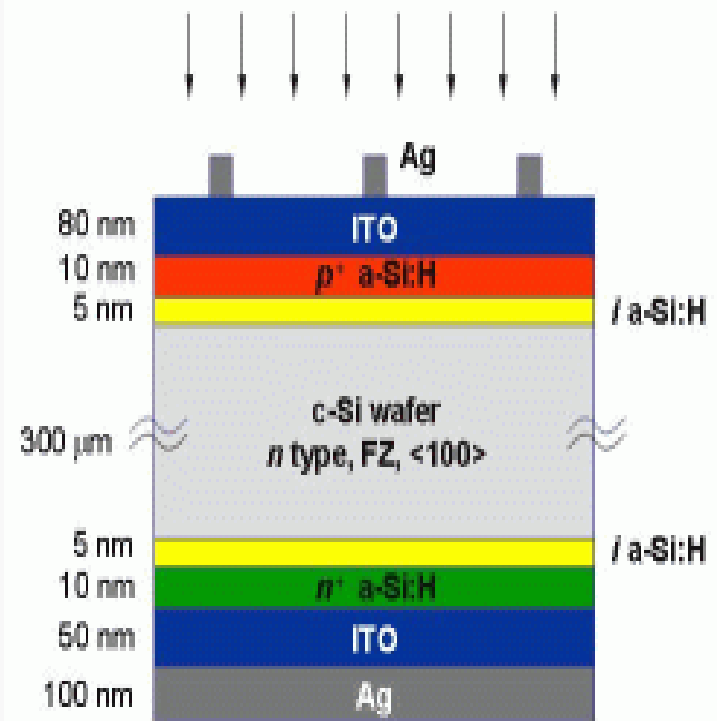
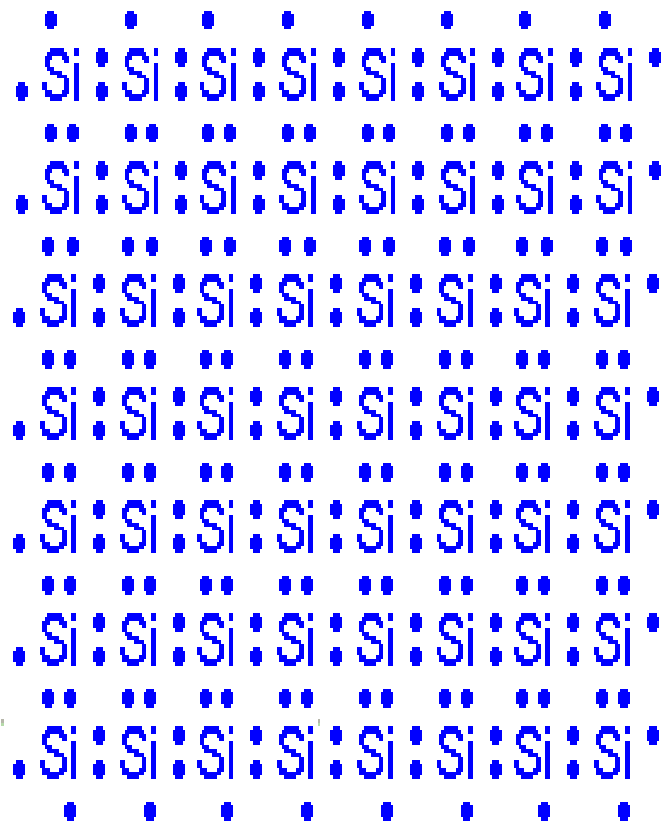


Quantum Dot Solar Cells

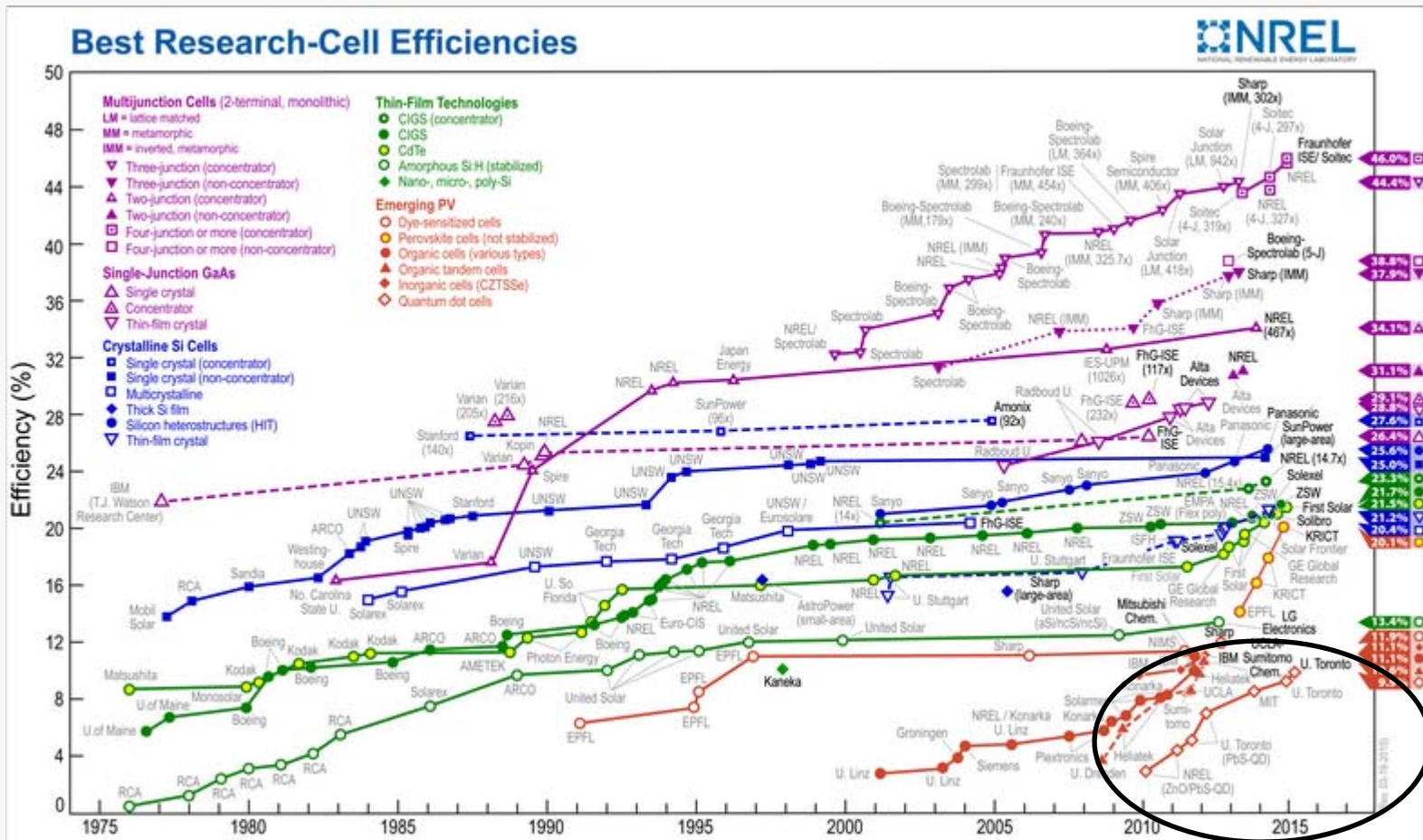
- Sean Yllander, ECE 4803 Presentation



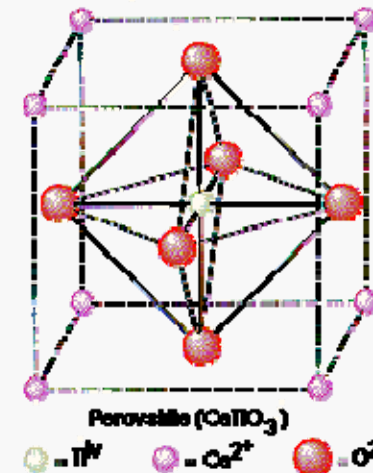
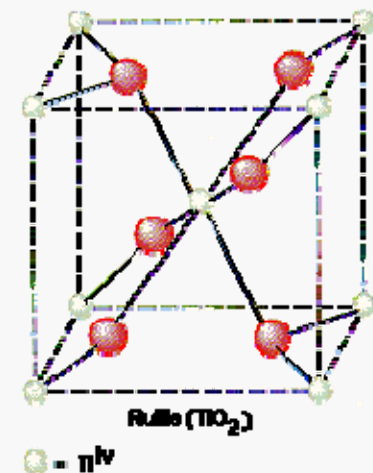
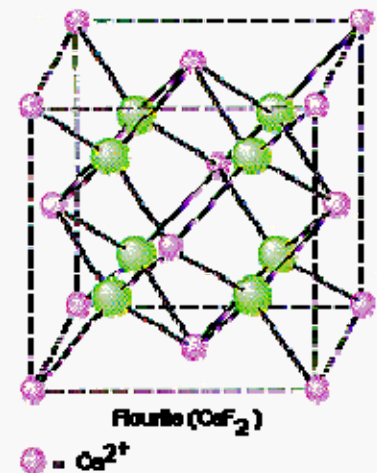
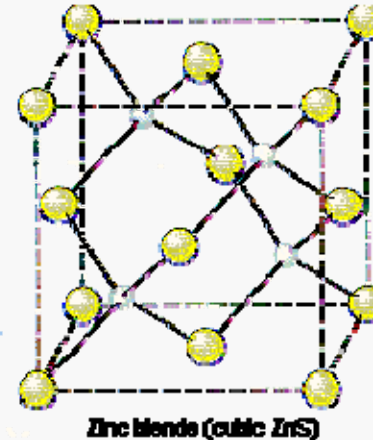
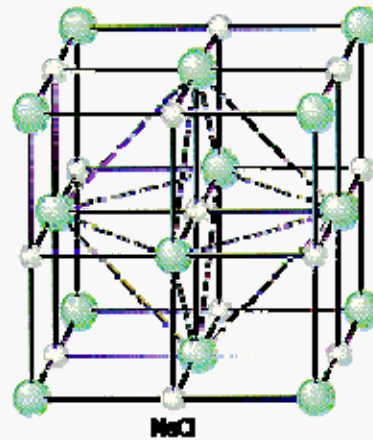
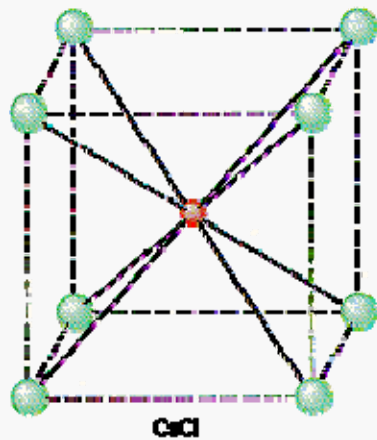
QD technology: A new take on older material



Origin, Status and Driver of the QD



Relative scale of QD technology



Dimensions of quantum confinement



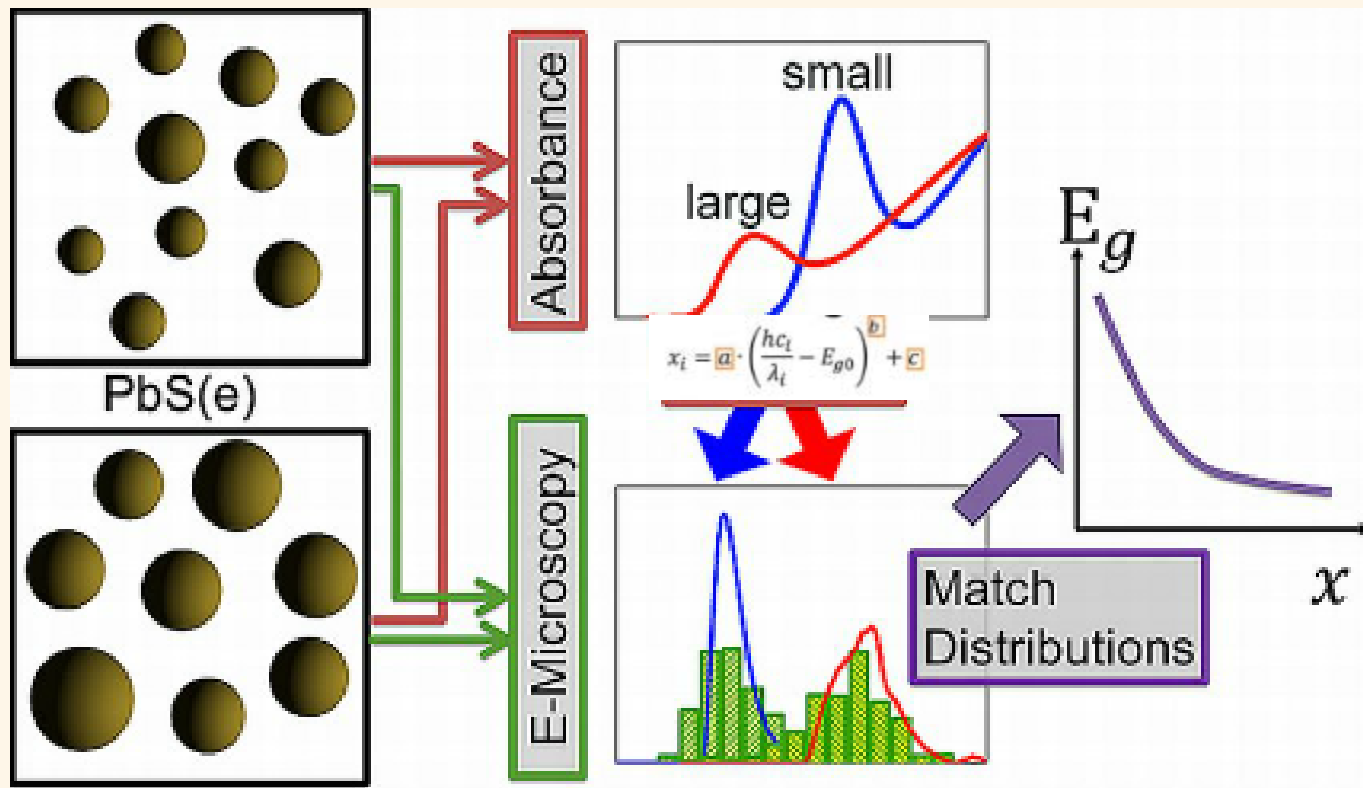
BULK

WELL

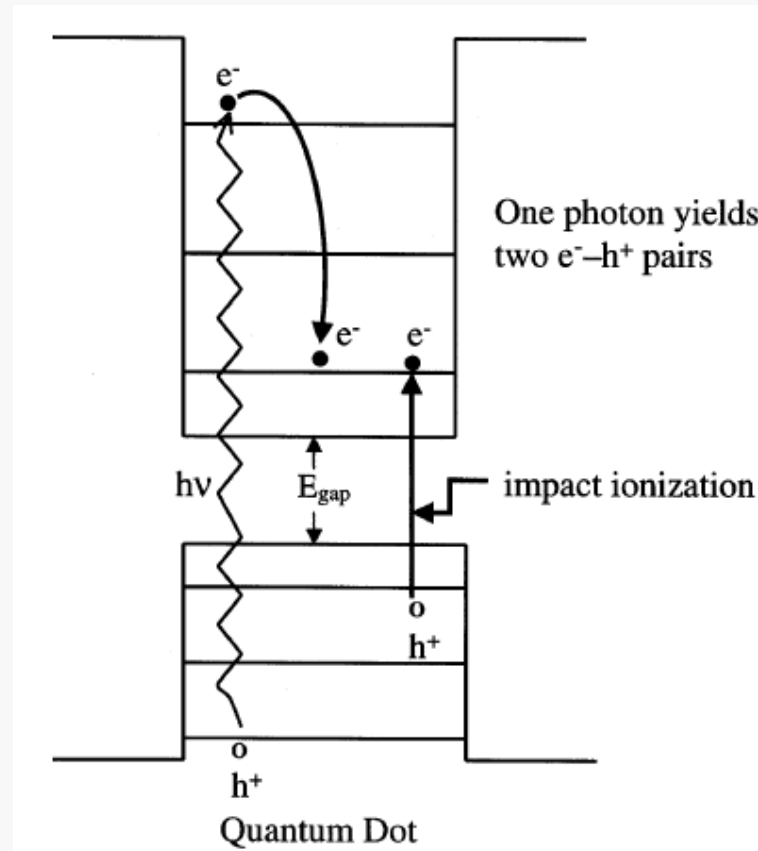
WIRE

DOT

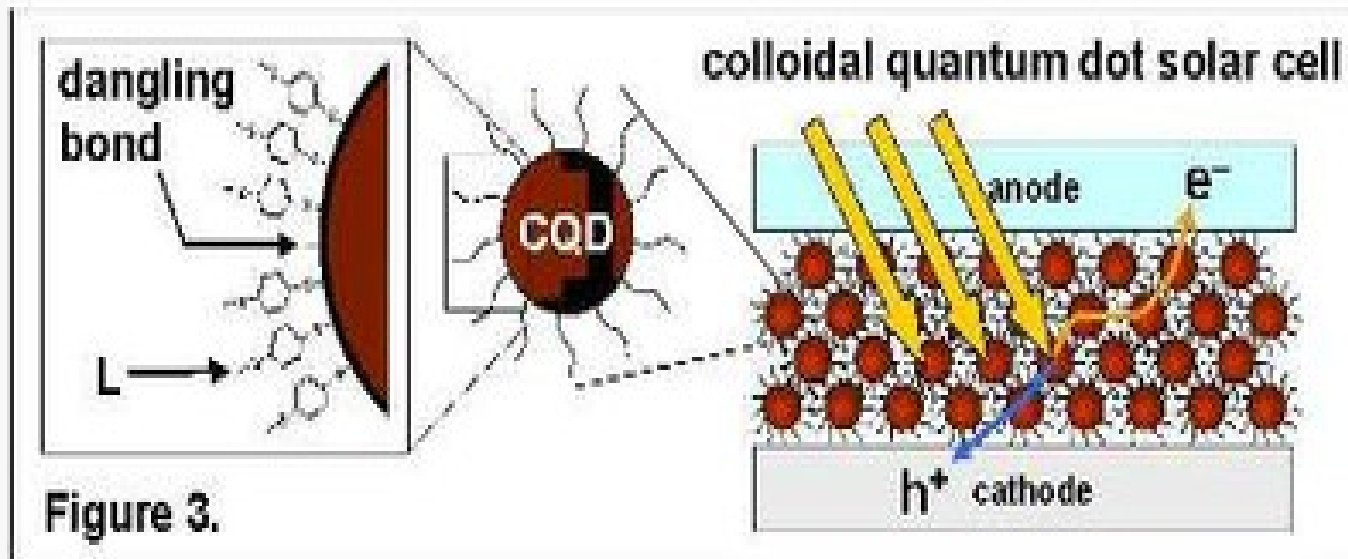
Voltage tunability of QDs



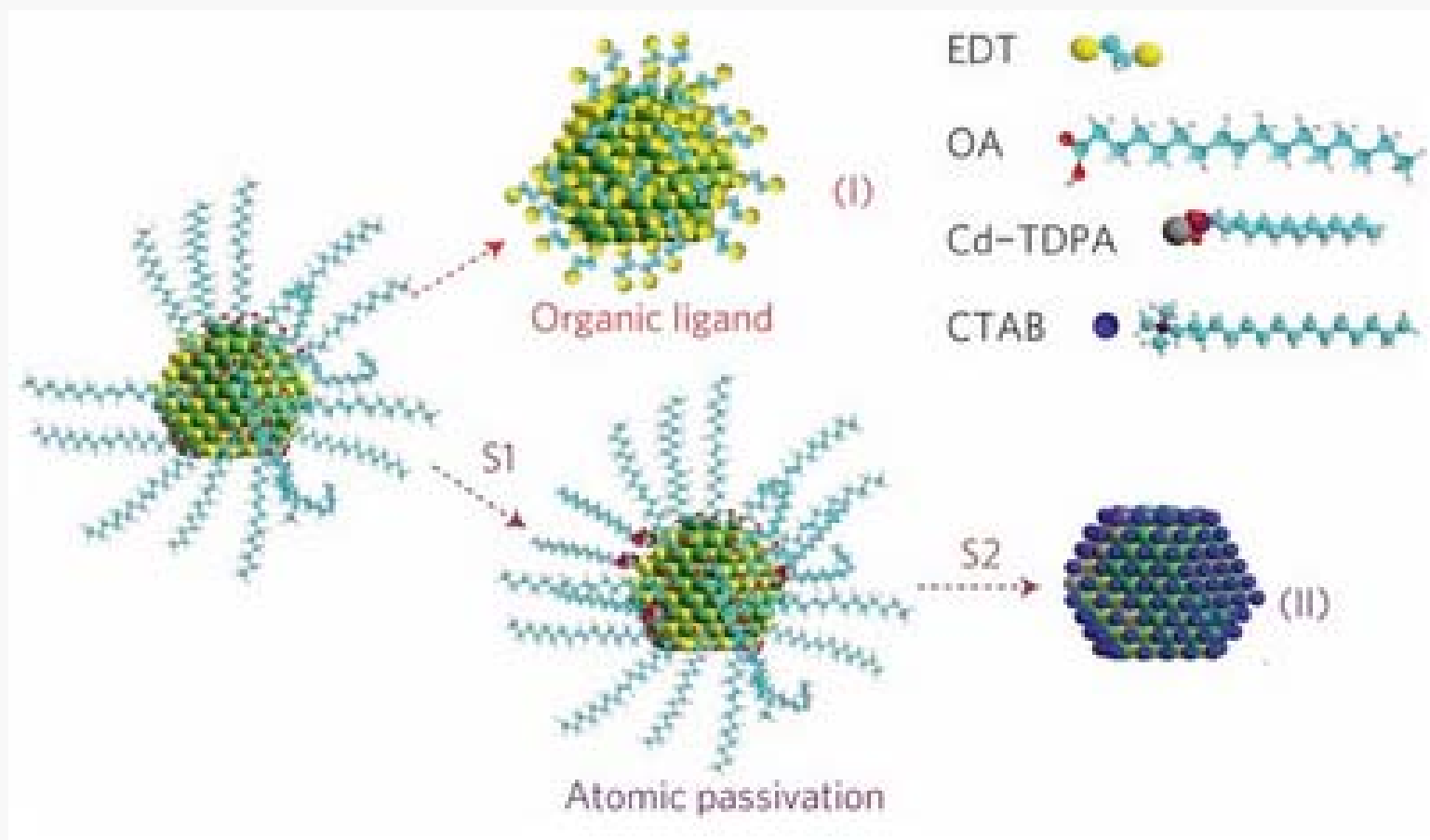
QD Impact Ionization



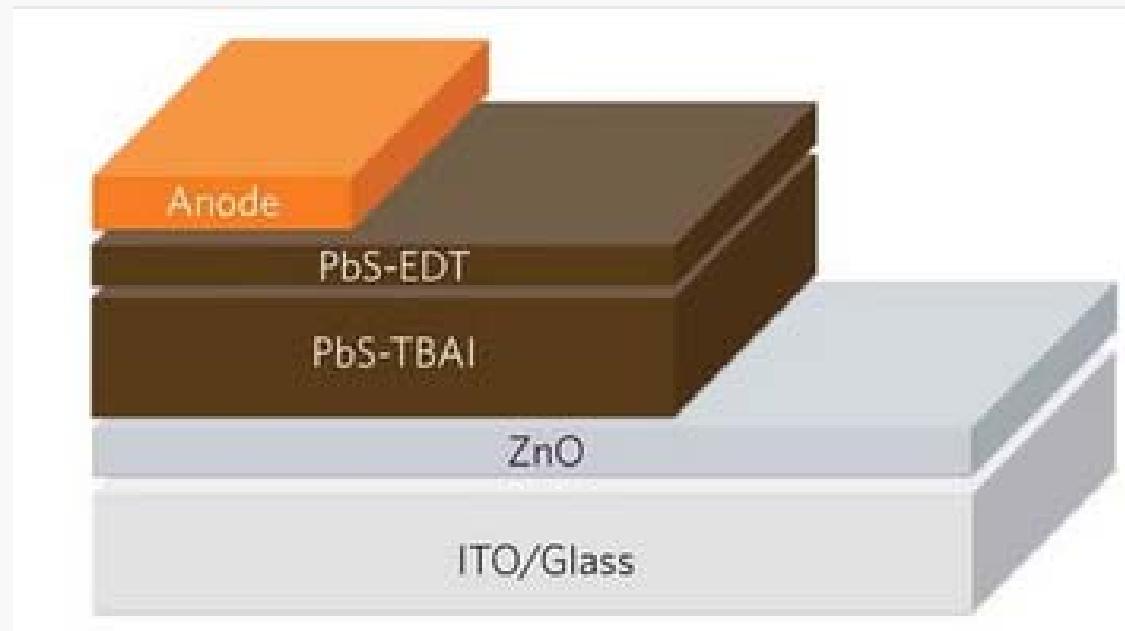
Overview of QD PV cell



On Ligands



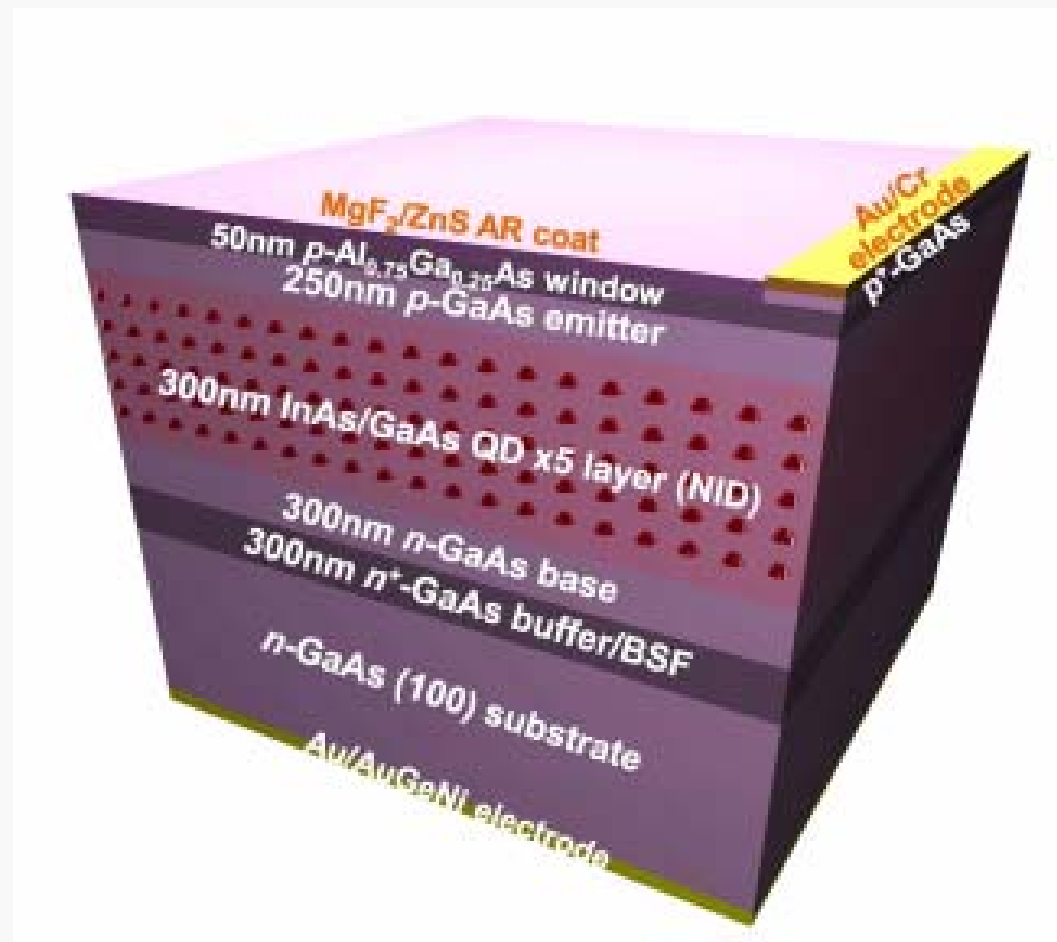
Multi-layer QD structure



Challenges of QD technology

- Difficulties extracting charges
- Lack of stability, particularly when exposed to air

QD breakthroughs



(NREL Certified) QD breakthroughs

