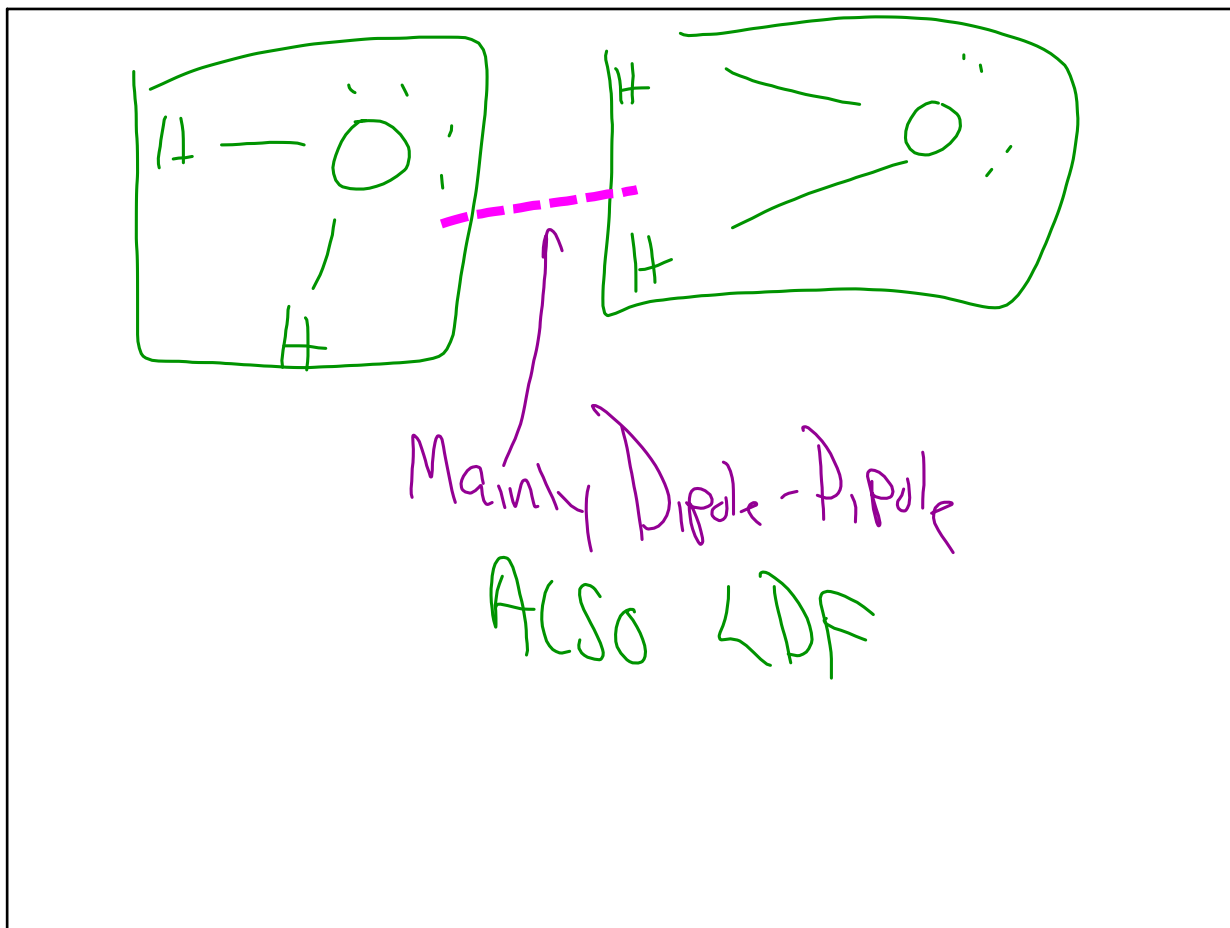
Gravity

Earth

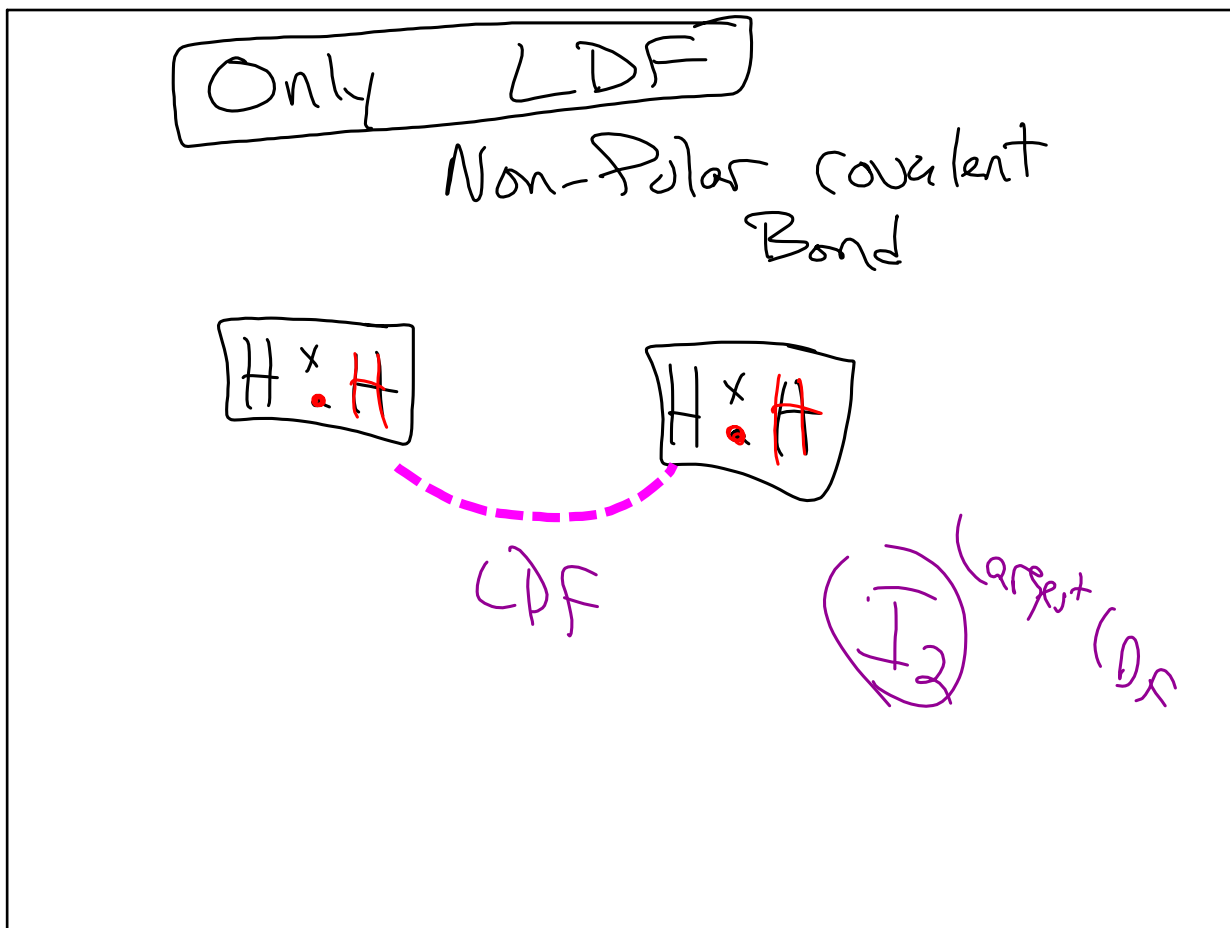
Greater LDF

Mean

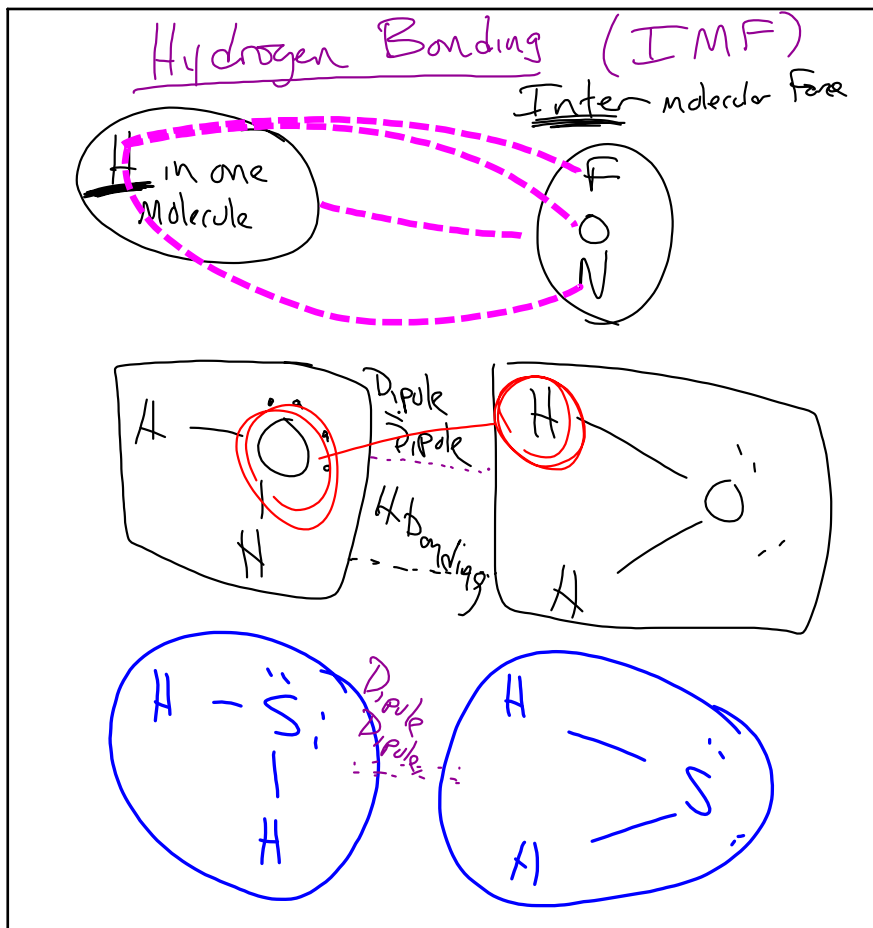
Dec 4-8:59 AM



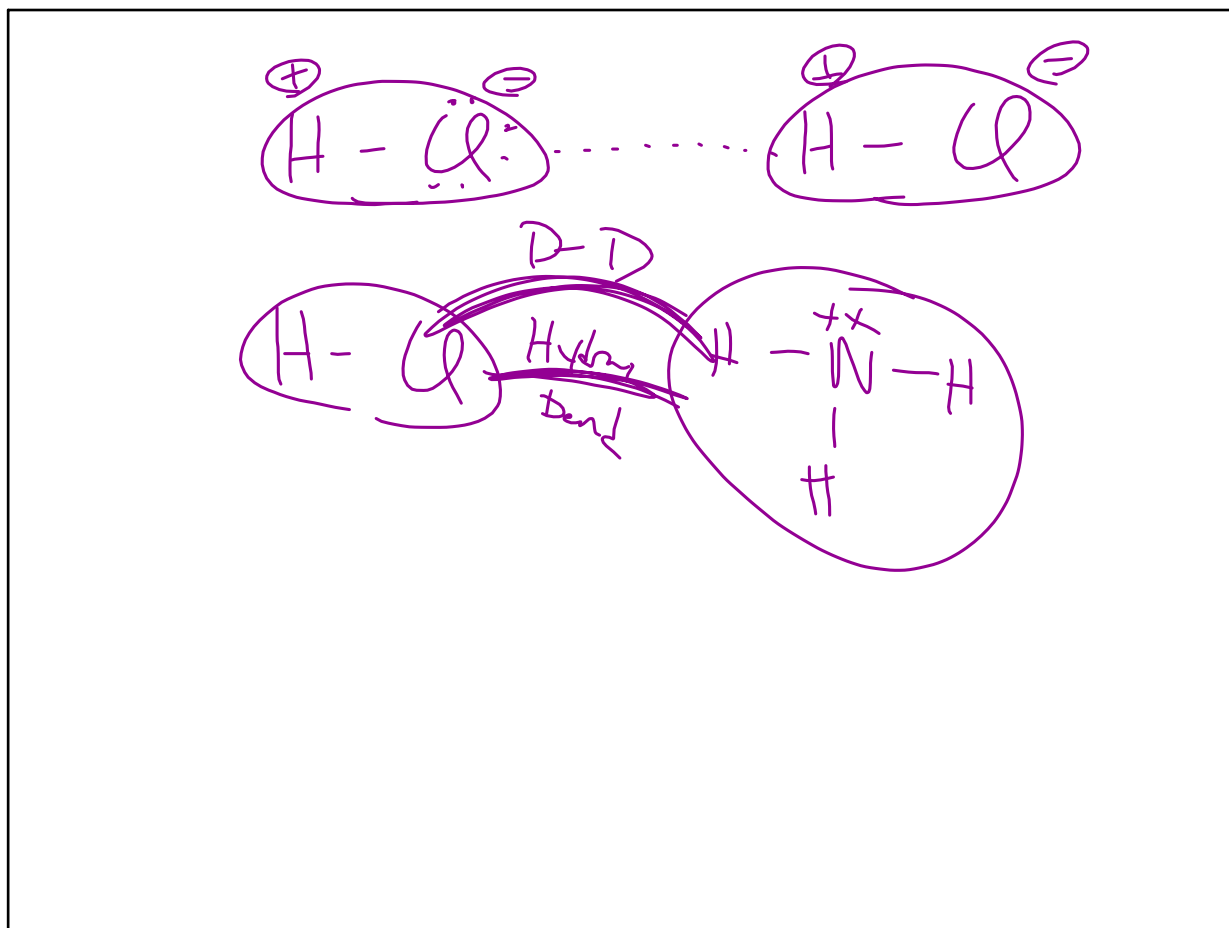
Dec 4-9:10 AM



Dec 4-9:12 AM



Dec 4-9:22 AM



Dec 4-9:39 AM

SOLIDS

High MP / BP → STRONG IMF

① Ionic Solids (NaCl) Ionic Bonding  
 High MP, rough (coarse), Crystal structure

② Molecular Solid (chocolate) covalent bonding  
 Low MP, soft smooth

③ Network Solids (Diamond) Bunch of carbon bonded together.

High MP  
Hard / Sharp

④ Metallic Solids (My car)  
 ↑ MP

Dec 4-9:41 AM

Coordinate Covalent

Lone pair e<sup>-</sup>  
xx

$$\begin{array}{c} \text{H} - \text{N} - \text{H} \\ | \\ \text{H} \end{array}$$

NH<sub>3</sub>

+

$$\text{H}^+$$

H<sup>+</sup>

→

$$\begin{array}{c} \text{H}^+ \\ | \\ \text{H} - \text{N} - \text{H} \\ | \\ \text{H} \end{array}$$

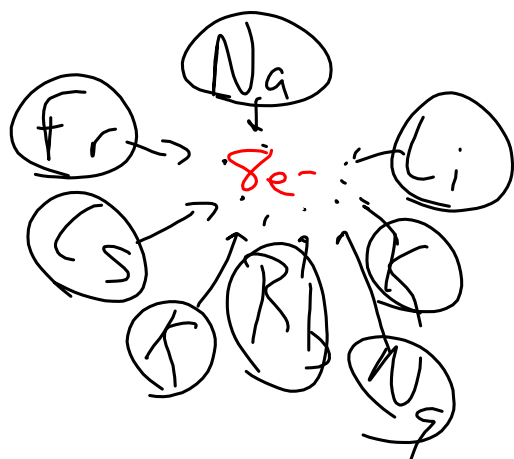
NH<sub>4</sub><sup>+</sup>

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$$\text{H} \cdot$$

Dec 4-9:54 AM

"Metal Bonding" = Metallic Bonding



Pool their e- together  
to complete an octet.

"Sea of mobile e-"

Dec 4-9:57 AM