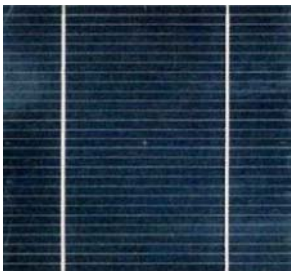
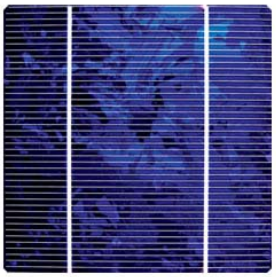
Types of Solar Panel Cells

Monocrystalline Silicon Cells



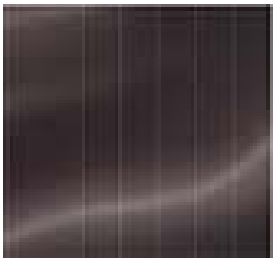
A Monocrystalline panel consists of a number of solar cells connected together to form a grid. Monocrystalline Solar cells are made using thin wafers of silicon cut from a single crystal. Silicon wafers are expensive to produce but are very efficient conductors. The efficiency of these are around 15% a panel.

Poly/ Multi-Crystalline Silicon Cells



Produced from cells cut out of an ingot of melted and re-crystallised silicon. In the manufacturing process, molten silicon is cast into ingots of poly-crystalline silicon; these ingots are then saw-cut into very thin wafers and assembled into complete cells. Multi-crystalline cells are cheaper to produce than mono-crystalline ones, due to the simpler manufacturing process. However, they tend to be slightly less efficient, with average efficiencies of around 12%.

Amorphous Silicon PV



These cells are also referred to as ‘thin film’ because the cells are composed of silicon atoms in a thin homogenous layer opposed to a crystal structure. Typically you will see these cells in caculators. These cells only have a efficiency of around 5 - 7%, making them currently unsuitable for domestic solar panel installations. They have been used in large commercial instalations, enabling semi translucent panels.

Hybrid Silicon PV - HIT Cells

Hybrid cells are made up of two types of seilicon cells. Sanyo’s very efficient HIT cells use such technology. Their patenited HIT (Hetrojunction with intrinsic thin layer) cells produce a very efficient panel at over 18%. These are made from Amorphous silicon and Monocrystalline silicon cells.