

2.2.2 Other Uses of Silicon

The Obvious

As a budding Materials Scientist and Engineer, you must have heard or read about at least two other major **Si** products. If not, do the following: i) Start reading a real newspaper and ii) Read the Science and Technology part. What you definitely should be able to come up with are.

Solar Cells.

- What do you know about solar cells? Quite a bit, actually - provided you remembered what you have [learned already](#).
- Let's recapitulate a few essentials you should know:
 - Maximum efficiency η and how it relates to the band gap.
 - The energy density given by the sun and how much power we can generate at high noon per m^2 .
 - The fact that we need a (pn-) junction to collect *minority* carriers.
 - The fact that the diffusion length L plays a major role, and that this has to do with **Si** being an indirect semiconductor
 - The I - U characteristics and how it is calculated.
 - That the only decisive parameter in the solar cell business is money.

"MEMS", i.e. microelectronic and micro-mechanic (and micro-optics and micro-fluidic and...) *systems*.

- What do you know about **MEMS**? Probably not all that much from what you have learned so far.
- **Class Exercise:** *What do you know about MEMS?*
- To get some idea of what is going on in your immediate neighborhood in Itzehoe, [check this link!](#)

We will come to these devices or components in due course. Meanwhile you can activate [the link](#) and look ahead a bit.

Now ask yourself: **Class Exercise:** *Are there any other uses of Si you know off (or can find quickly)?*

- Only after you pondered the questions above for some time, you should activate this [link](#)

