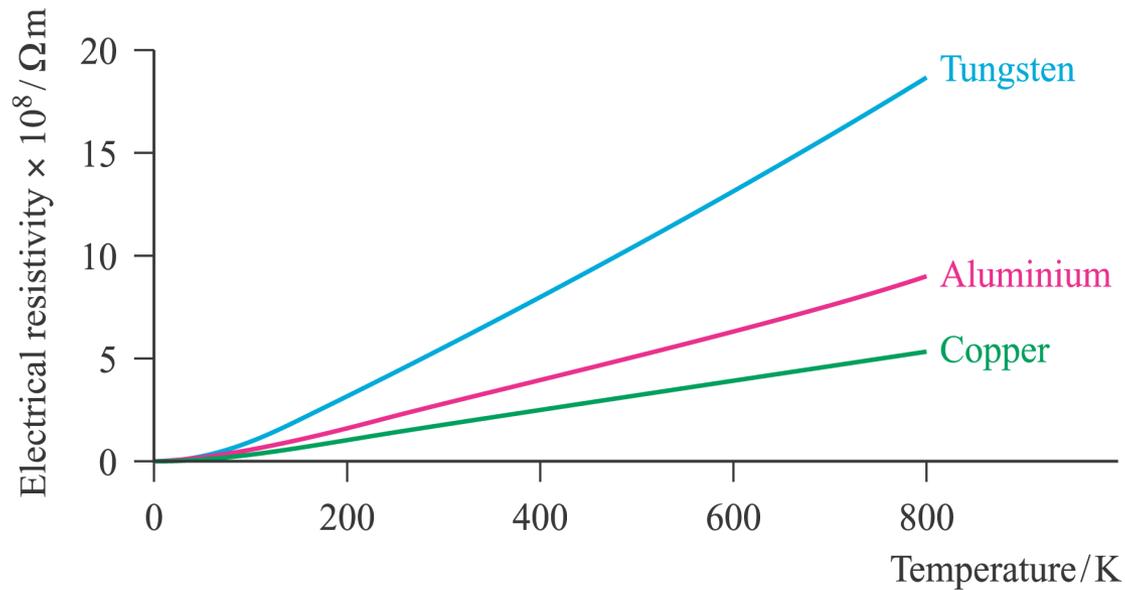
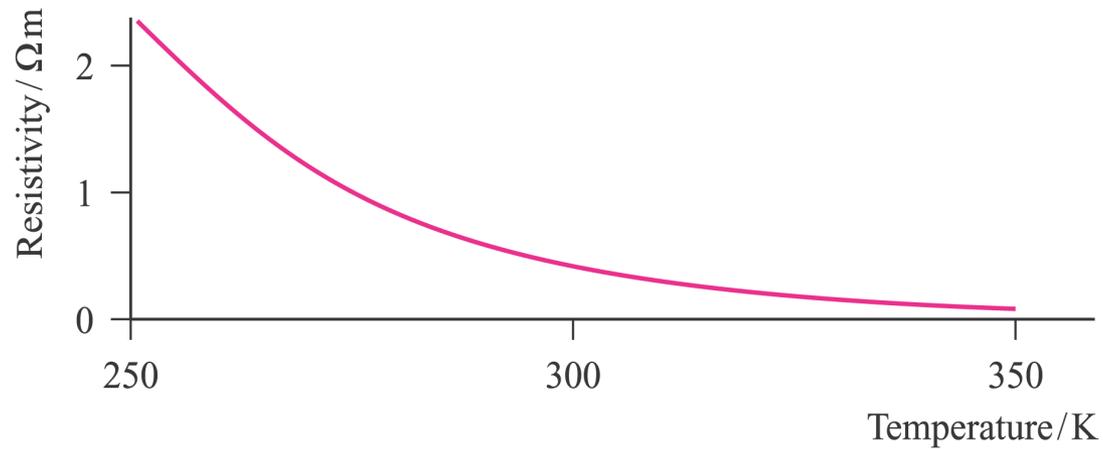
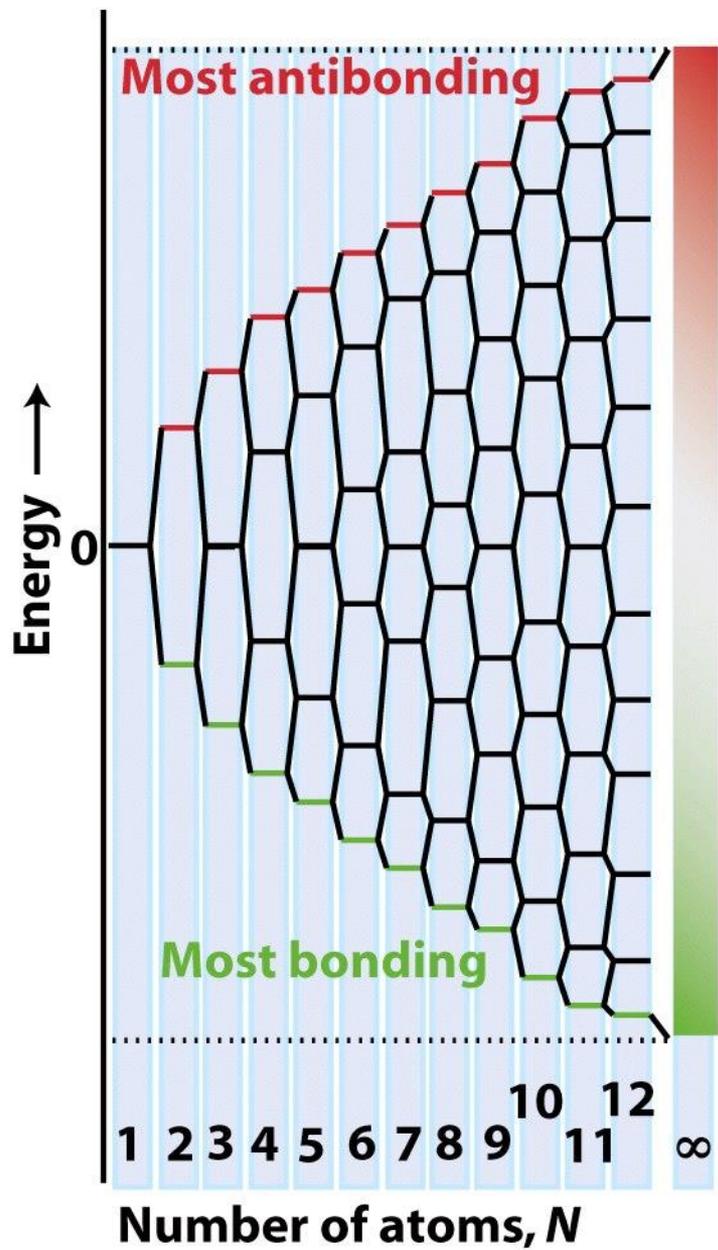


Resistività di alcuni metalli in funzione della temperatura



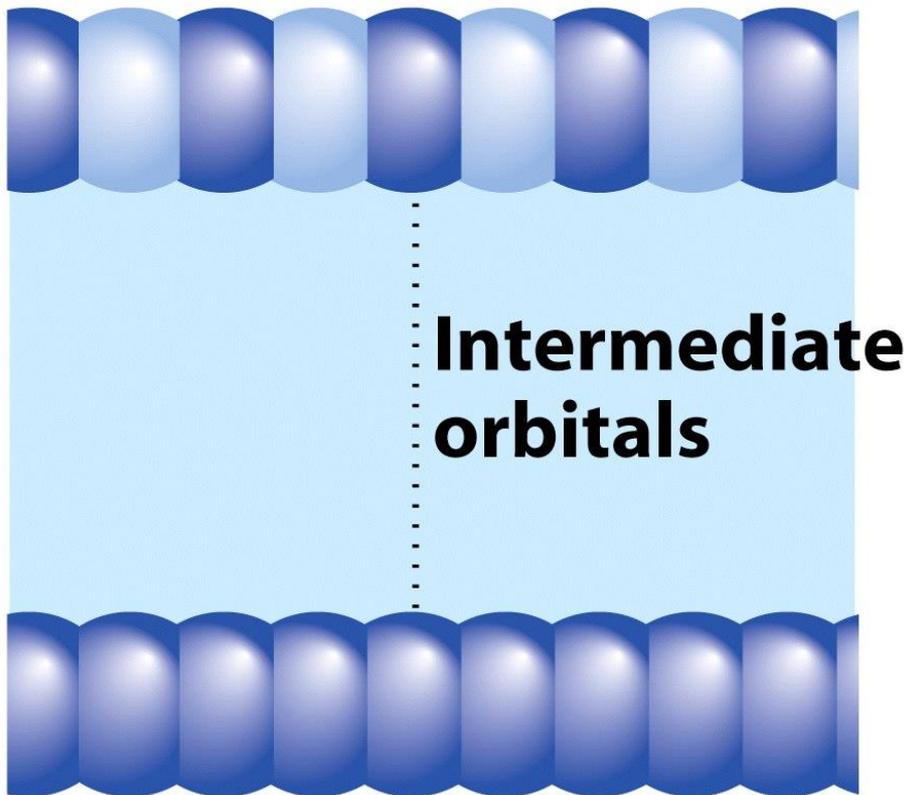
Resistività del semiconduttore Ge in funzione della temperatura





Banda s

Most antibonding

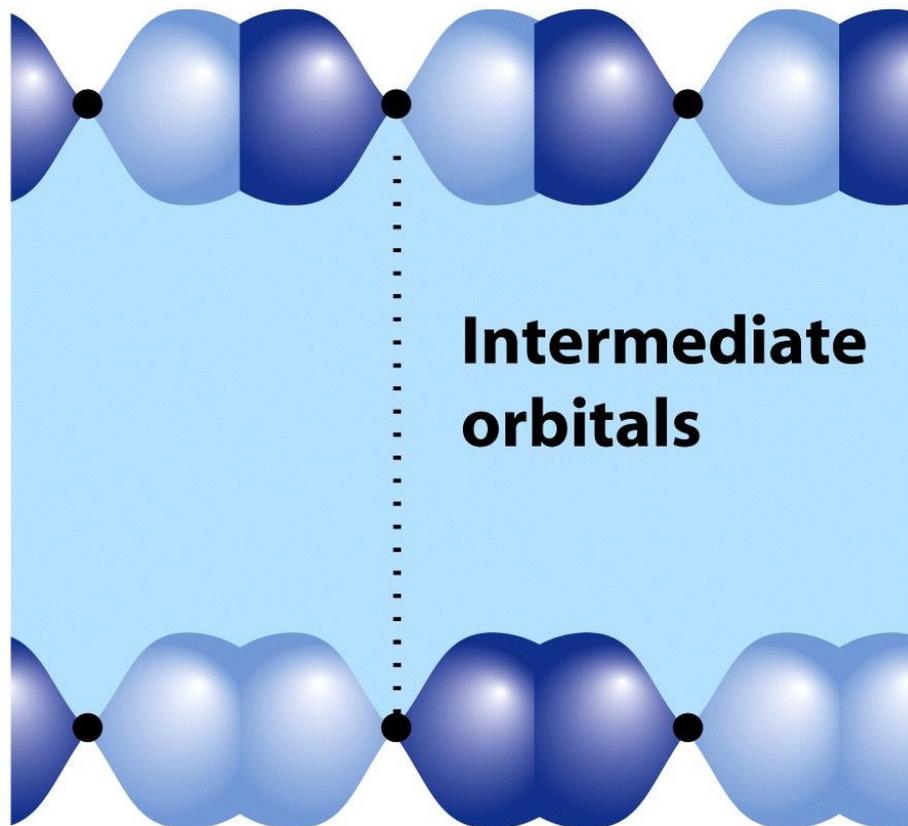


Intermediate orbitals

Most bonding

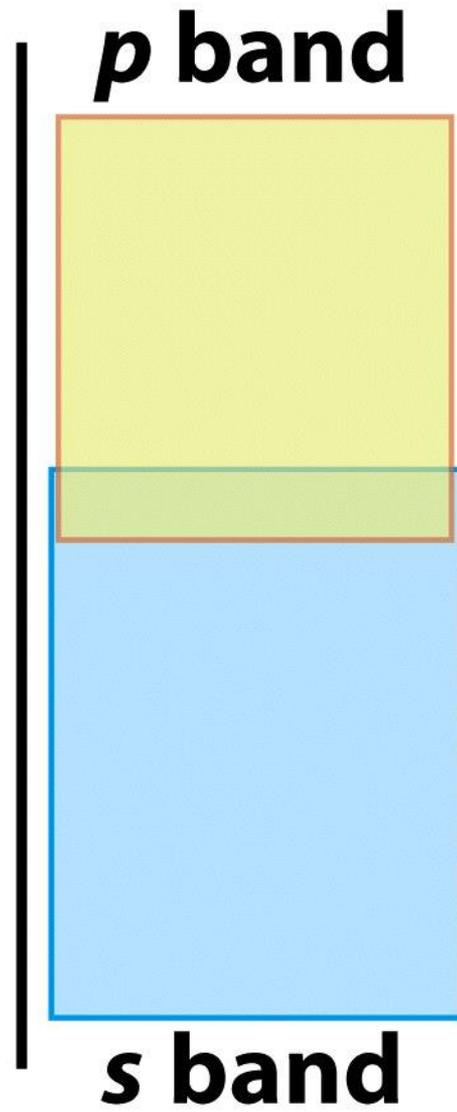
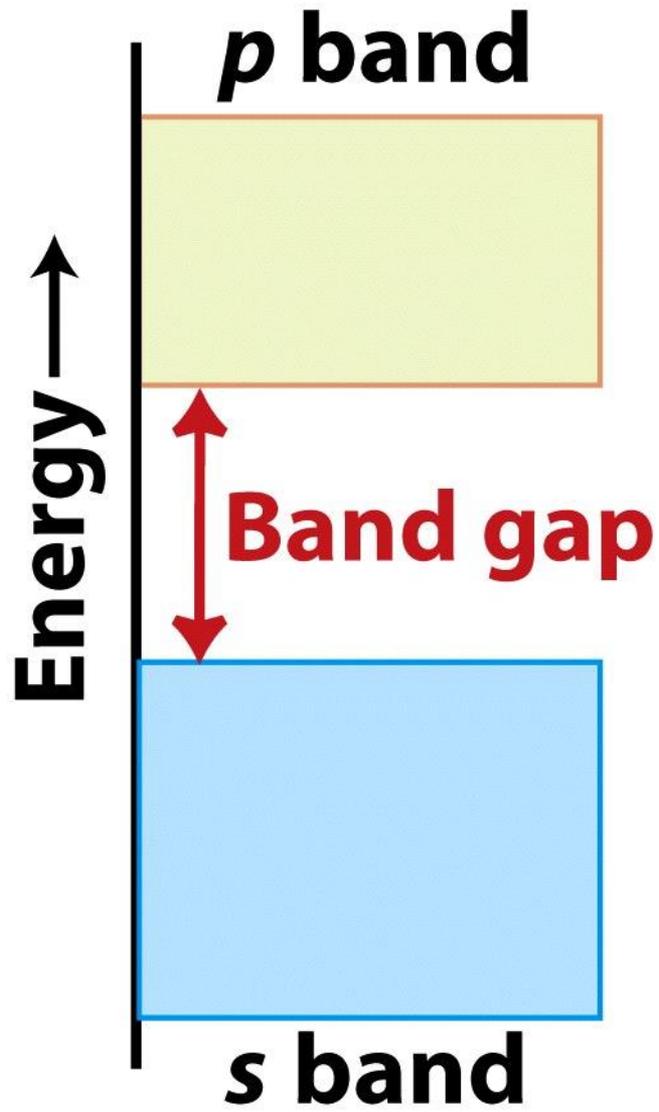
Banda p

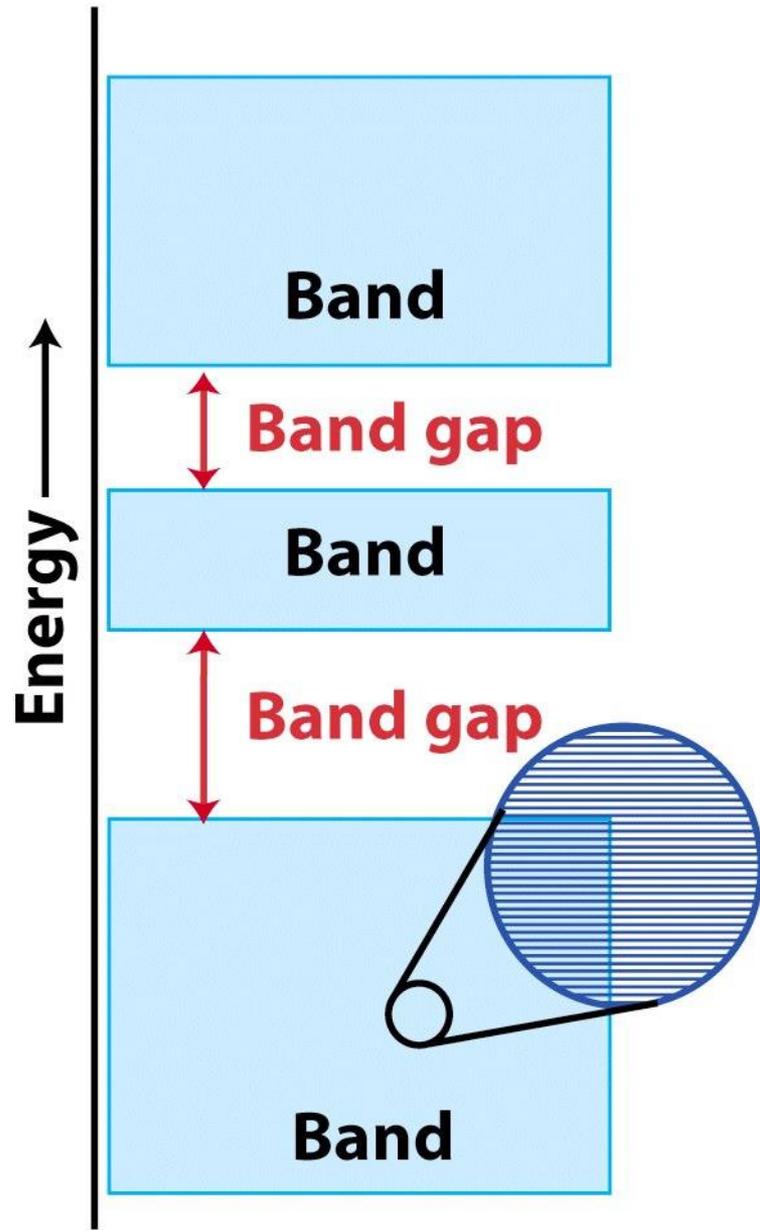
Most antibonding



Intermediate orbitals

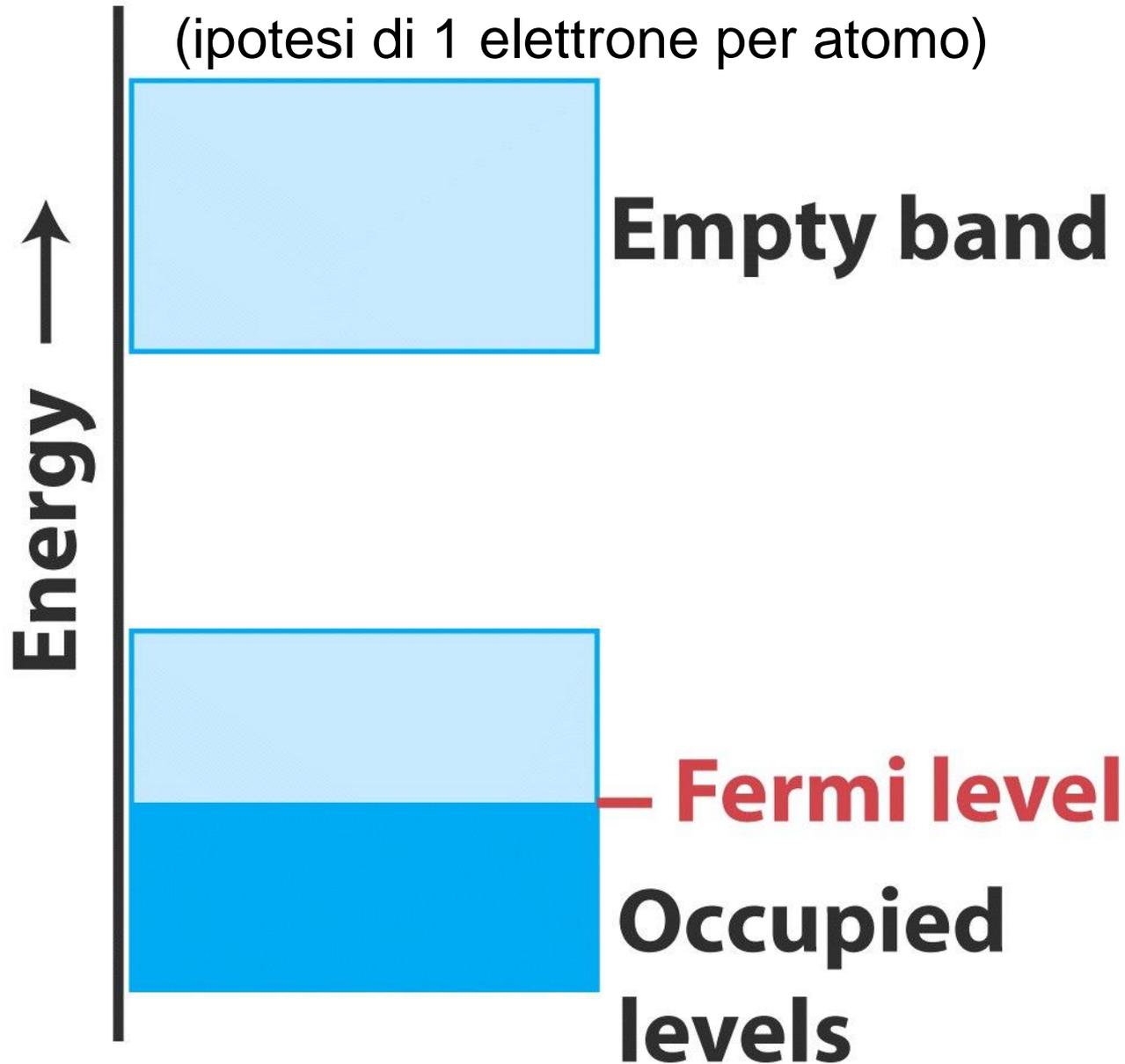
Most bonding



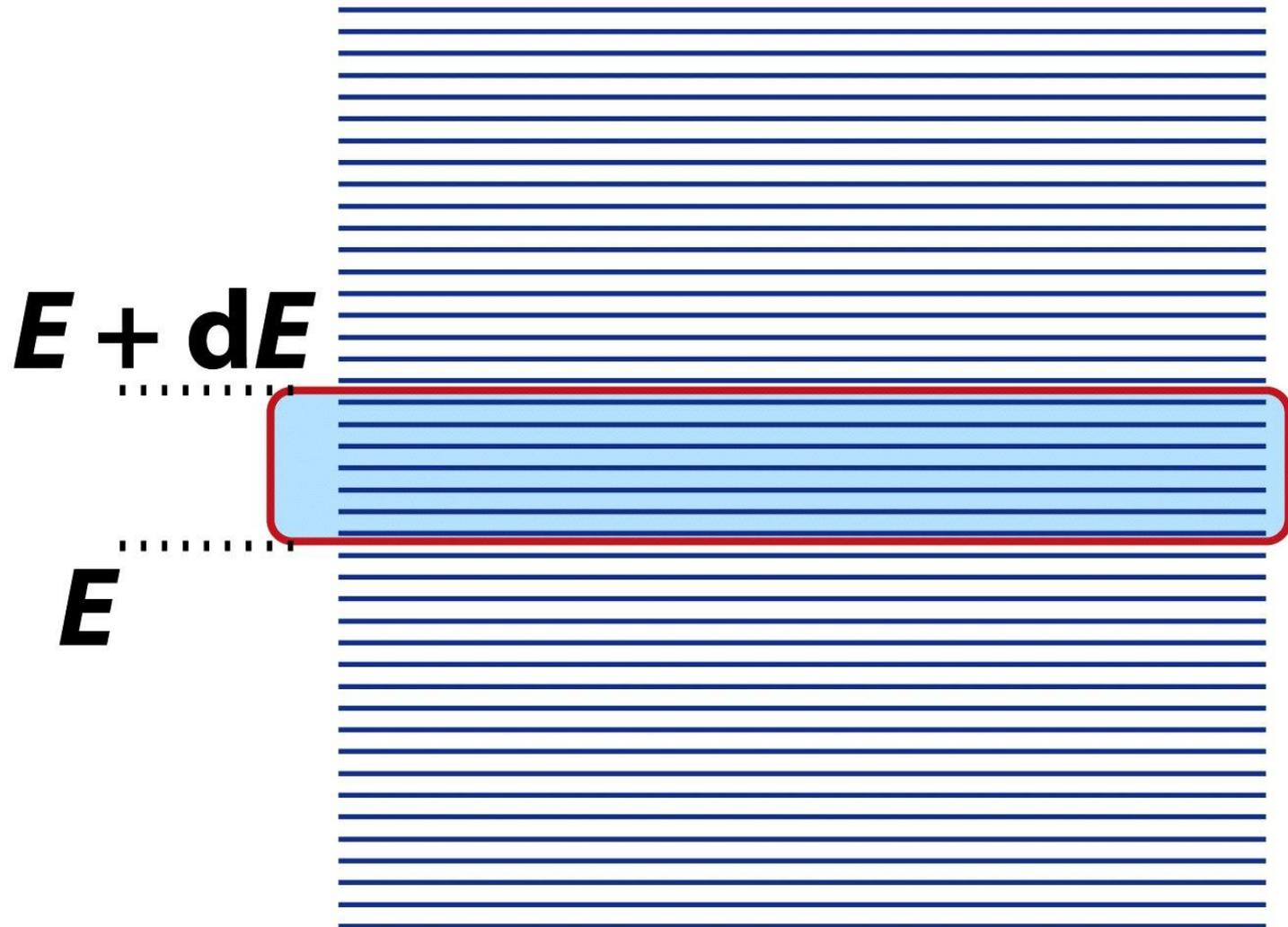


Solido conduttore metallico

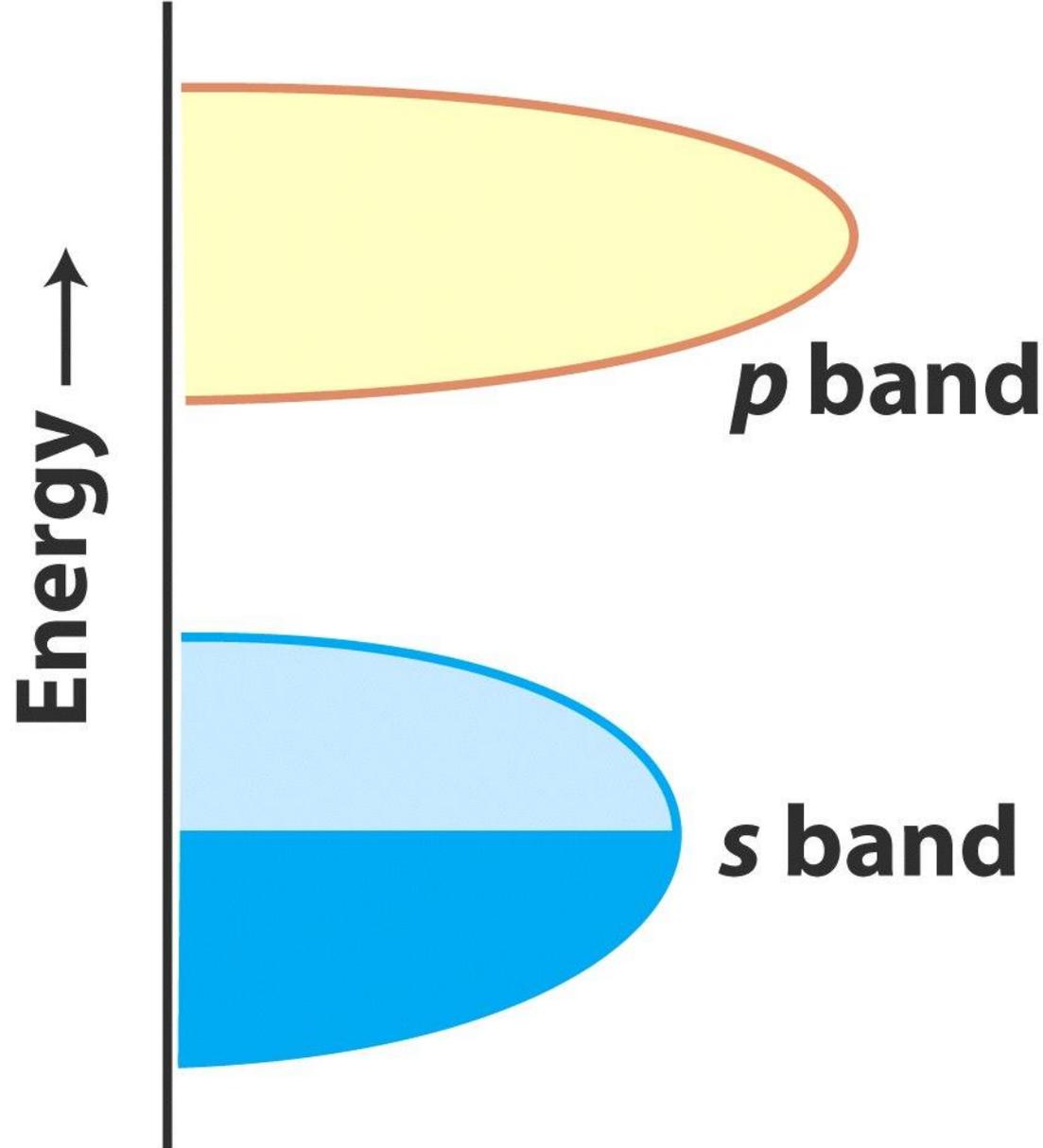
(ipotesi di 1 elettrone per atomo)



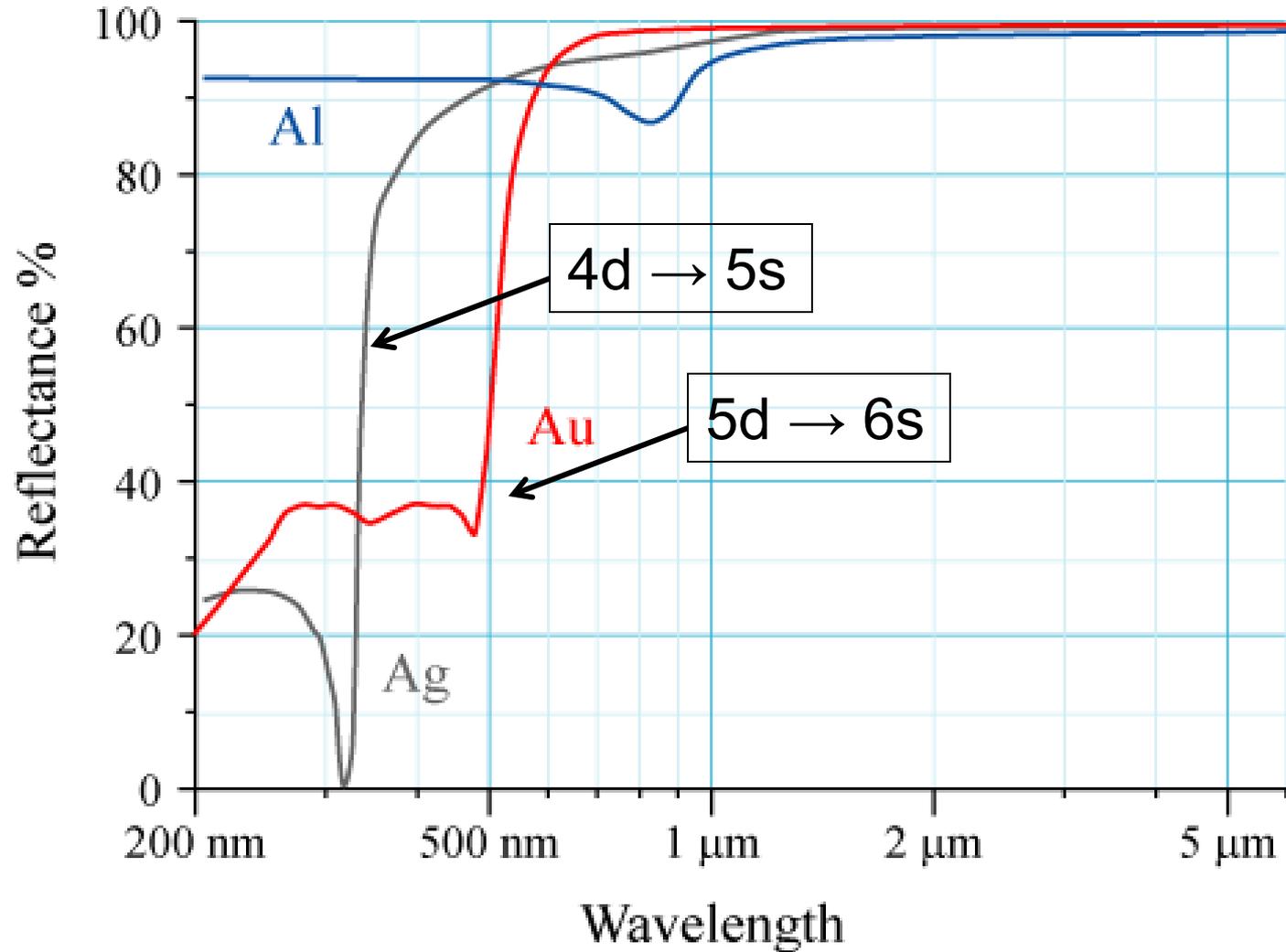
Densità degli stati elettronici



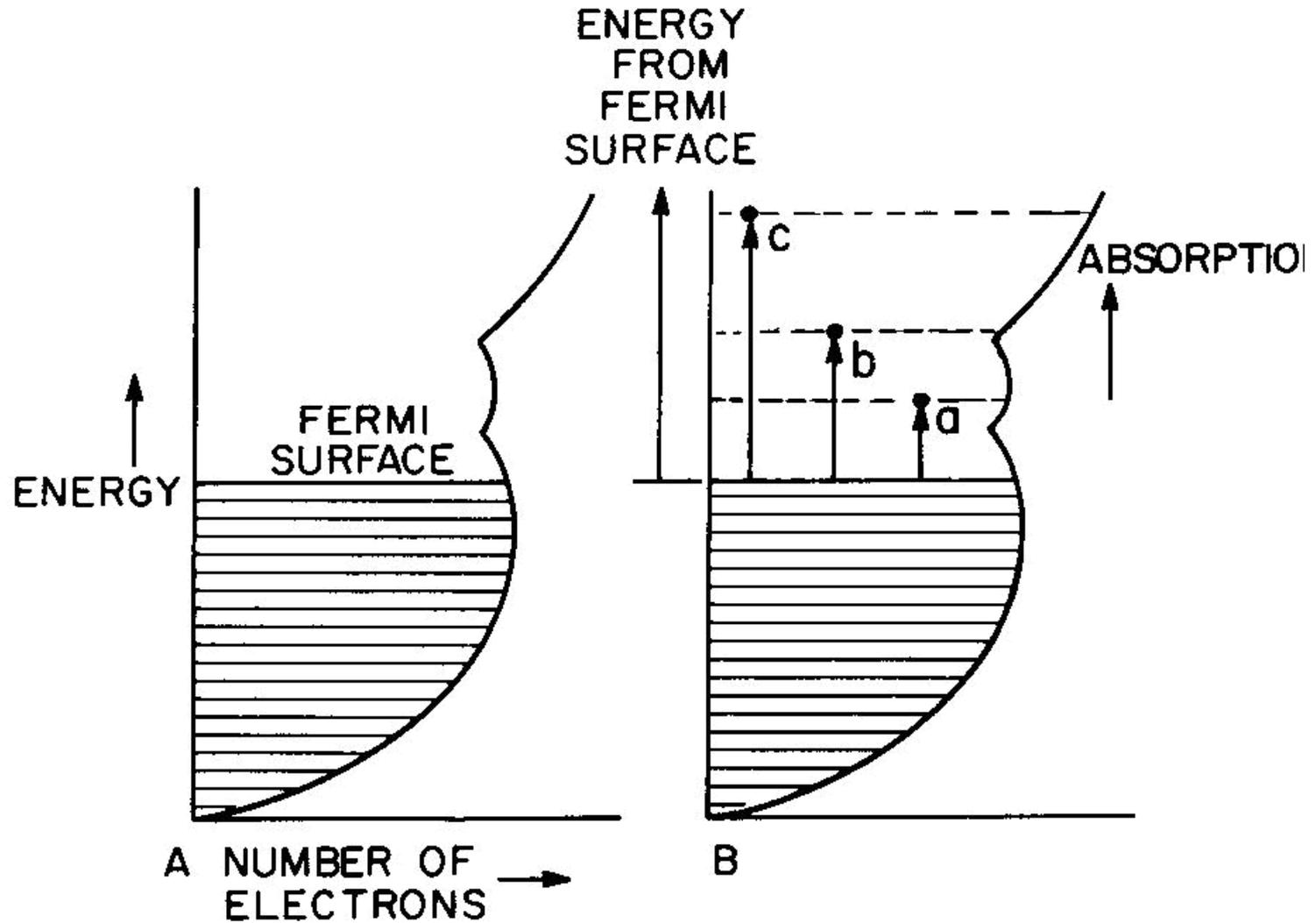
Tipiche densità di stati in un metallo



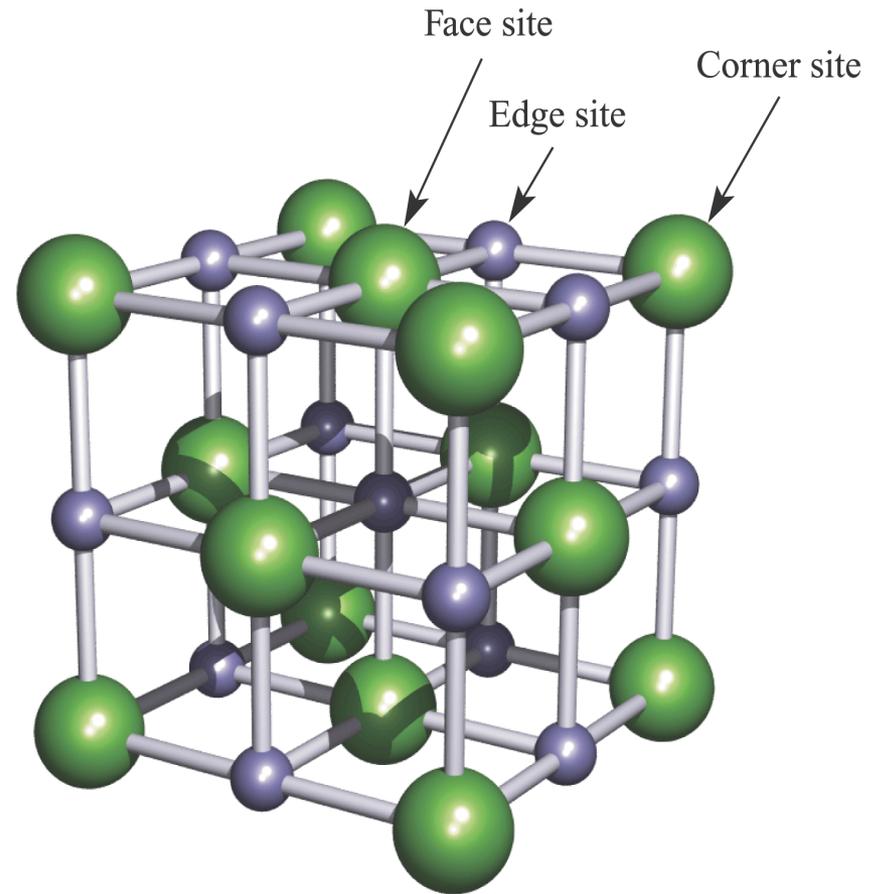
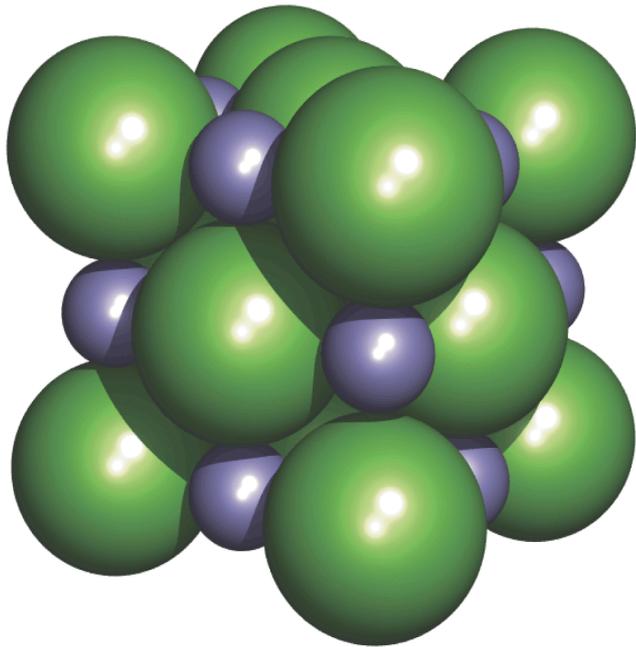
Effetti relativistici e colore dell'oro



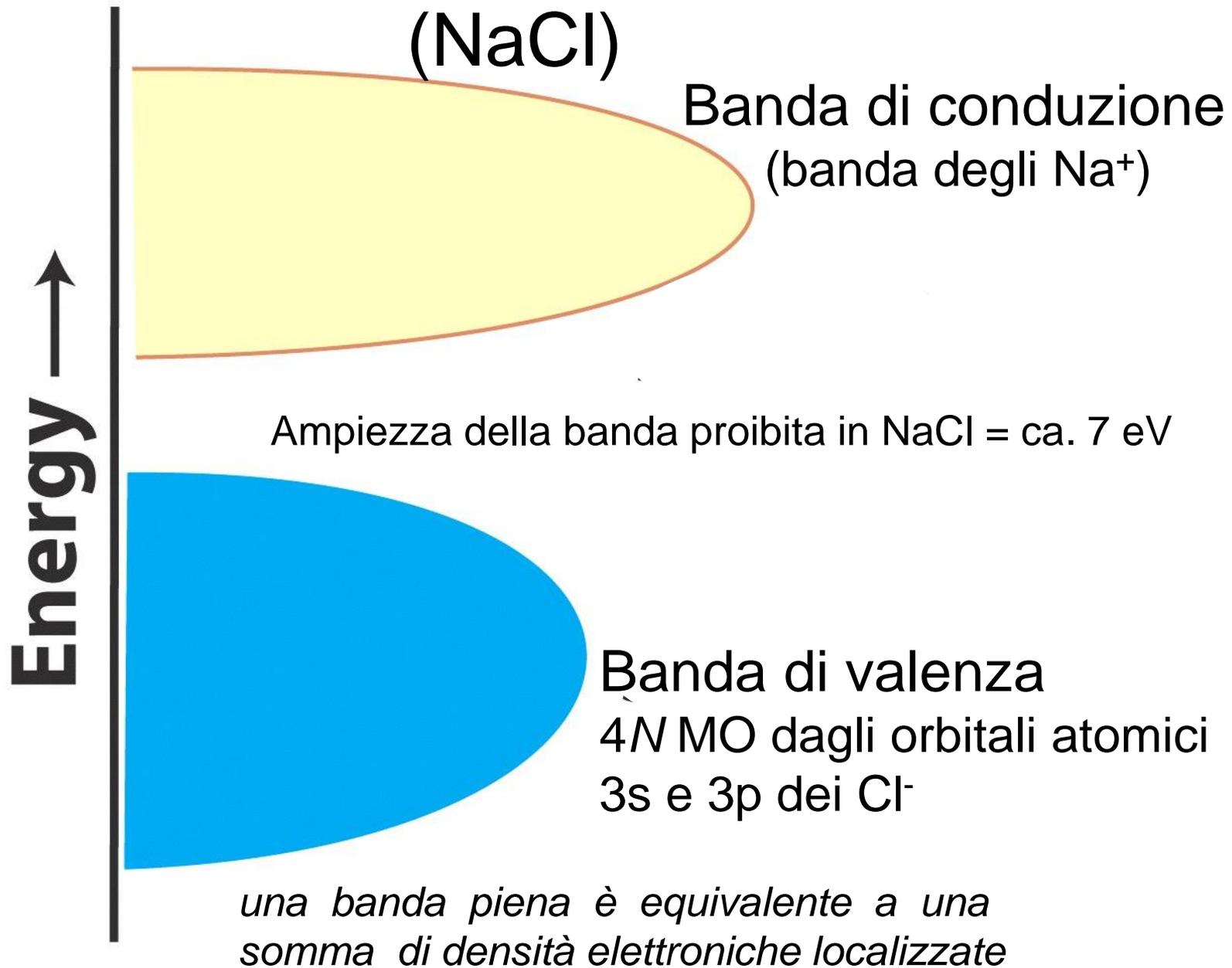
Colore dei metalli



NaCl



Tipiche densità di stati in un isolante

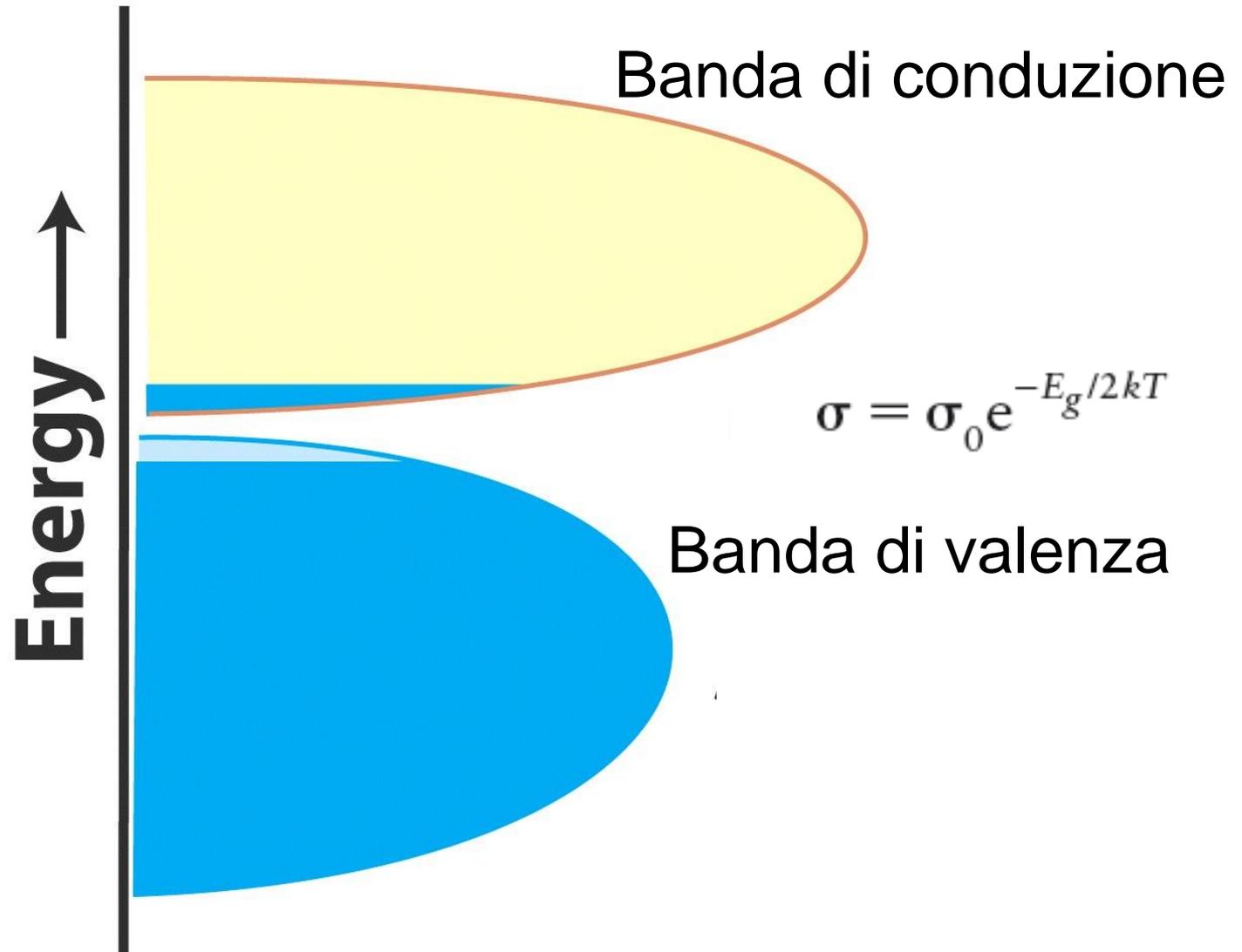


Alcune ampiezze di bande proibite

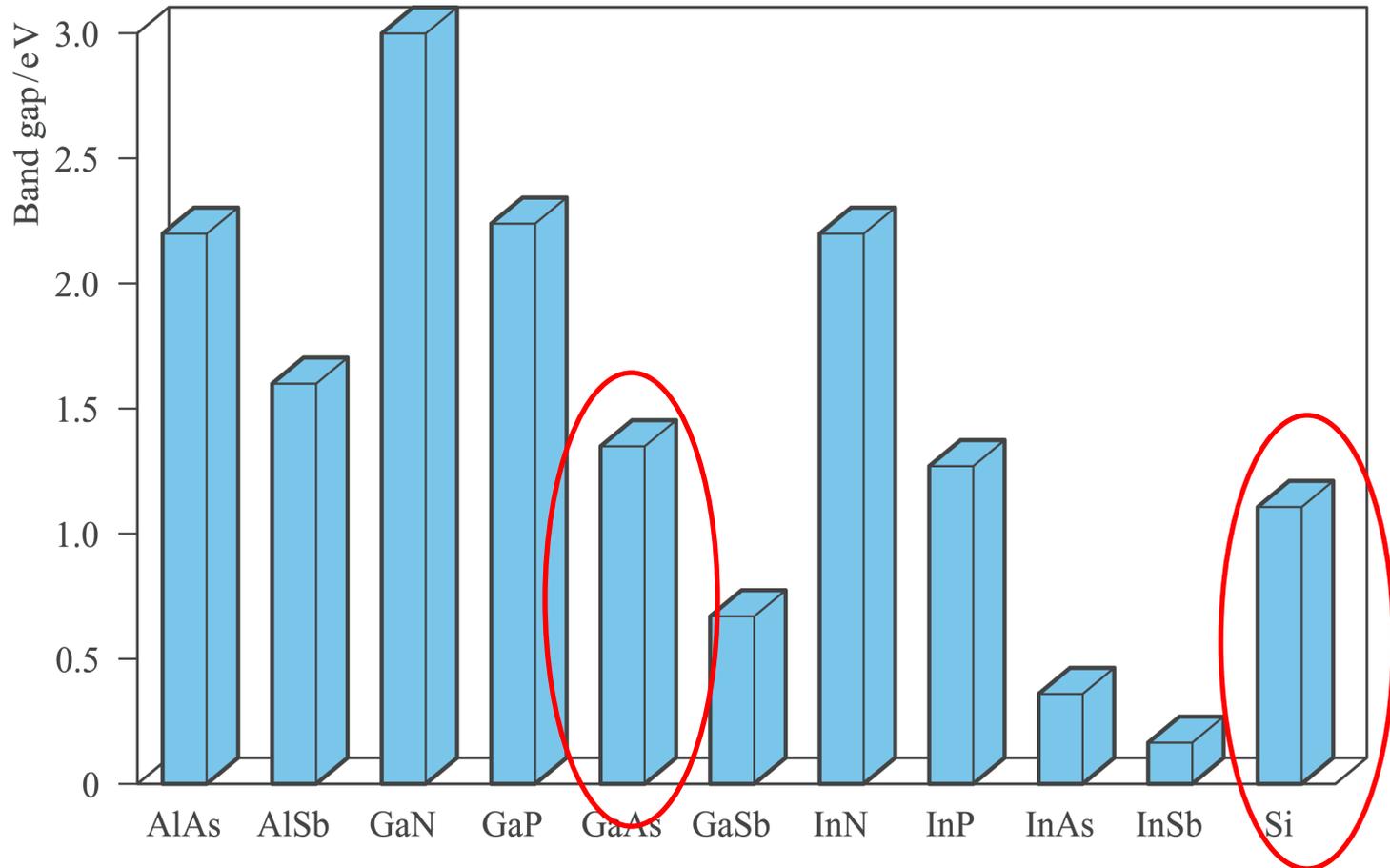
Material	E_g /eV
Carbon (diamond)	5.47
Silicon carbide	3.00
Silicon	1.11
Germanium	0.66
Gallium arsenide	1.35
Indium arsenide	0.36

Semiconduttore intrinseco:

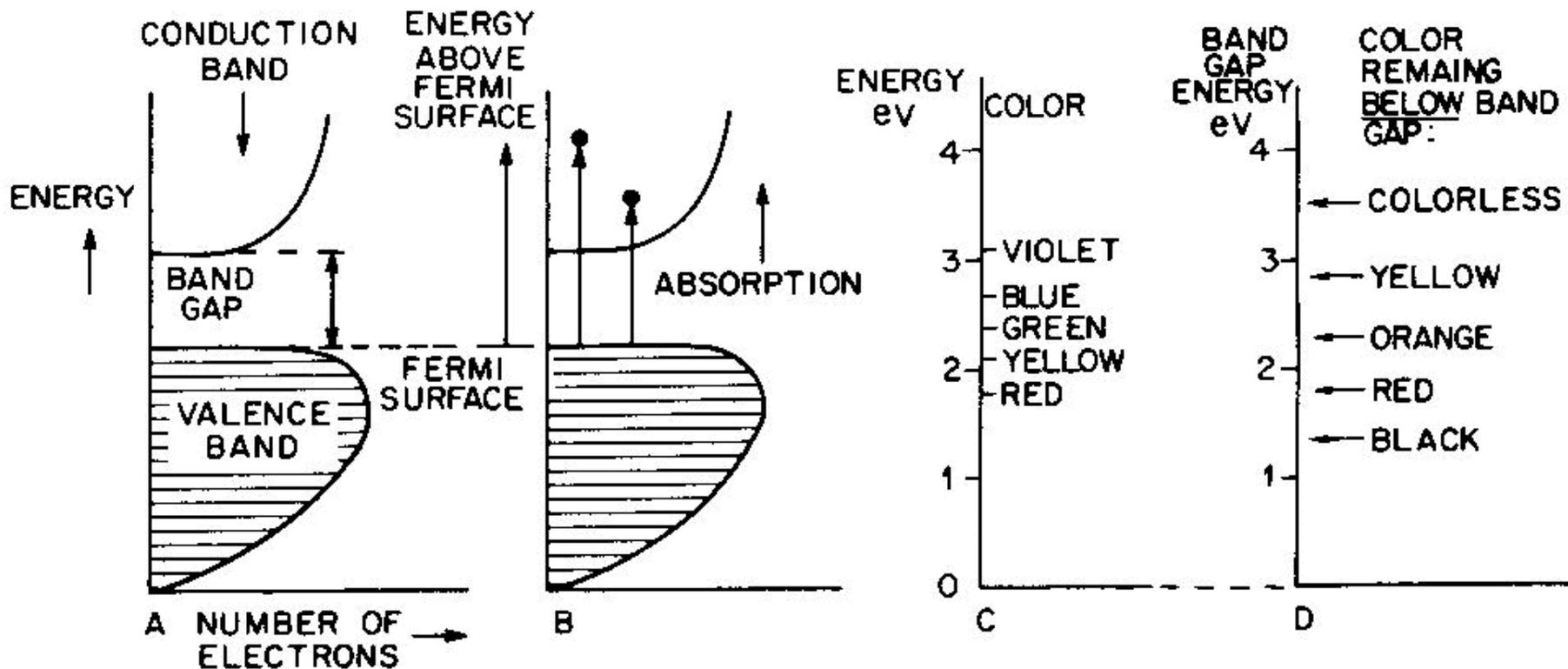
andamento di tipo Arrhenius della conducibilità



Bande proibite in tipici semiconduttori III-V e Si



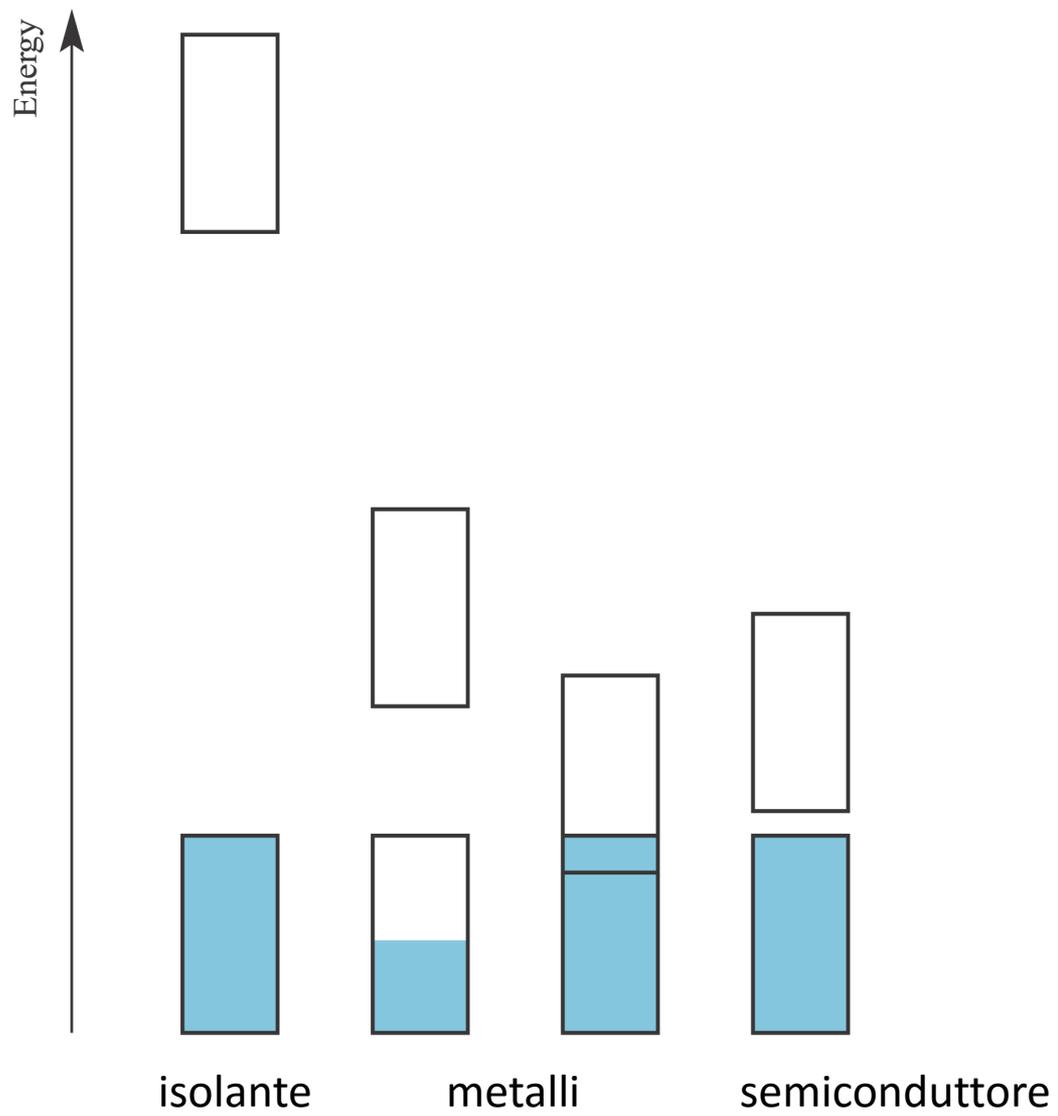
Ampiezza della bande proibita e colore dei semiconduttori



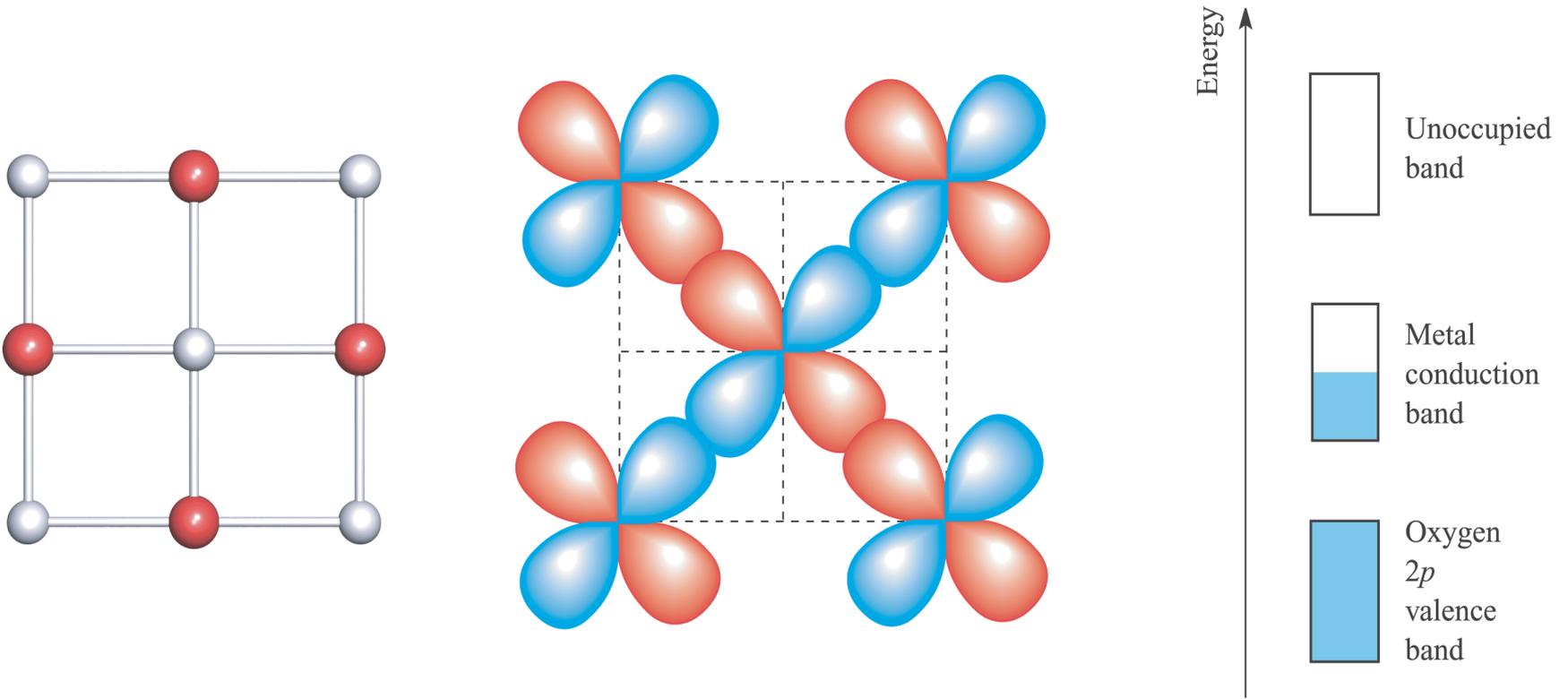
e.g. la galena, PbS , è grigio-nera poiché il band gap è solo 0.4 eV, cioè assorbe tutto il range della luce visibile.

Luce emessa dai LED in funzione della composizione

x in $\text{GaAs}_{1-x}\text{P}_x$	Substrate	λ / nm	Observed colour or region of spectrum
0.10	GaAs	780	Infrared
0.39	GaAs	660	Red
0.55	GaP	650	Red
0.65	GaP	630	Orange
0.75	GaP	610	Orange
0.85	GaP	590	Yellow



TiO, un ossido metallico conduttore



Semiconduttori estrinseci

(drogaggio sostitutivo)

e.g. Si drogato con As

e.g. Si drogato con Ga

