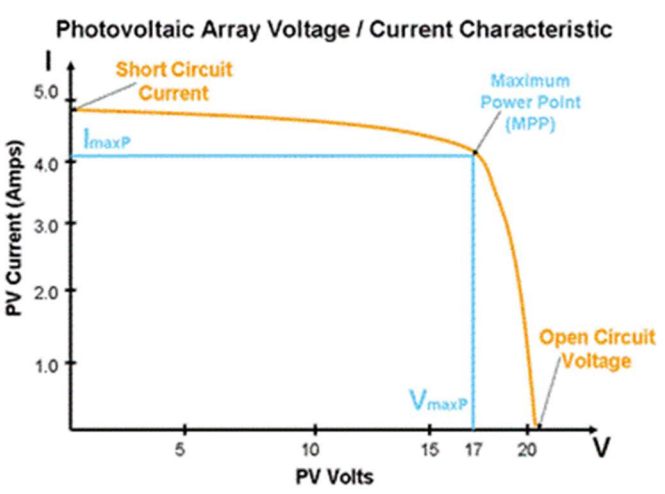
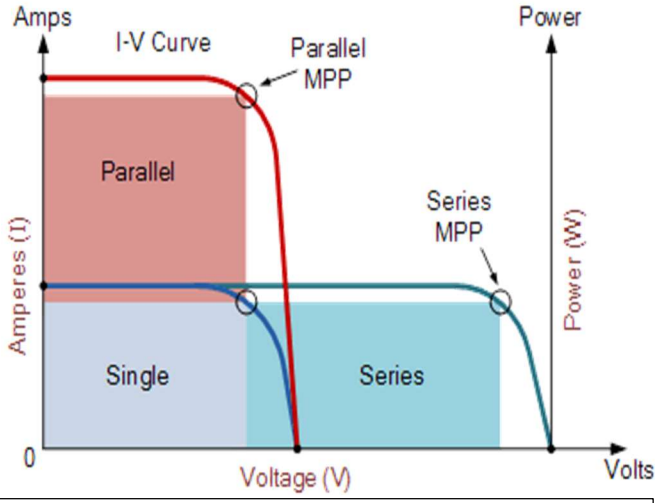
V

V-I Characteristics of a Photovoltaic Cell

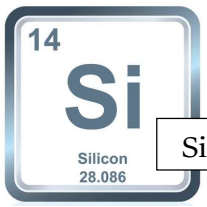




With the solar cell open-circuited, that is not connected to any load, the current will be at its minimum (zero) and the voltage across the cell is at its maximum, known as the solar cells open circuit voltage, or Voc. At the other extreme, when the solar cell is short circuited, that is the positive and negative leads connected together, the voltage across the cell is at its minimum (zero) but the current flowing out of the cell reaches its maximum, known as the solar cells short circuit current, or Isc.

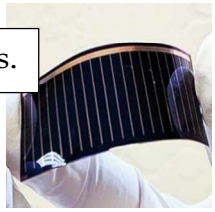
Materials used in Solar Cell

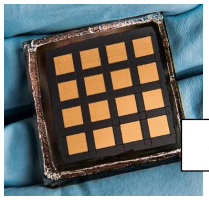
The materials must have a band gap close to 1.5eV. Some of them are:



Silicon

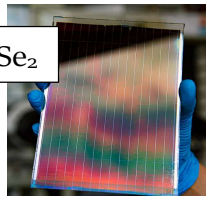
Ga.As.





Cd.Te.

$CuInSe_2$



Criteria for Materials to be Used in Solar Cell

1. Must have band gap from 1ev to 1.8ev
2. It must have high optical absorption
3. It must have high electrical conductivity
4. The raw material must be available in abundance and the cost of the material must be low