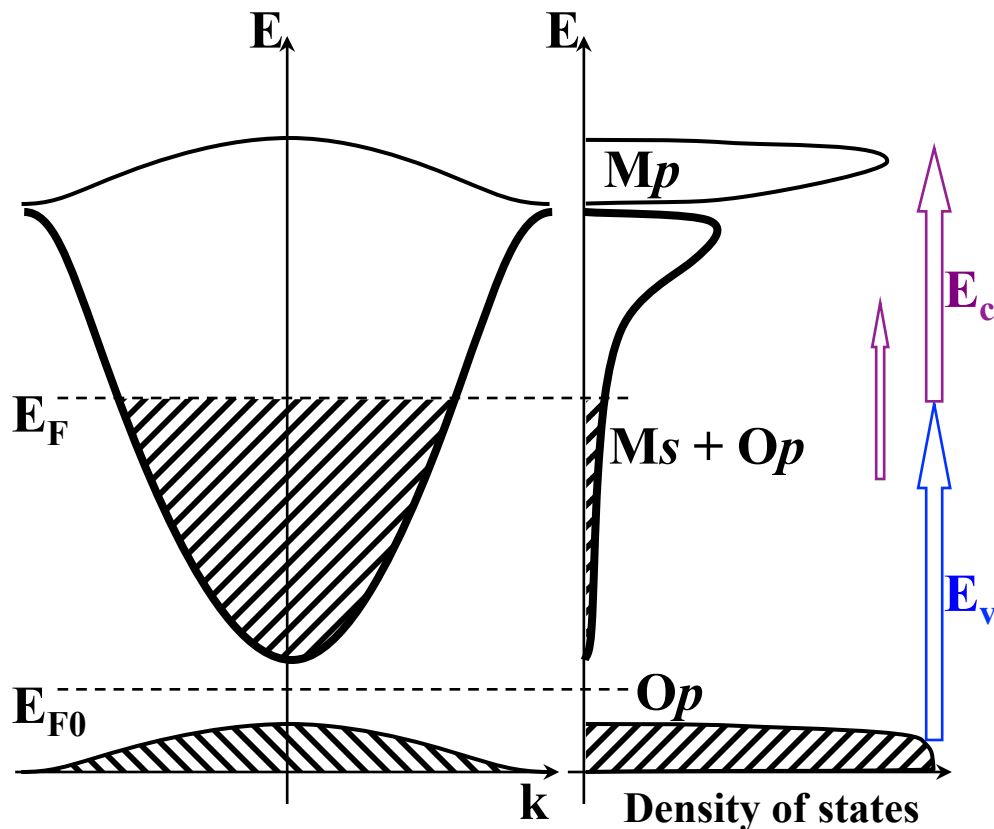


Understanding the TCO basics

The key feature of any n-type TCO host (In_2O_3 , SnO_2 , ZnO , CdO):

highly dispersed free-electron-like conduction band



Degenerate doping provides:

⇒ high mobility of extra electrons due to their small effective mass

⇒ pronounced shift of optical absorption edge (Burstein-Moss shift)

⇒ low absorption within visible due to low density of states of the CB