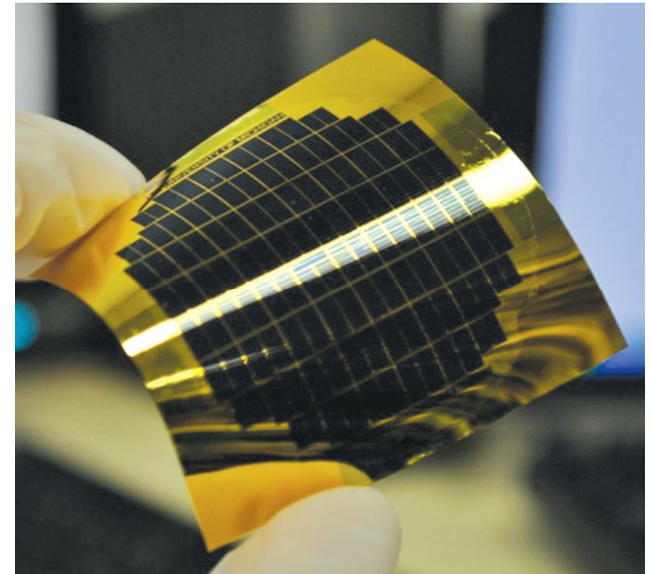
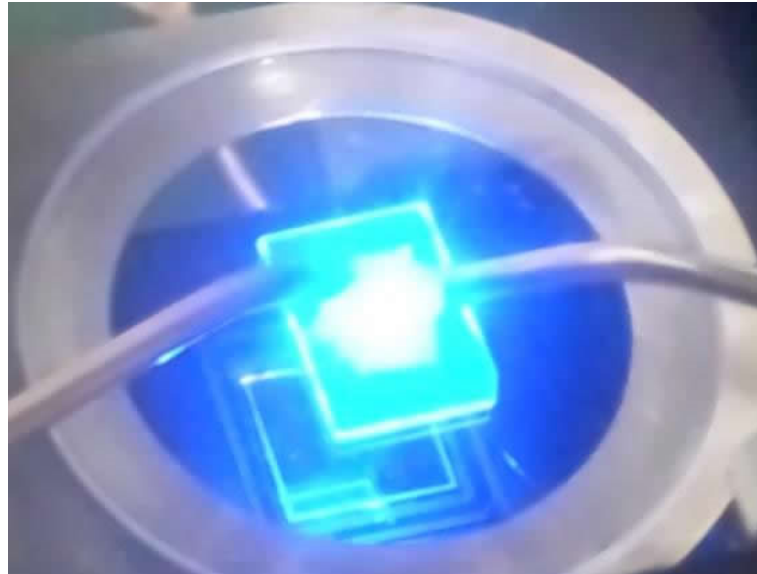
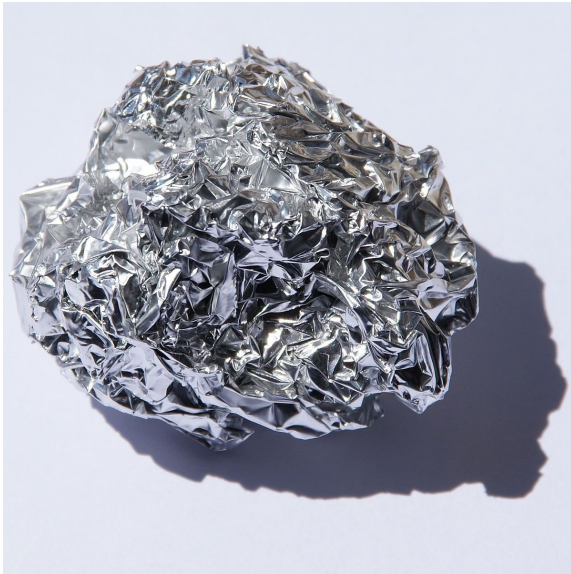
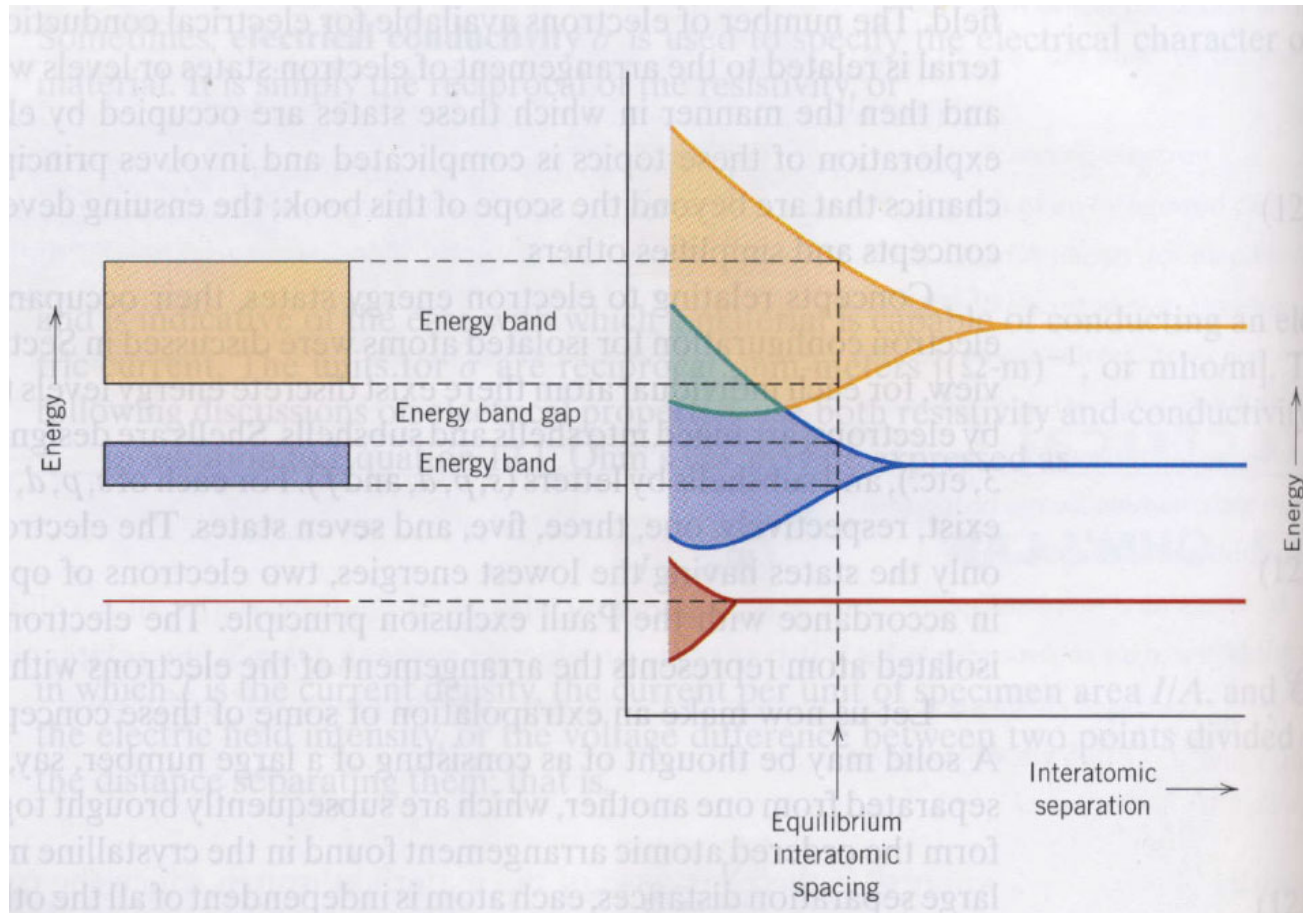
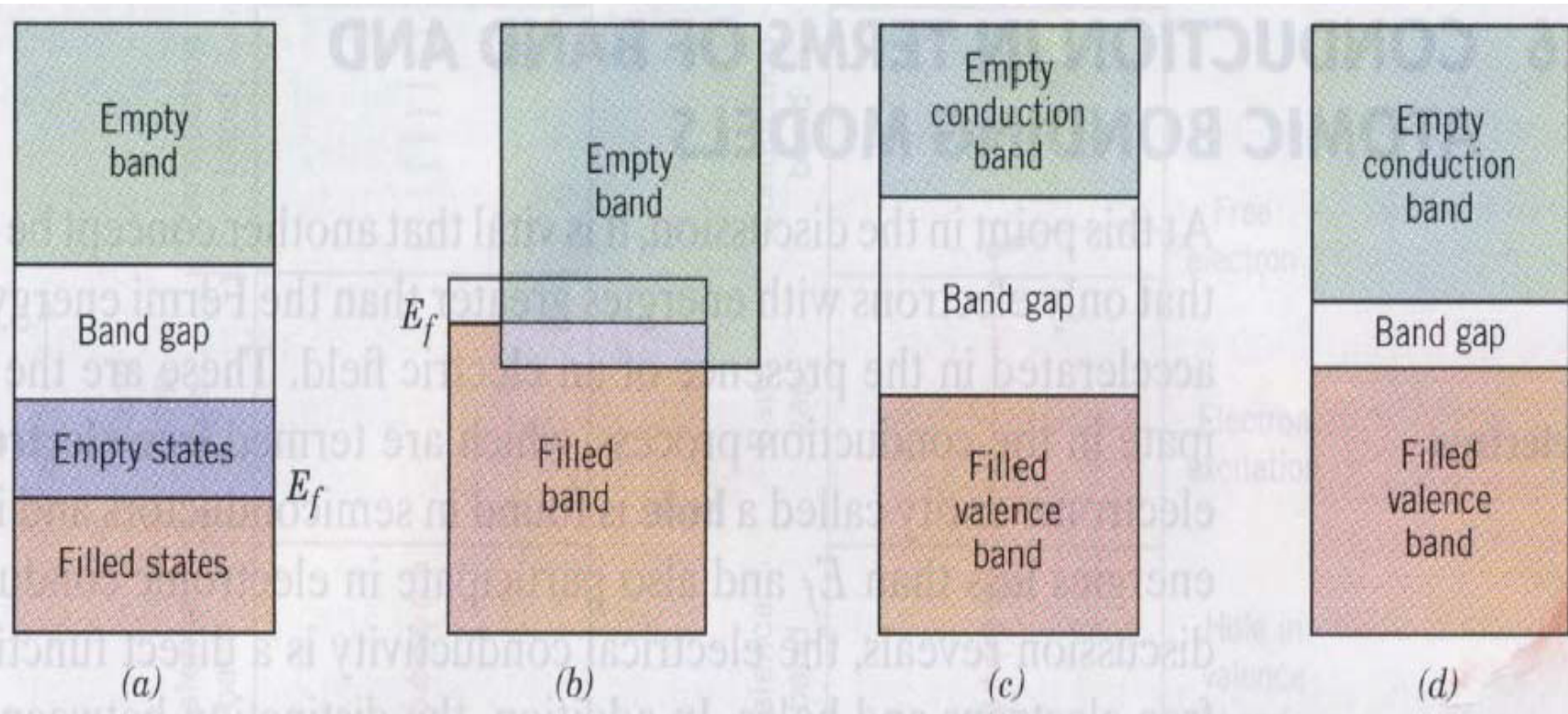


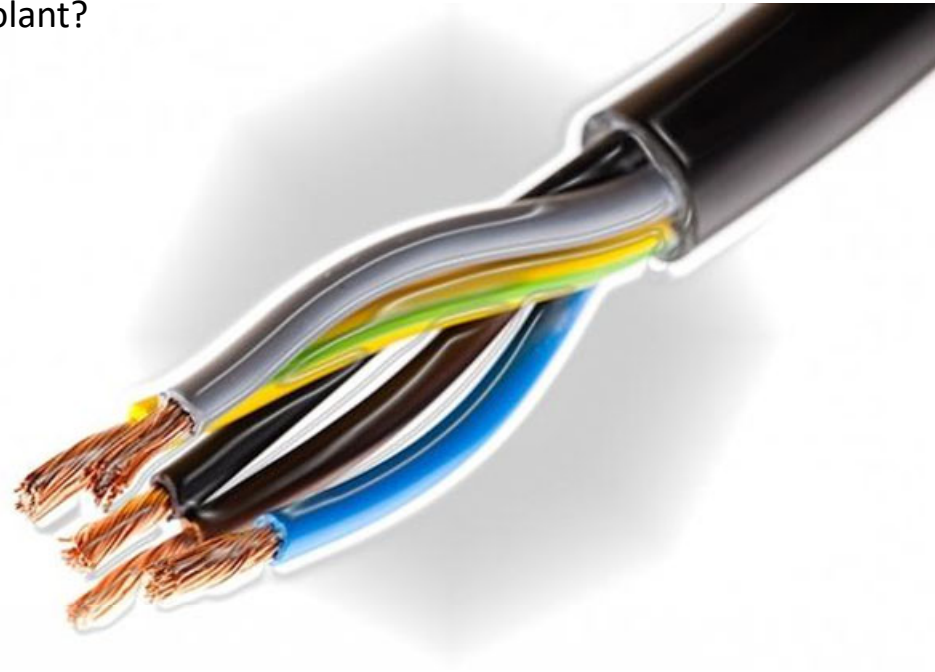
**Notion des bandes électroniques pour comprendre les propriétés fonctionnelles:
lien entre les propriétés électriques et optiques**



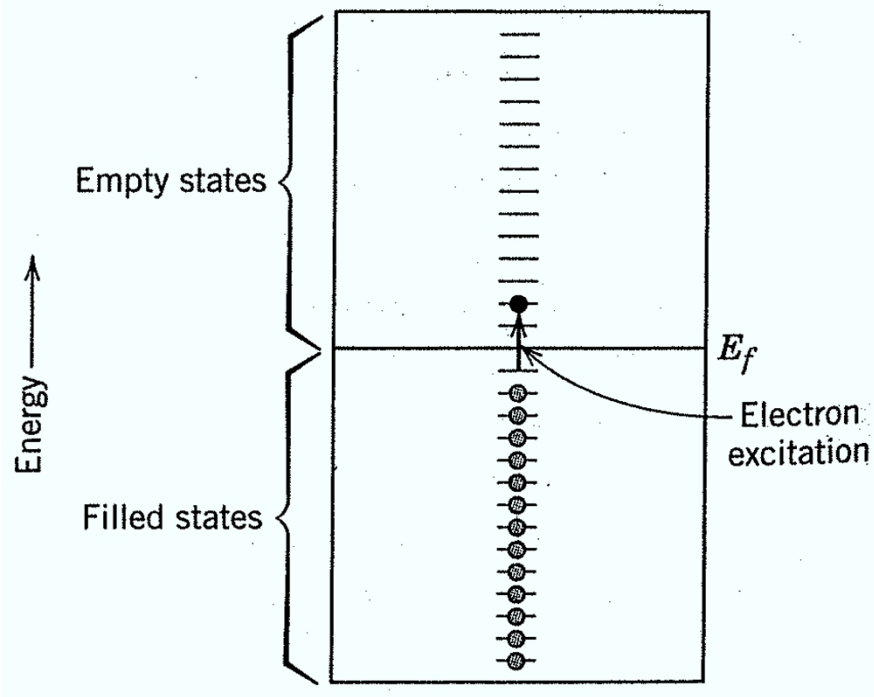




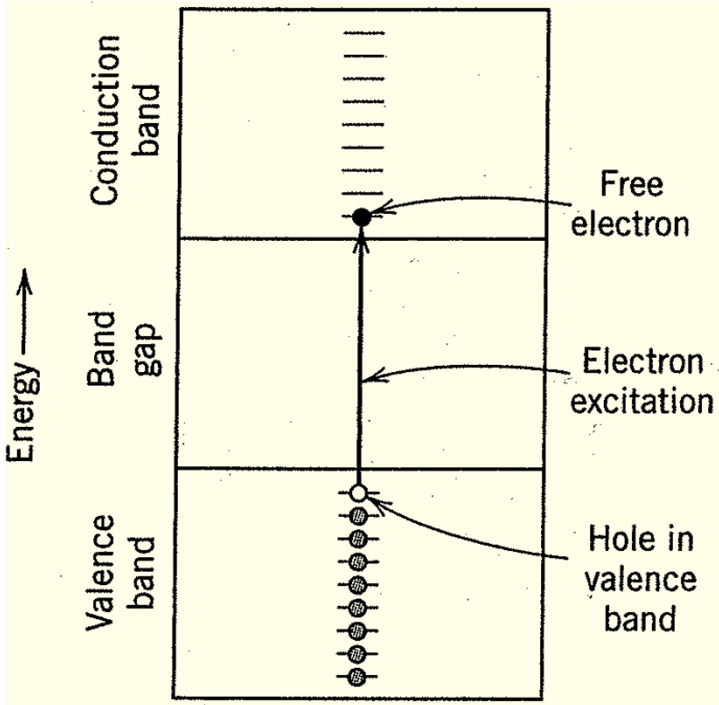
Matériau conducteur, isolant?
Transparent, opaque?



Différence entre conducteurs et isolants

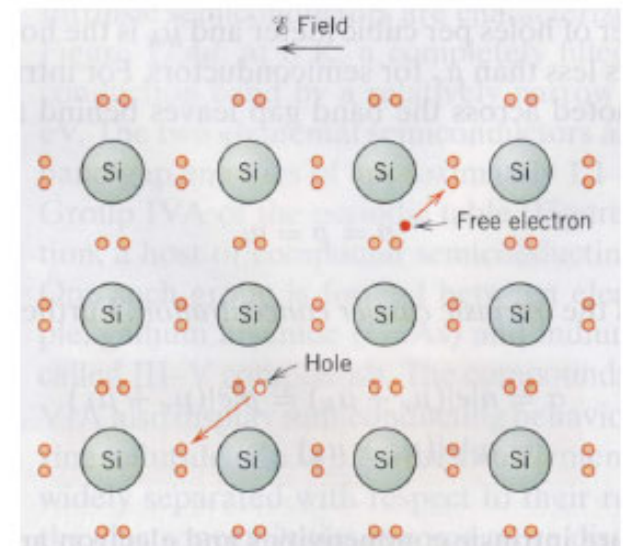
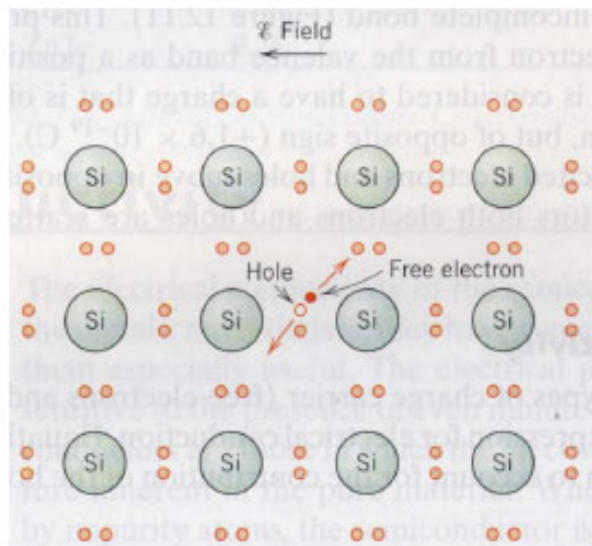
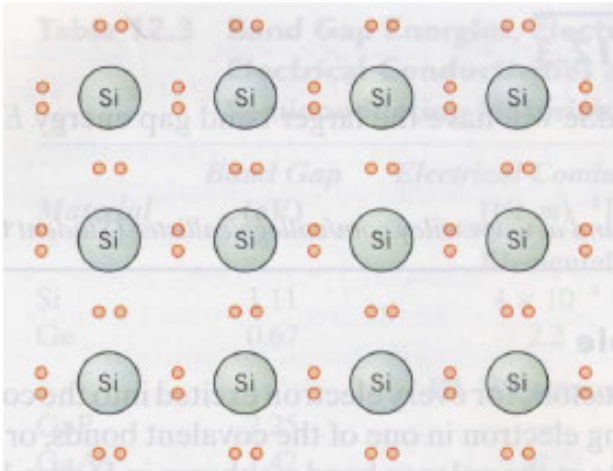


Conducteur



Isolant

Concept de trou (électronique)

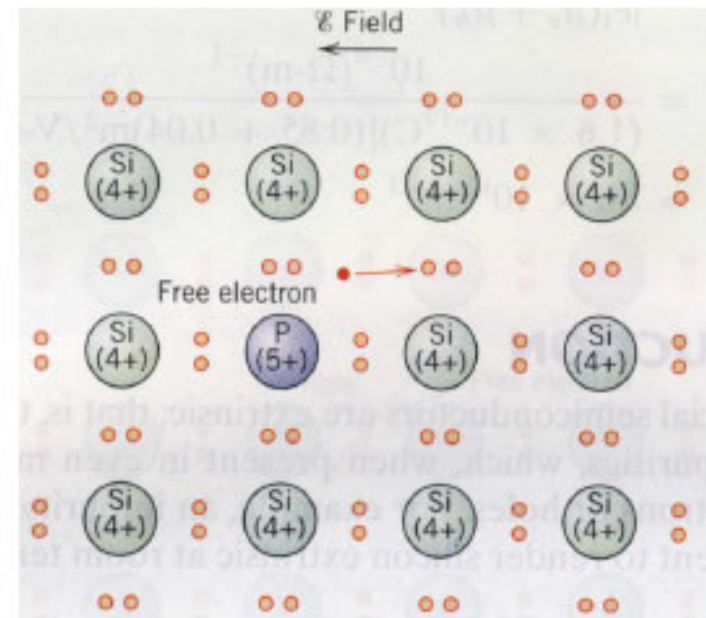
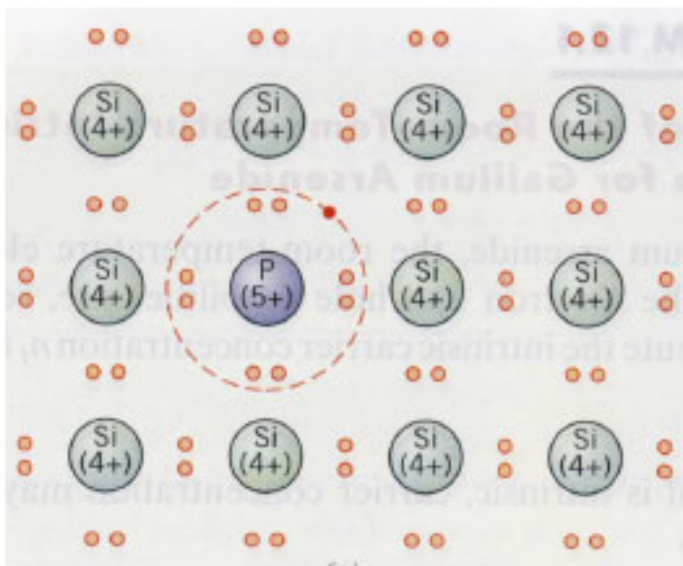


$$\sigma = ne\mu_e + pe\mu_h$$

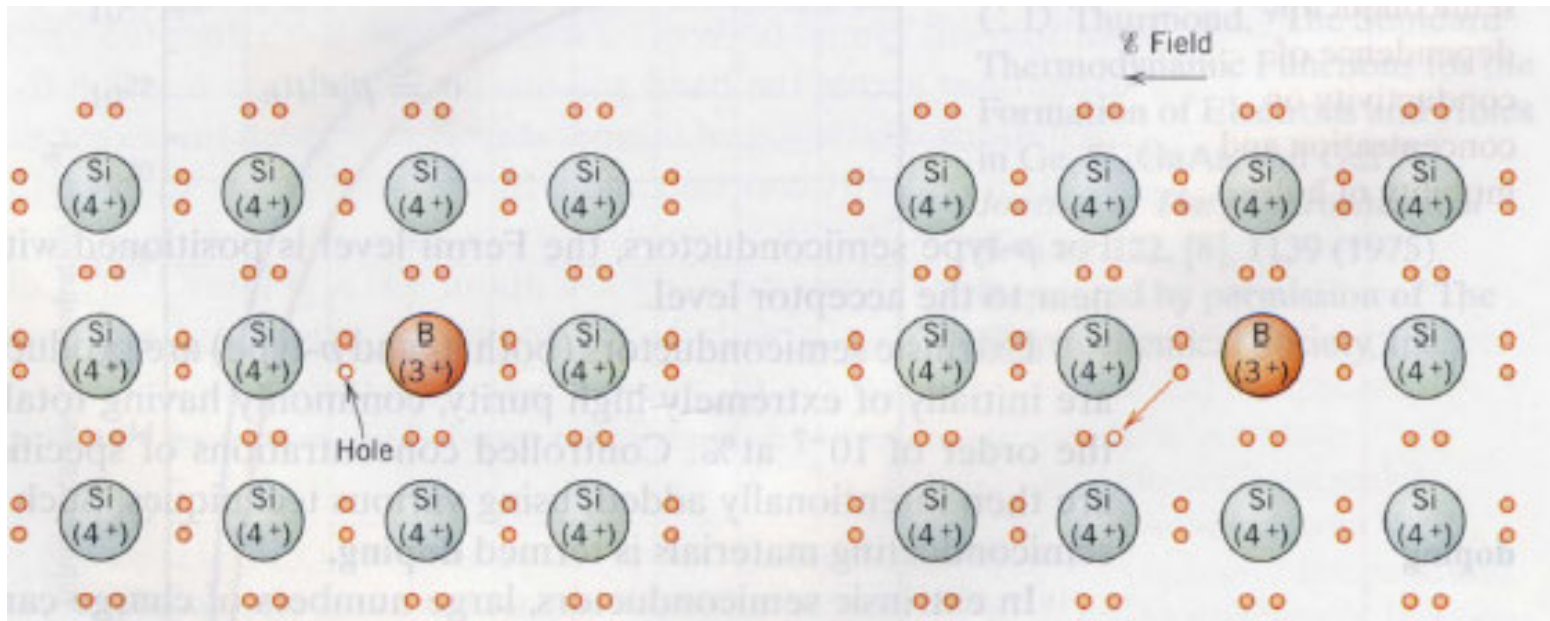
$$\sigma = ne(\mu_e + \mu_h)$$

pour un semiconducteur intrinsèque

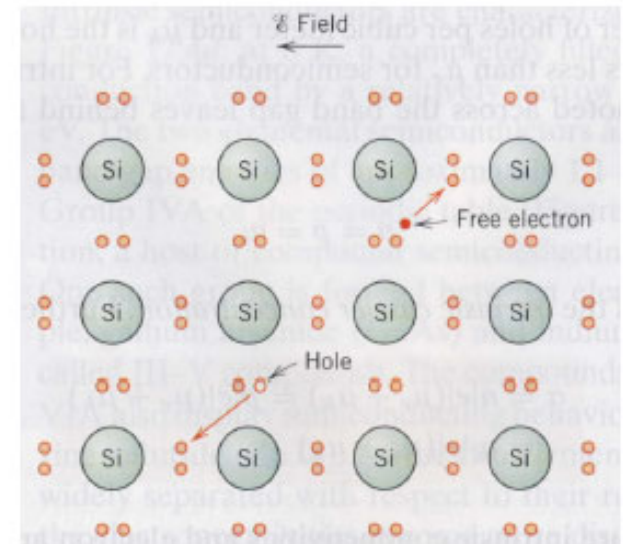
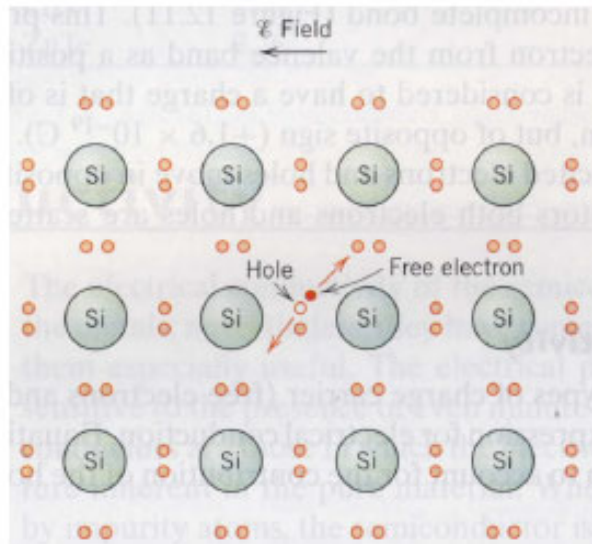
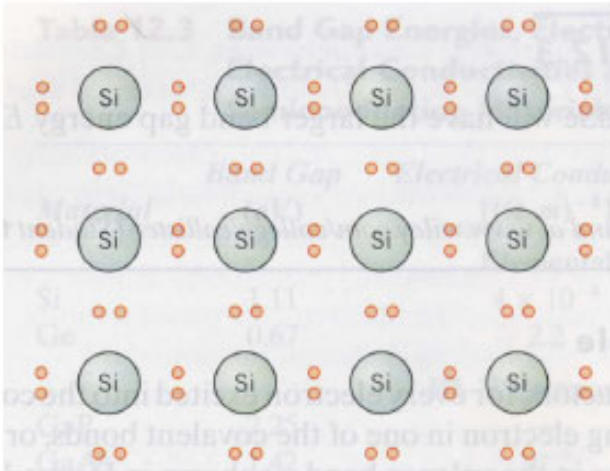
Dopage type n (augmentation de la densité d'électrons)



Dopage type p (augmentation de la densité de trous)



Concept de trou (électronique)



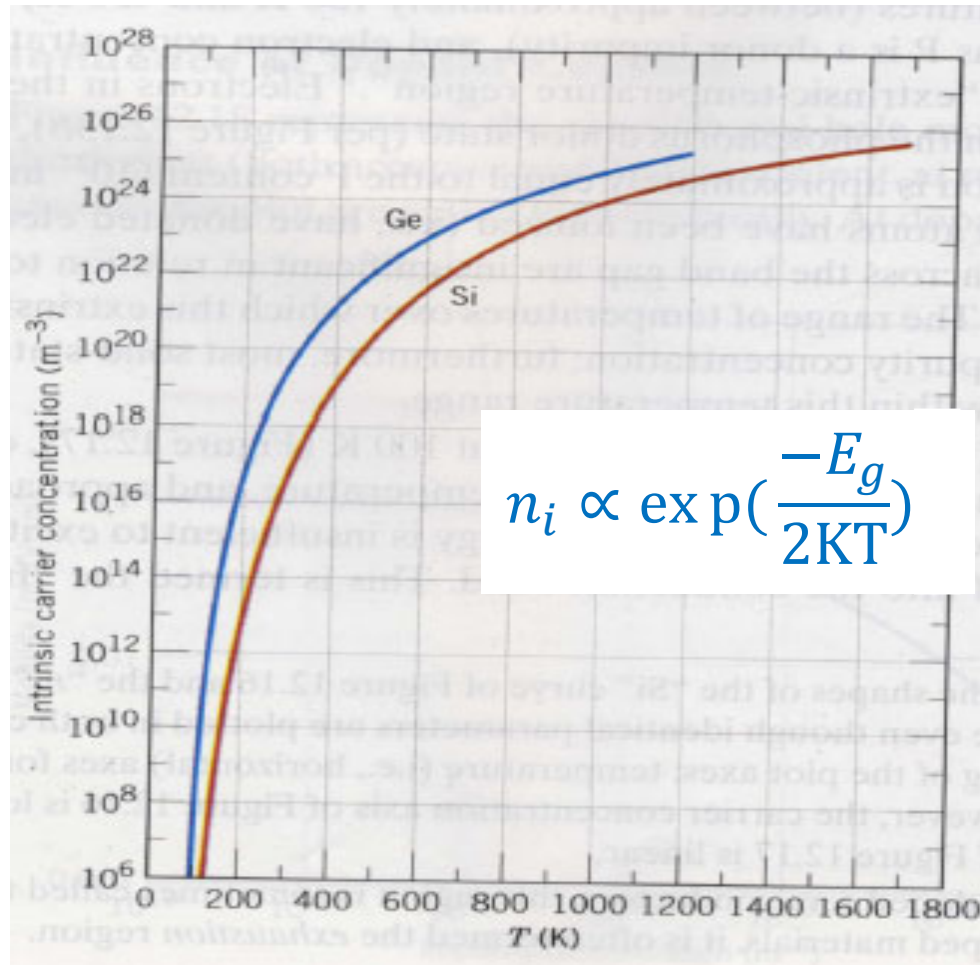
$$\sigma = ne\mu_e + pe\mu_h$$

$$\sigma = ne(\mu_e + \mu_h)$$

pour un semiconducteur intrinsèque

$$n_i \propto \exp\left(\frac{-E_g}{2KT}\right)$$

Dépendance en température



Dépendance en température quand le matériau est dopé

