

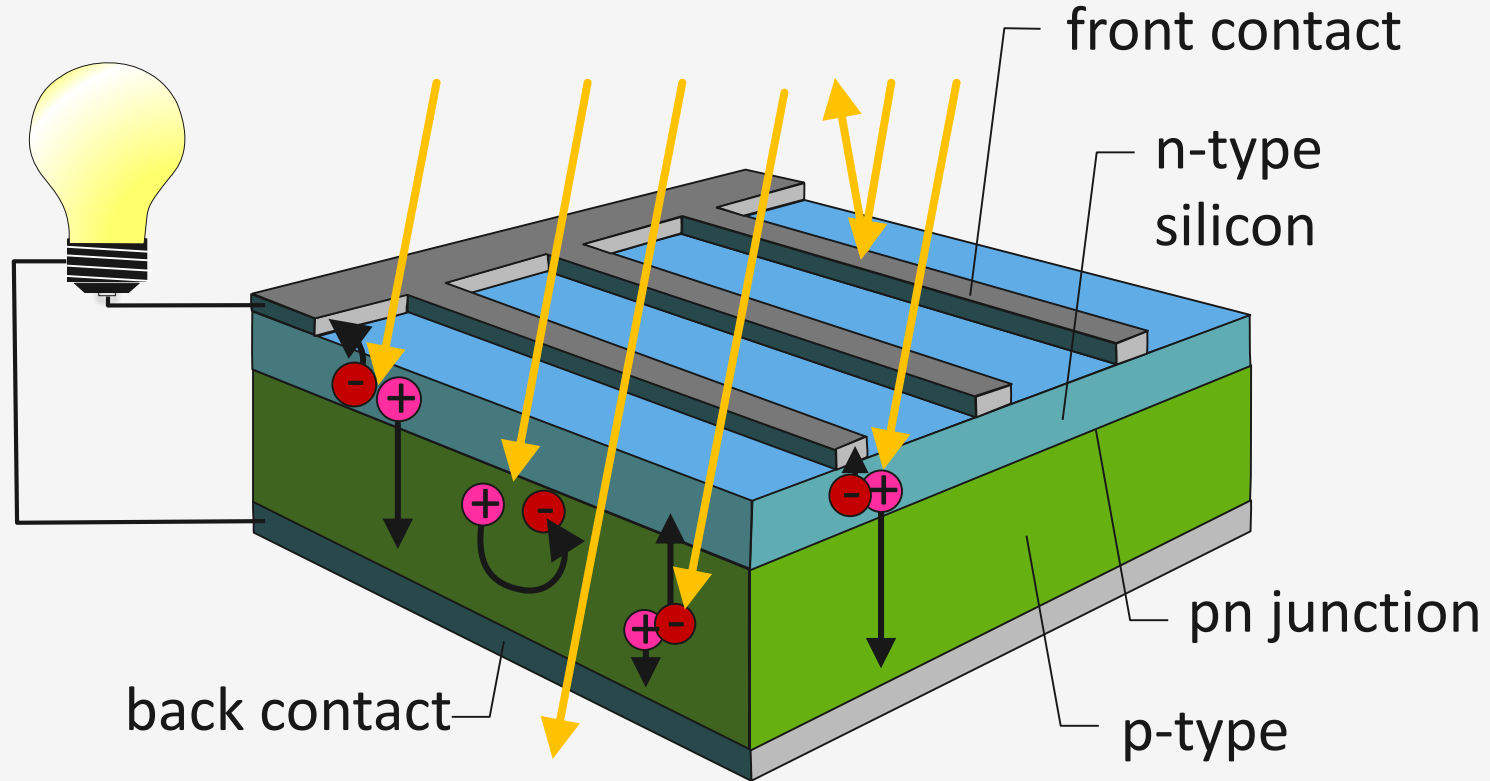
Introduction to Solar Energy

Photovoltaics

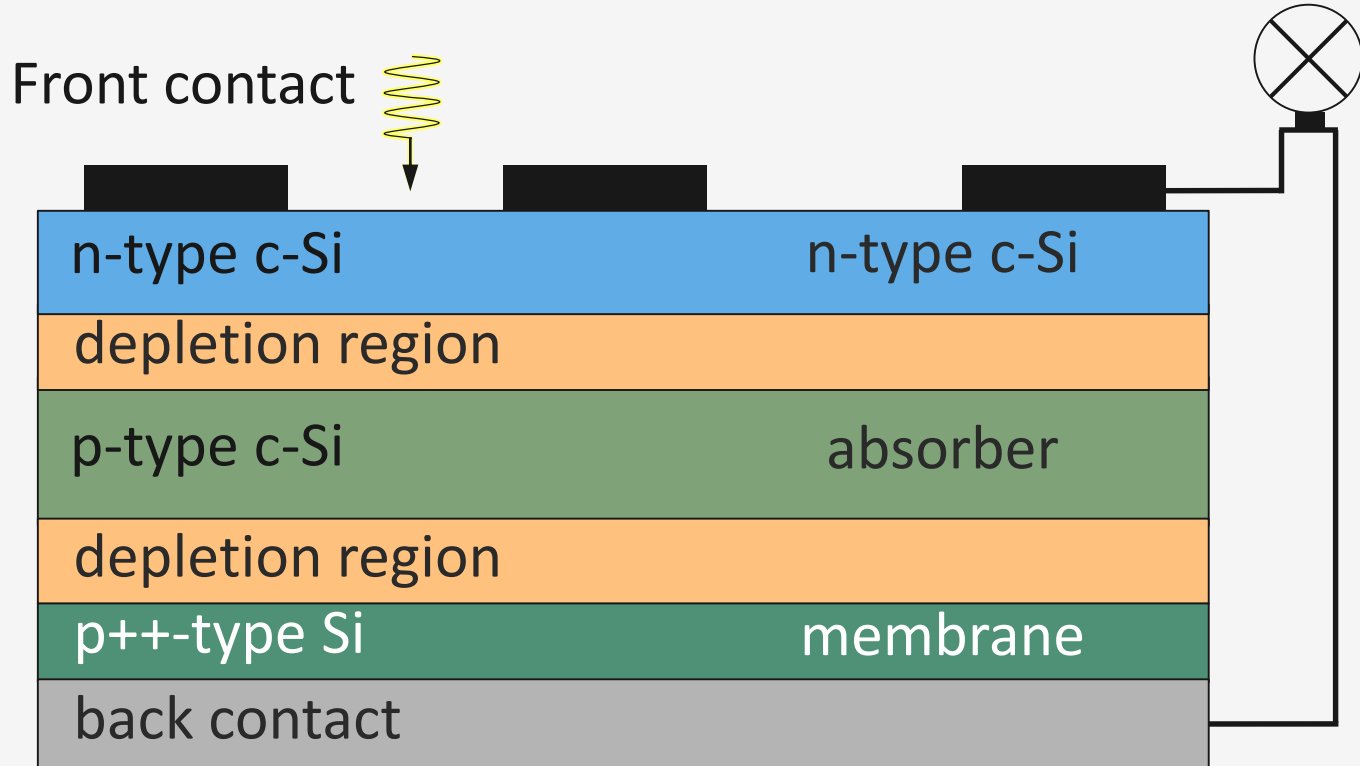
Week 1.3

Arno Smets

Solar cell operation

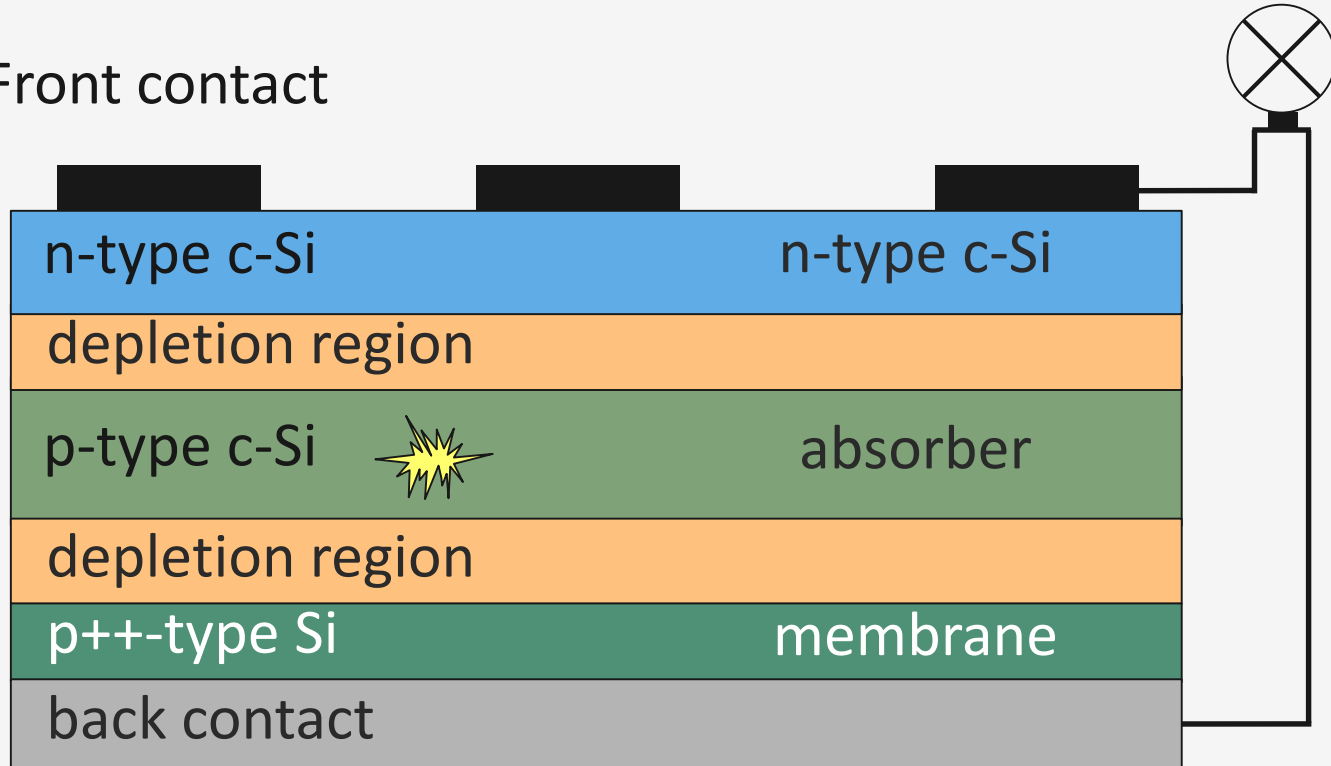


Solar cell operation



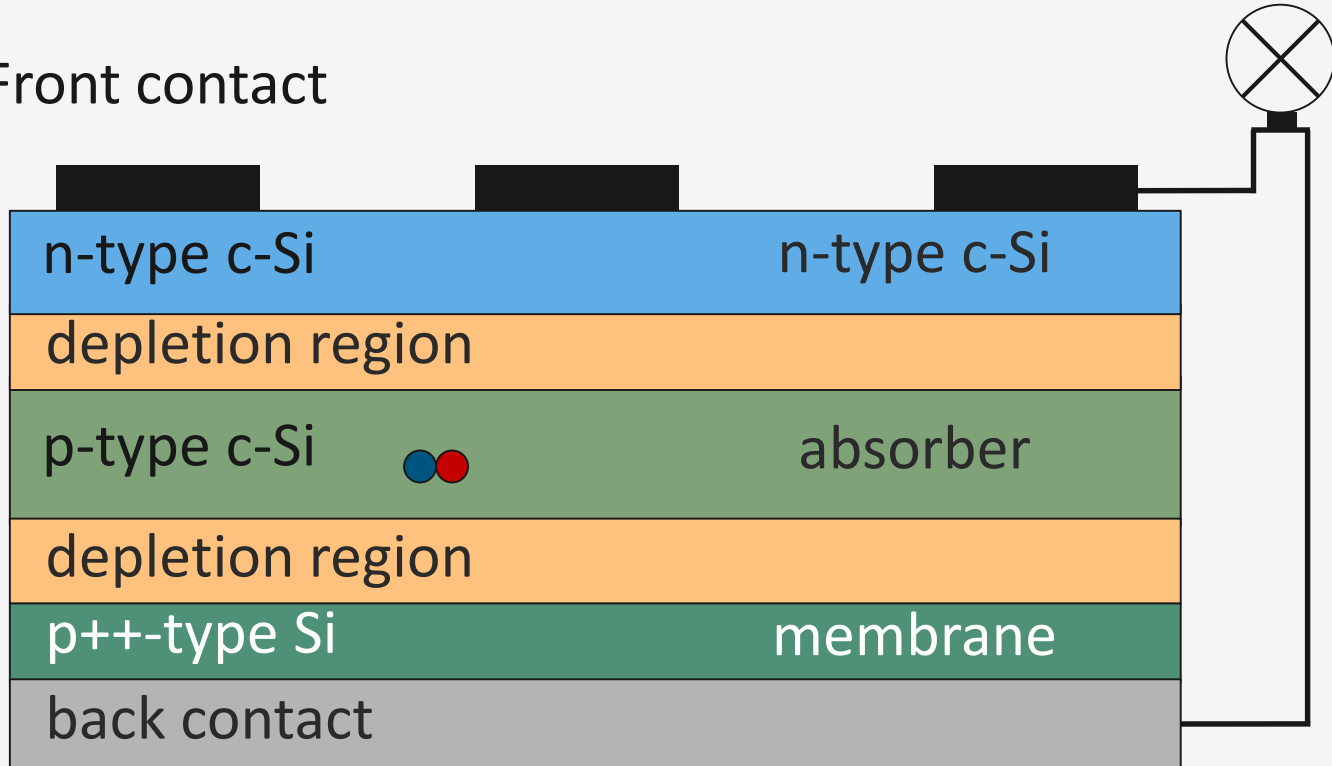
Solar cell operation

Front contact



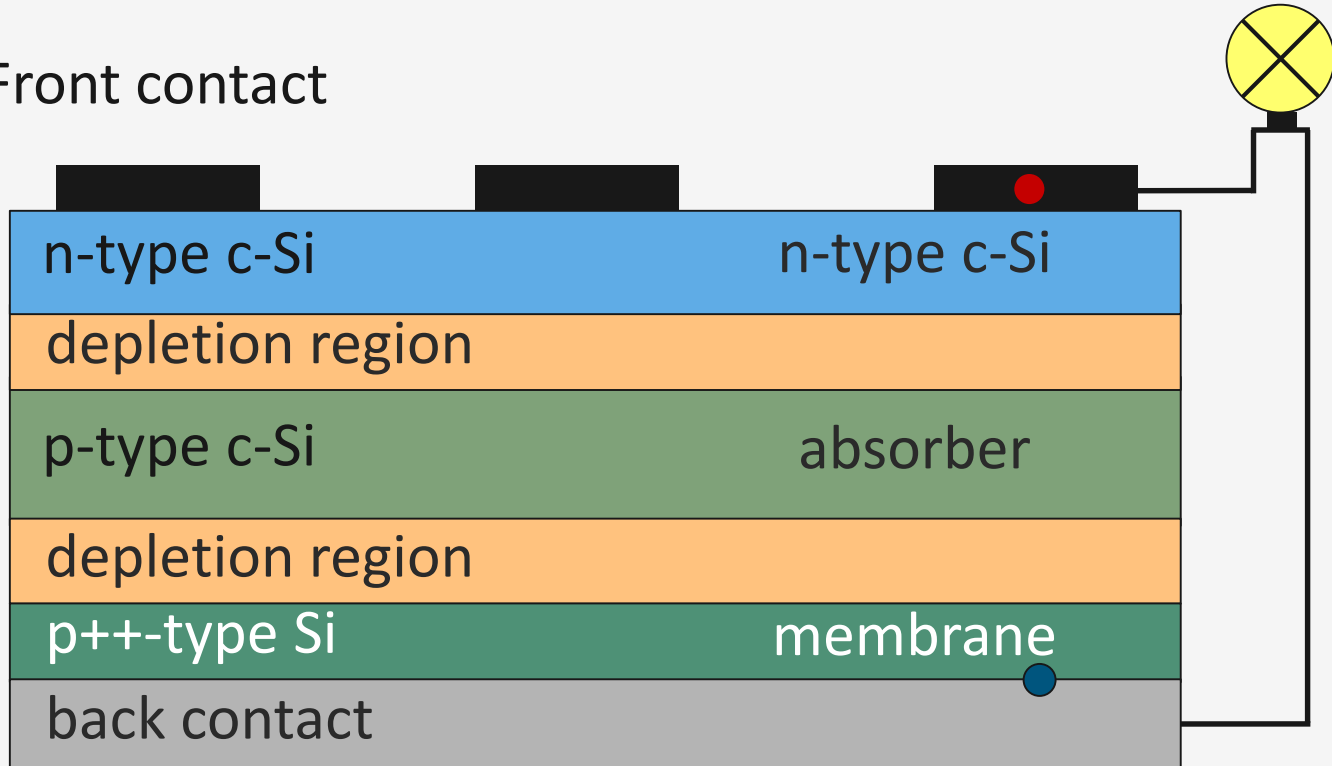
Solar cell operation

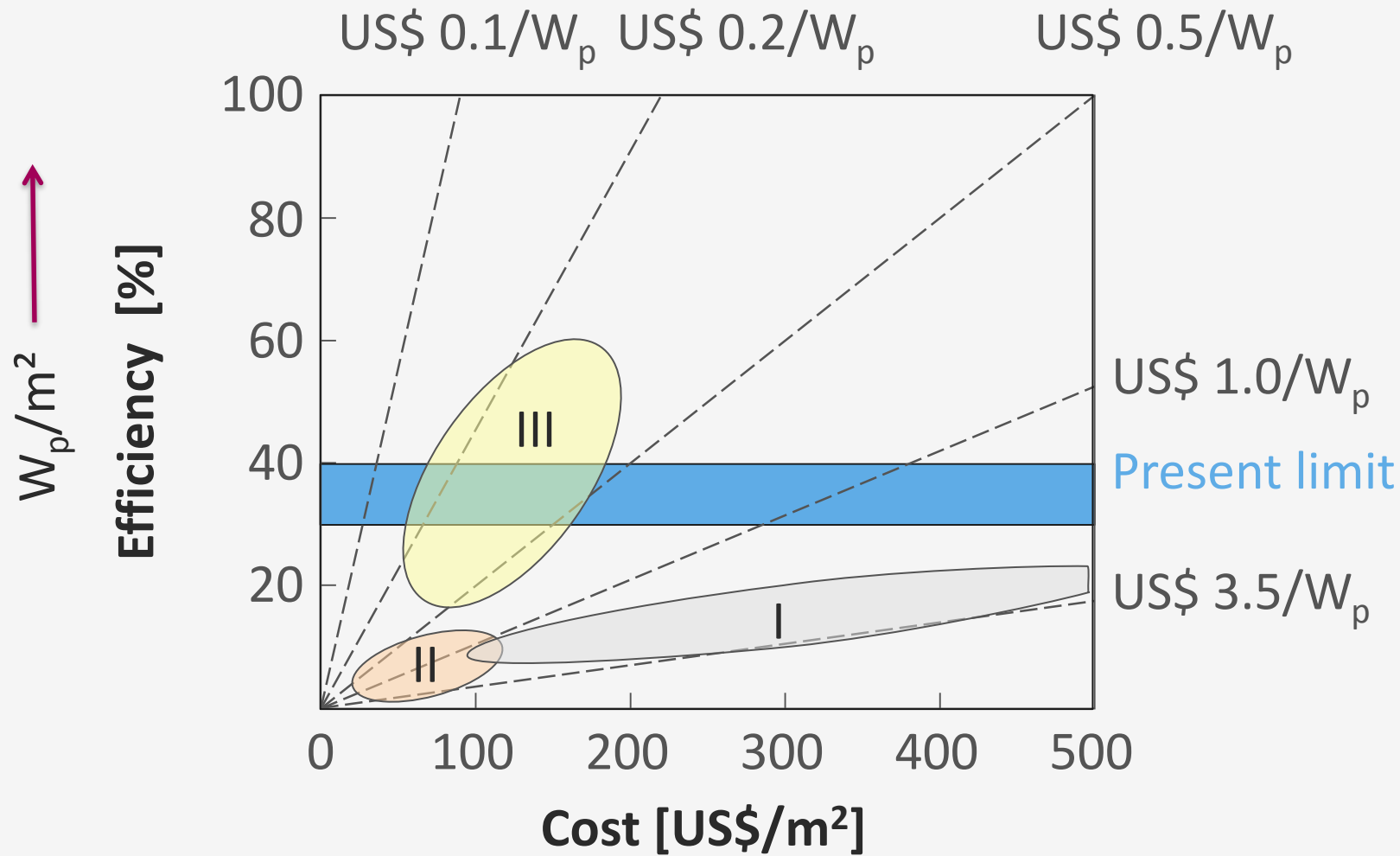
Front contact



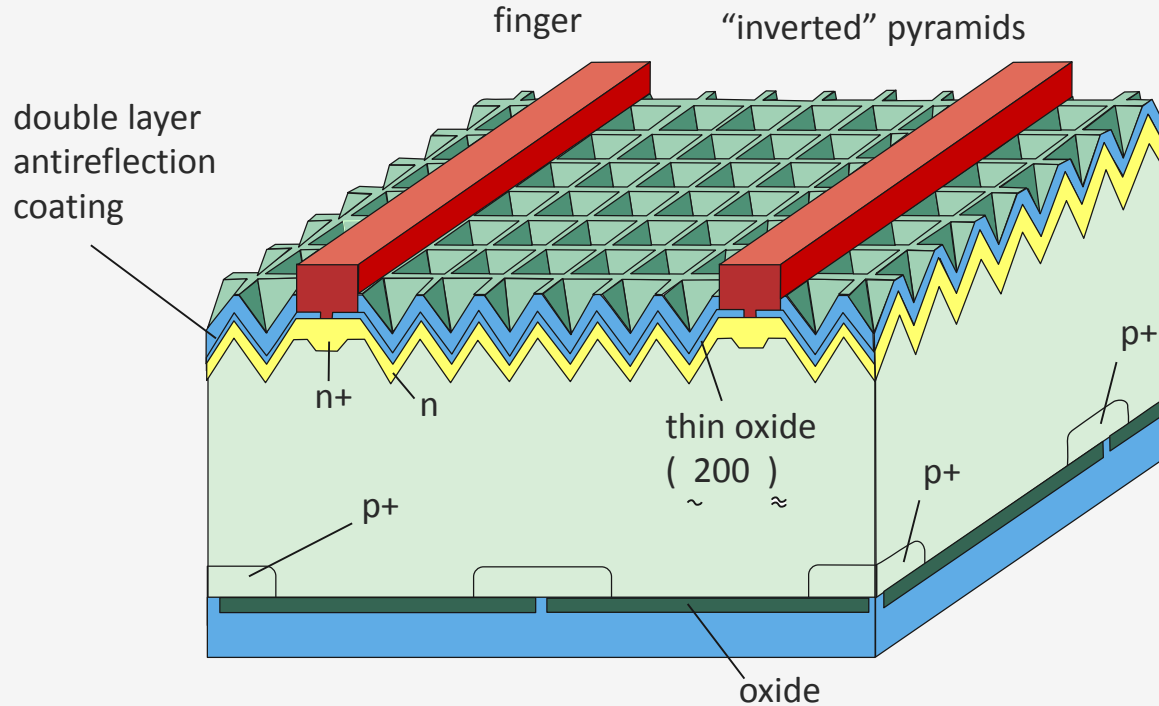
Solar cell operation

Front contact





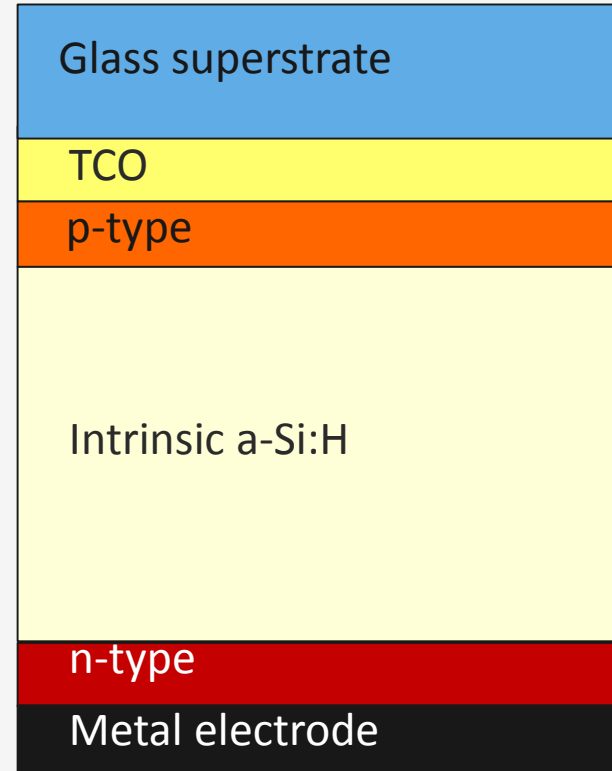
Wafer-based crystalline silicon



Thin-film silicon



Superstrate solar cell structure



Cadmium Telluride



Source: <http://www.flickr.com/photos/ferriday/5815935109/>

Glass

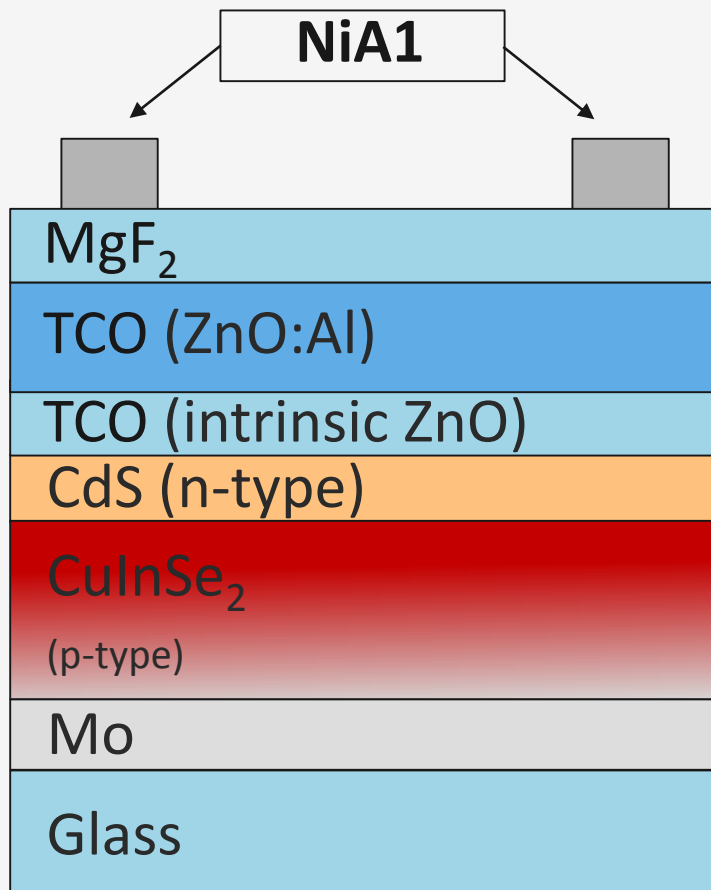
TCO (ZnO:Al)

CdS (n-type)

CdTe
(p-type)

Metal contact

CIGS



Organic/Dye sensitized Solar Cells



•www.solarmer.com

Source: Solarmer Energy

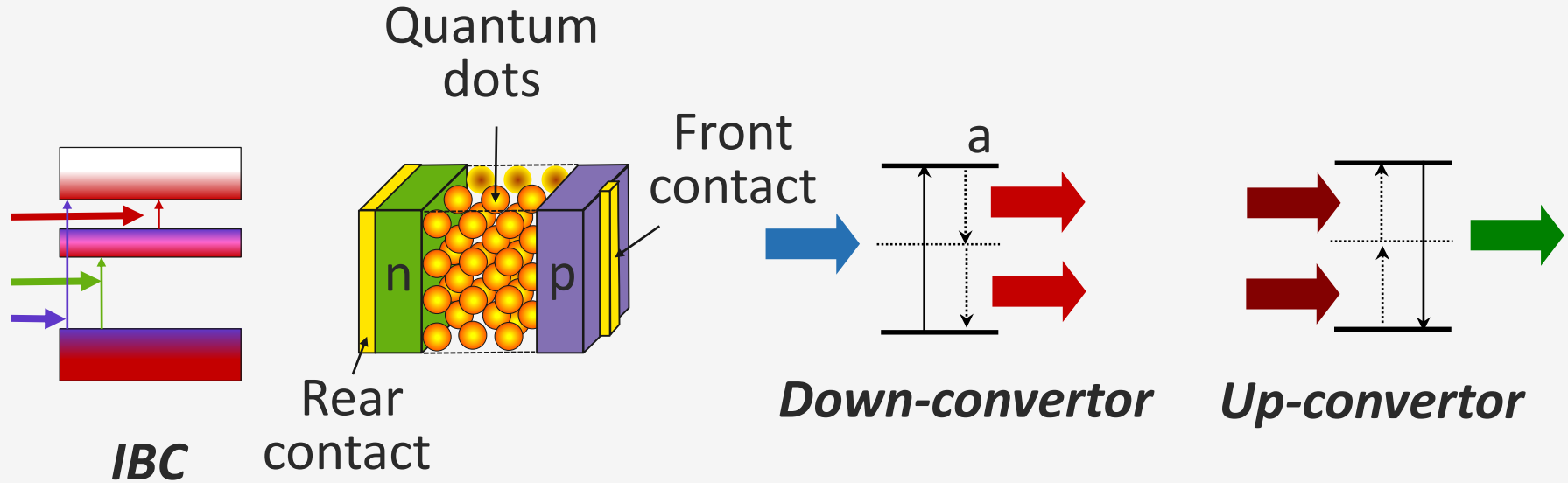
Source: Fraunhofer ISE

III – V PV Technology

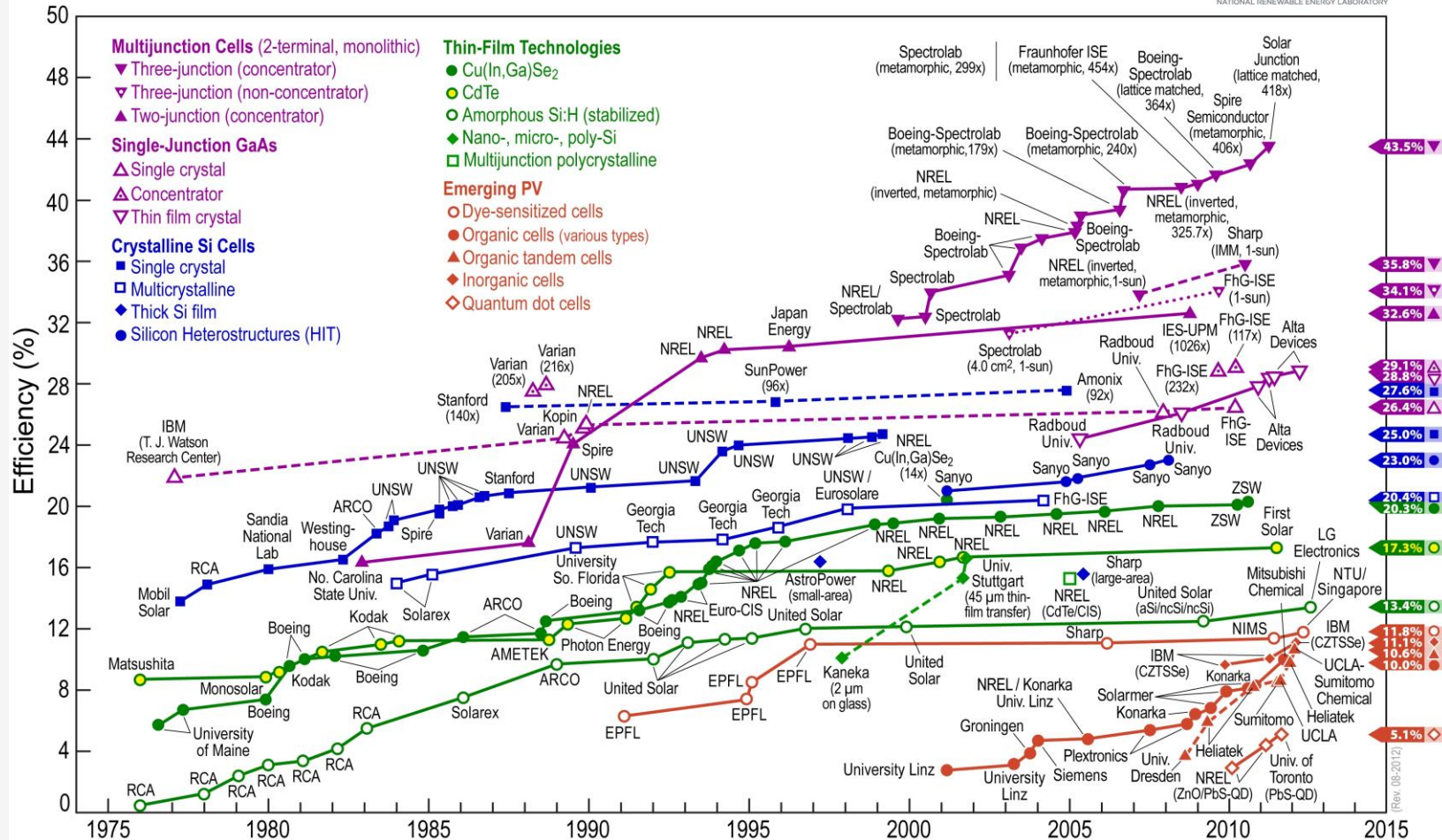


PV technologies

Emerging and novel technologies



Best Research-Cell Efficiencies



(Rev. 08-2012)

Thank you for your attention!