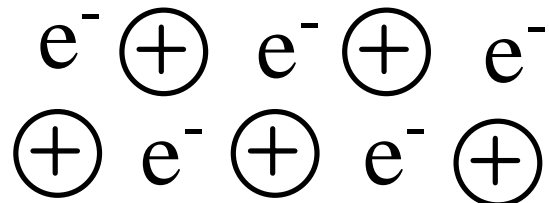


Metallic Bonding

What is a metallic bond ?

- Occurs when both atoms have low ionization energies and low electronegativities and will lose electrons easily (i.e. 2 metals)
- In metallic bonding, positive metal ions are arranged with valence electrons delocalized around them.
- Since the electrons are delocalized, they are mobile and able to move throughout the metal structure.



Properties of Metallic Compounds

1. Malleable and ductile because atoms are not restricted to one position by a fixed bond and the ions can roll past each other.
2. Good conductors of heat and electricity because the electrons are mobile and can transmit energy rapidly.
3. Shiny because when light strikes a metal, the valence electrons absorb energy, oscillate at the same frequency as the incident light (incoming light) and then emit light as a reflection of the original light.

4. Solids at room temperature (except mercury) due to the strong bonds (intermolecular and intramolecular forces are the same).
5. They exhibit the photoelectric effect which is electron emission caused by heat or light. This occurs when the frequency and therefore the energy of light striking a metal is sufficient to overcome the attractive forces and an electron escapes the metal decreasing the energy of the photon.

