

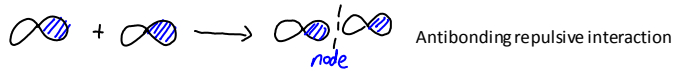
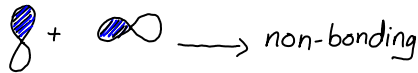
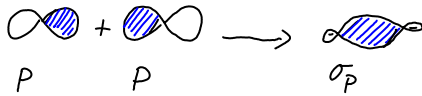
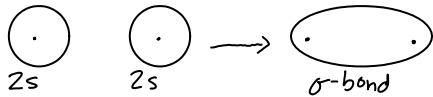
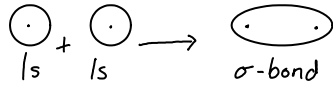
Notes 01/30

Wednesday, January 30, 2008
9:55 AM



Notes 0130

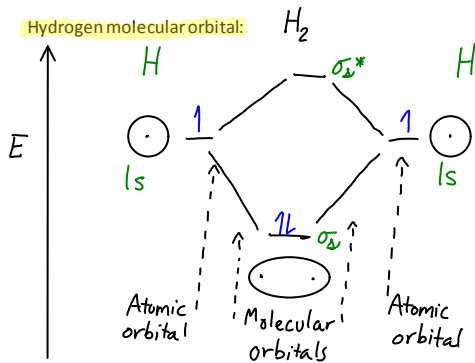
Audio recording started: 10:00 AM Wednesday, January 30, 2008



Types of bonding:

1. Bonding
2. Non-bonding
3. antibonding

Hydrogen molecular orbital:



What is the driving force for the orbitals to combine to form molecular orbitals?

- o Stabilizes the energy of the electrons

Rules for constructing molecular orbitals

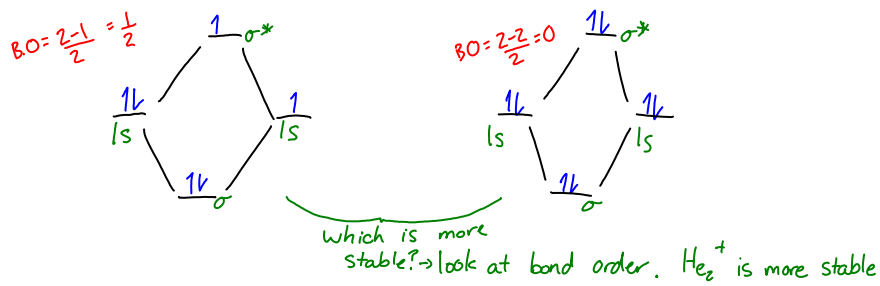
1. Atomic orbitals must have similar energy
2. Must have similar size orbitals
3. Orbitals must be directed toward each other.

He₂⁺ Molecular Orbital:

3e⁻

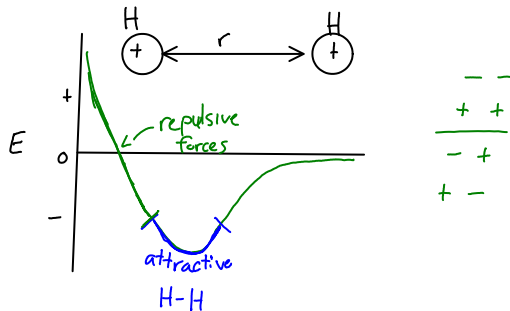
He₂ Molecular Orbital:

4e⁻

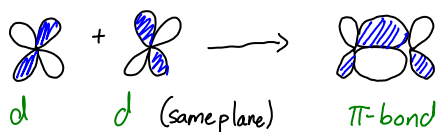
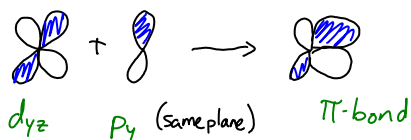
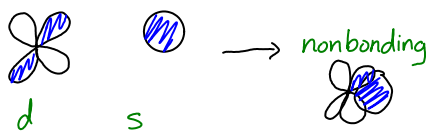
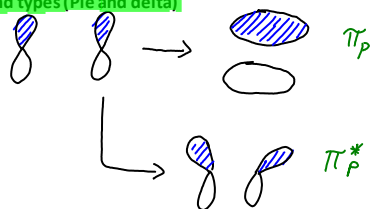
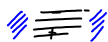


Bond Order: $[(\# \text{ of } e^- \text{ in bonding orbitals}) - (\# \text{ of } e^- \text{ in antibonding orbitals})] / 2$

Potential Energy Diagram:



Other Bond types (Pi and delta)



Parallel d orbitals

