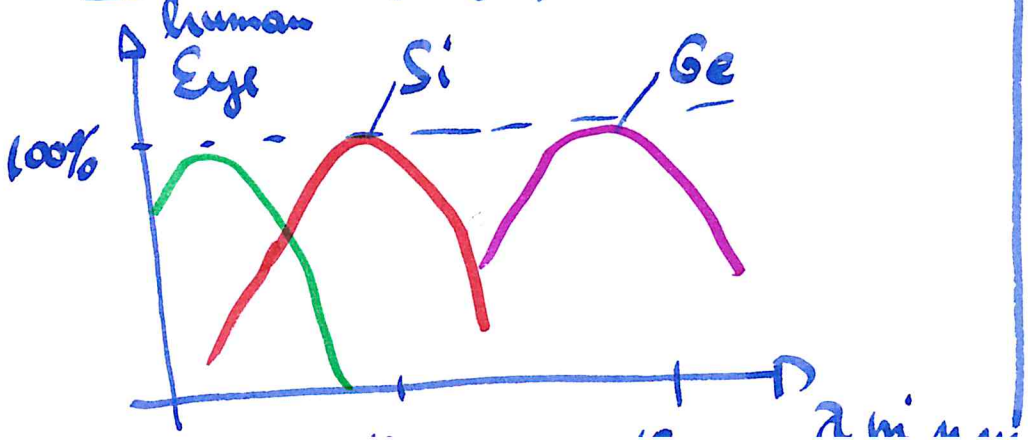
devices

Repeat:

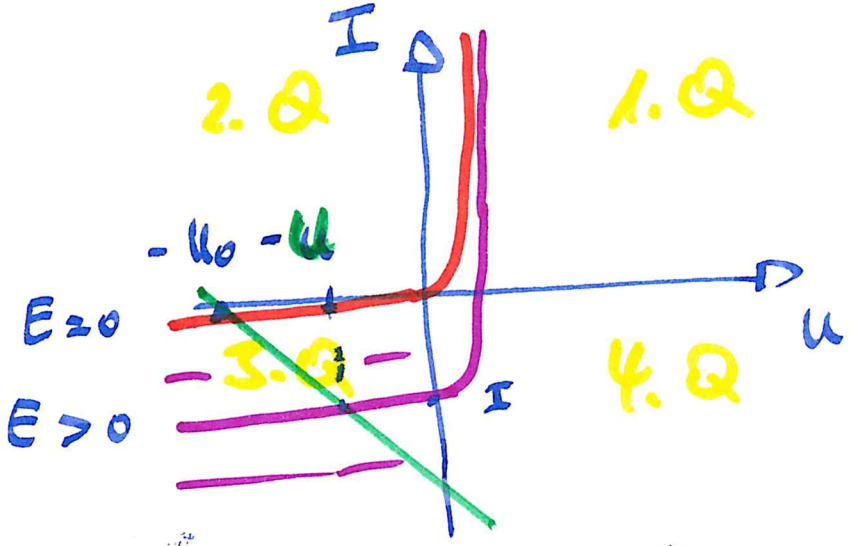
- Diodes
- Z-Diodes
- Photo Diodes

- Photo diode can be a general Si-diode, can be from other material

Sensitivity of photo diodes:



- Characteristic of a diode



E: radiation

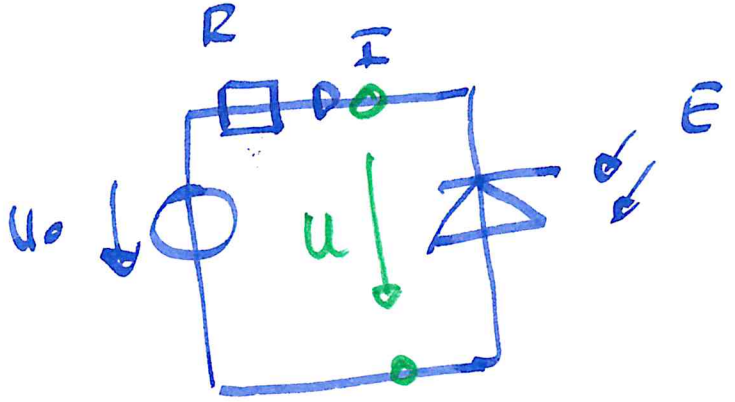
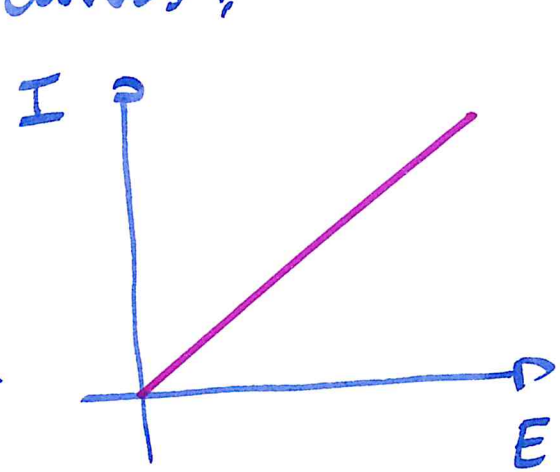
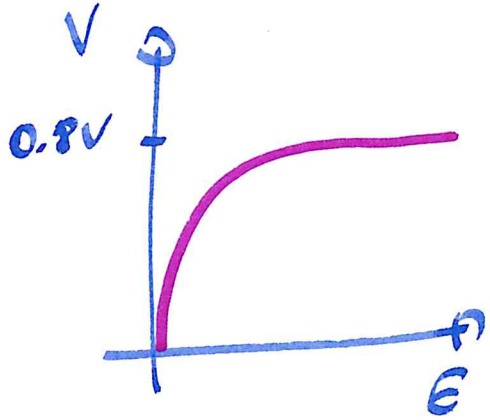


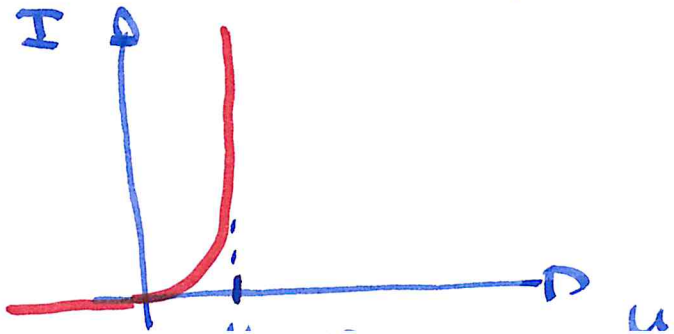
Photo diode works in reverse direction

Photo diode characteristic curves:



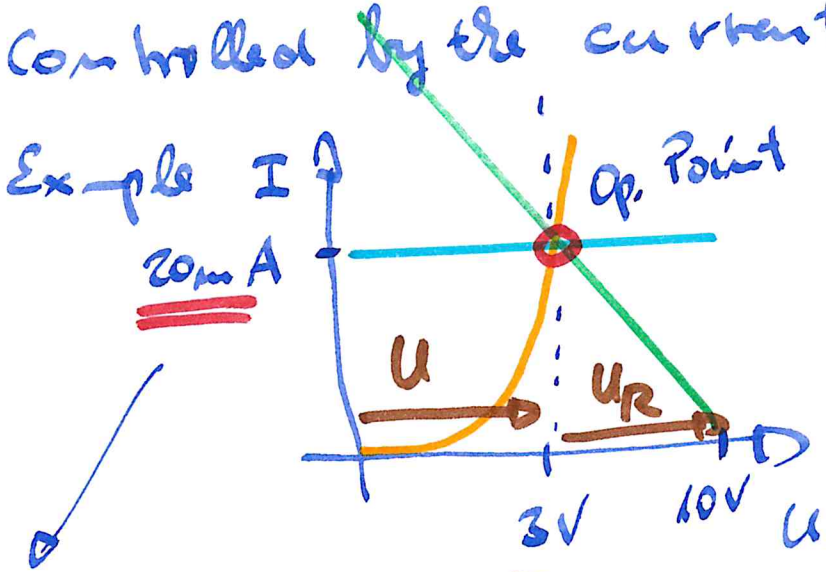


- LED
  - = inverse photo diode
  - - you can get in diff colours
  - - LED works in forward direction

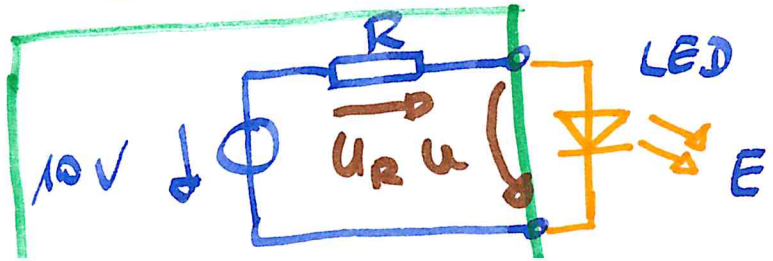


U_{LED} depends of the colour of the LED, 1V, 2V, 3V

LED's are not controlled by the voltage, they are controlled by the current.



$I_{LED} \triangleq 20\,mA$



$U_R + U = 10V$; $U_R = 10V - U = 7V$

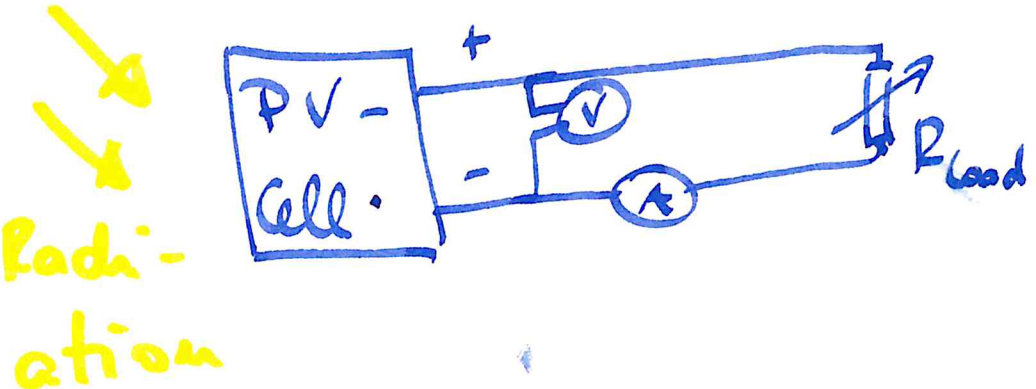
with $I = 20mA \Rightarrow R = \frac{7V}{20mA} =$

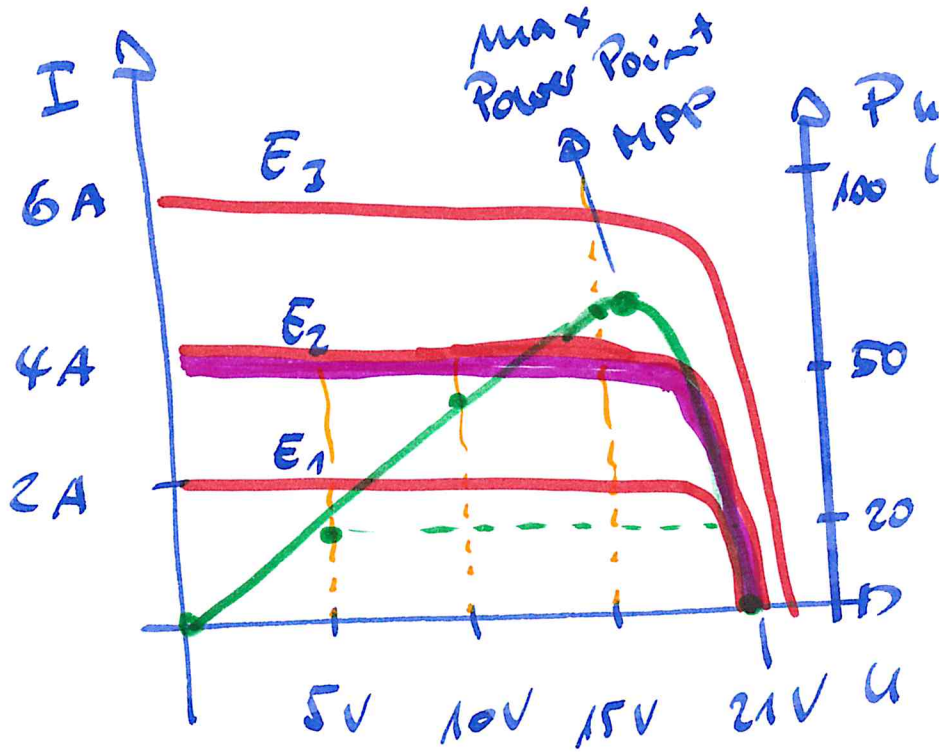
$350\,\Omega$

Sun's

PV-Cells

- Theory as in Lucas Nülle





$P = U \cdot I$

Only in MPP the PV-Cell produces the max ~~P~~ power.

MPP is not always on the same point, see