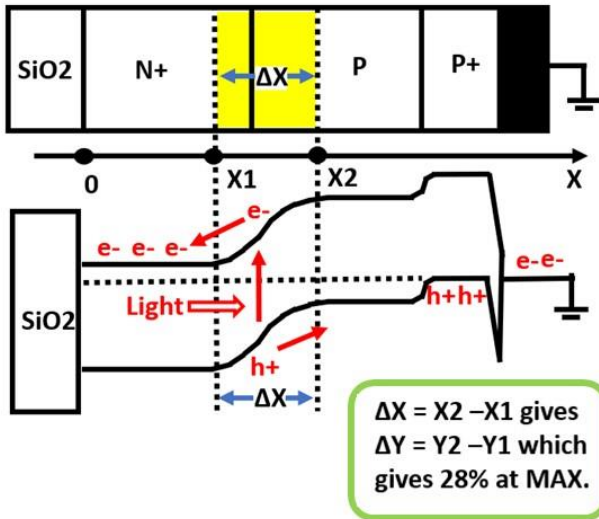


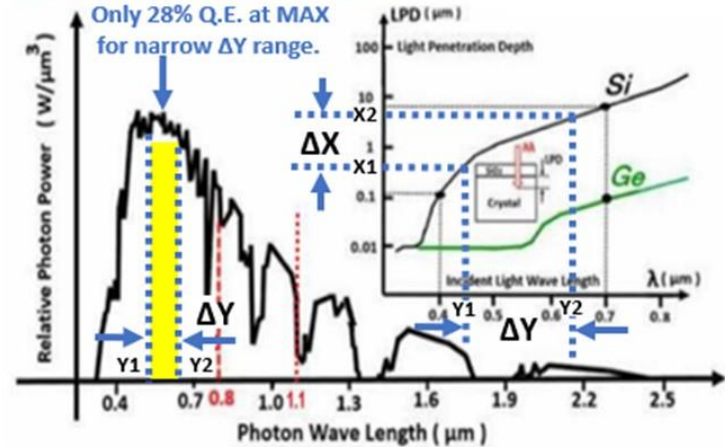
Single Junction type Solar Cell has a very low efficiency of less than 28%.

Why Silicon Solar cell has Very Low Efficiency

Only Light reaching the depletion zone ΔX can contribute the Q.E.



Short Wave Blue Light is all wasted.



The N+P junction depletion width is given as $(X2 - X1)$. Take $X1 \sim 1 \mu m$ and $X2 \sim 6 \mu m$. The photon wave length of $Y1 = 0.5 \mu m$ has the silicon crystal penetration depth of about $X1 = 1 \mu m$ while the photon wave length of $Y2 = 0.6 \mu m$ has the silicon crystal penetration depth of about $X2 = 6 \mu m$. Only the photon wave length between $Y1 = 0.5 \mu m$ and $Y2 = 0.6 \mu m$ can reach the N+P junction depletion region $(X2 - X1)$ and contribute to the solar cell efficiency, which is very small $< 28\%$ at most. 030

