
Fabrication of Solar Cells

ECE 4803
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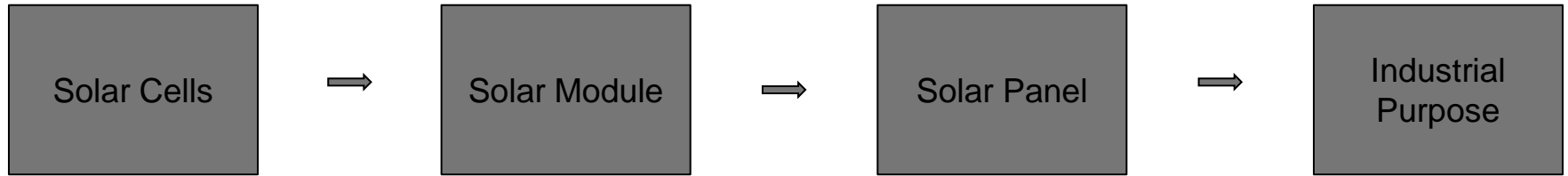
Commercial Fabrication

Suntech - crystalline silicon

First Solar - CdTe



Overview



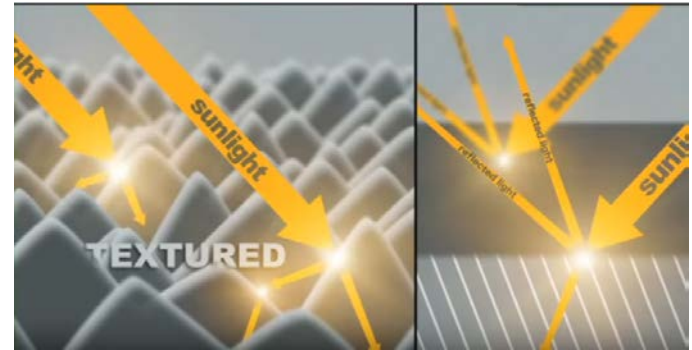
Solar Cell

Crystal Growing

Wafering

Etching

Printing

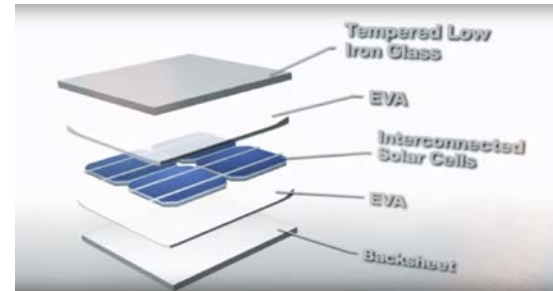


Solar Module

Multiple solar cells stitched together

Soldering

Framing



Suntech



Suntech

Founded in 2001

Long-time number one manufacturer of photovoltaics

Completed [Google](#)'s 1.6 MW solar installation in June 2007

Roughly \$1.85/watt

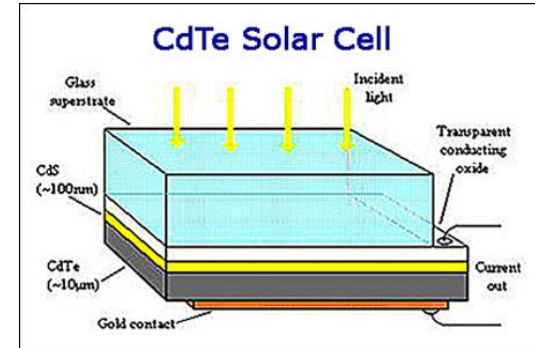


Thin Film Solar Cells

By putting a thin film of a photovoltaic material on a substrate one can create cheaper solar cells.

Manufacturing is as follows:

1. Glass preparation
2. Cell Fabrication
3. Module Assembly



First Solar

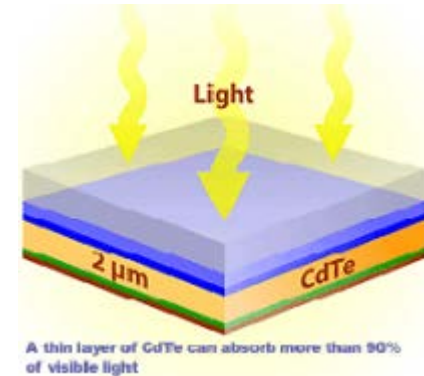
Founded 1999

Pioneered CdTe thin film solar cell technology

Overtook Suntech recently

Relieves environmental concern by recycling modules.

Roughly .67 c/watt



The Future

Efficiency is the primary concern

Reducing cost further (CdTe)

Many claims for much higher efficiencies

