



Leading innovation from within

III-V Semiconductors for Solar PV Applications

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IQE: *Global Leader for Compound Semiconductor Wafers*

Founded in 1988 • Listed London (AIM) • Market Cap ~ USD1B • ~600 staff



USA

4 sites

EUROPE

3 sites

ASIA

2 sites

**100 reactors total (MOCVD + MBE)
(55% MOCVD, 45% MBE)**

Leading Edge Materials Technology & IP



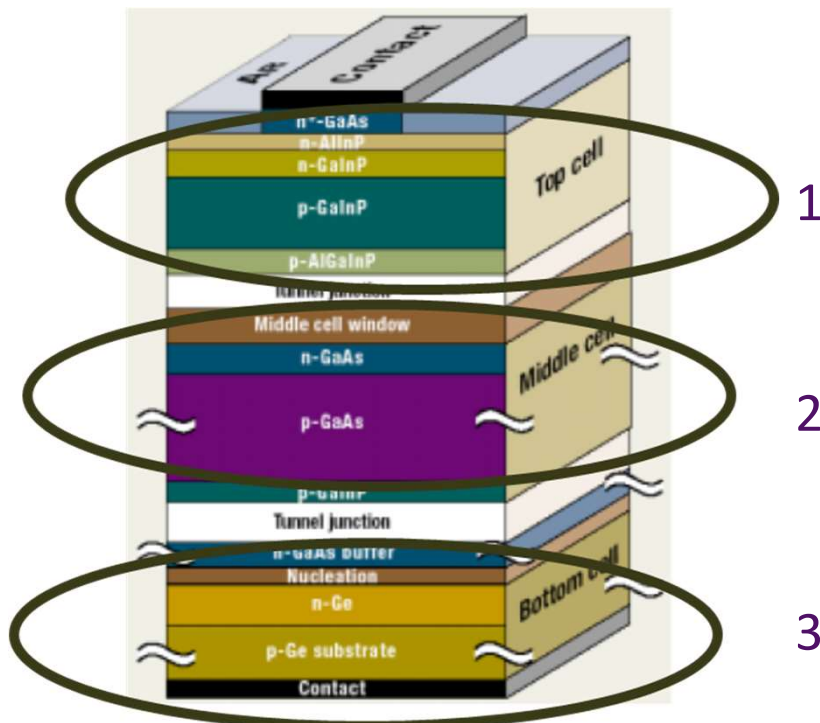
High Quality Volume Manufacturing



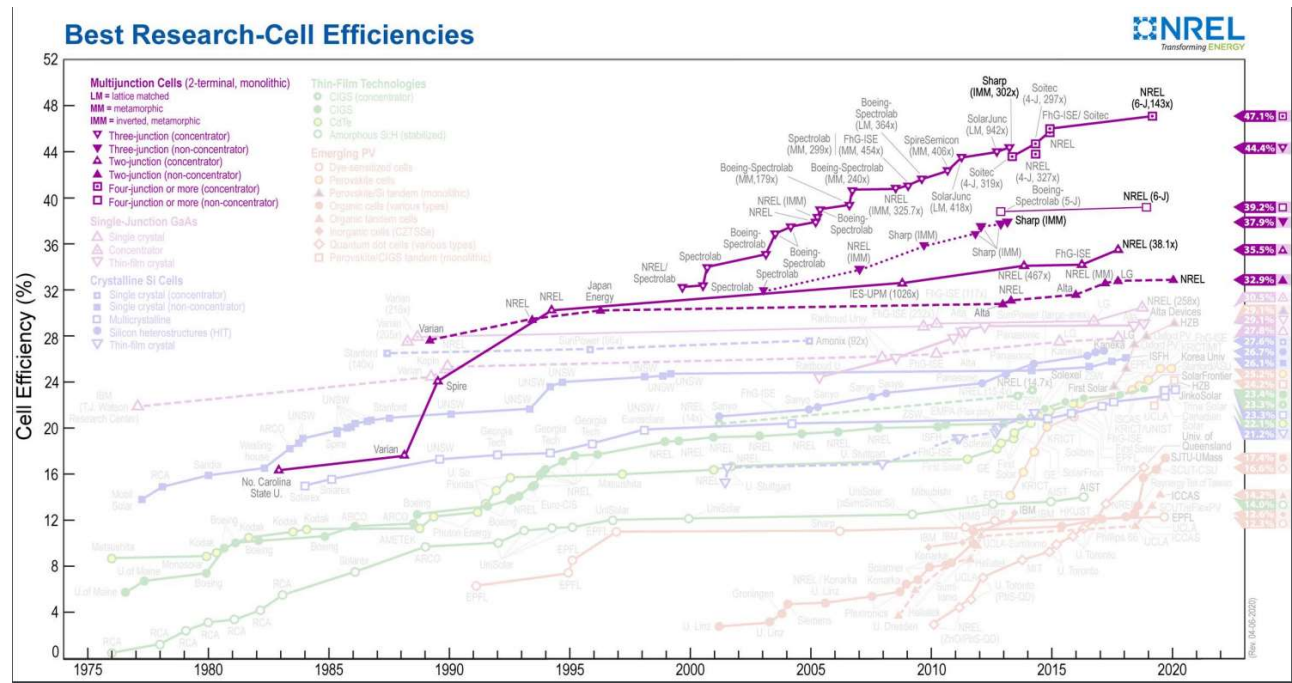
Premier Materials Solutions Partner



IQE's Core Business: EPITAXY.. the critical compound semiconductor process



'Conventional' 3 Junction solar cell – the technology of choice for space power applications – all lattice-matched

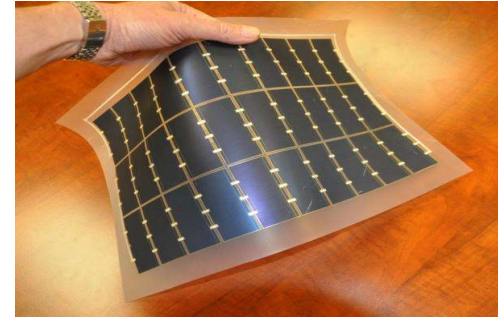


Highest conversion efficiencies, but high cost of III-V semiconductor multijunction cells precludes mass adoption for terrestrial PV applications



Applications

- Technology of choice for space power applications
 - High efficiency
 - Radiation hardness
- LEO megaconstellations
- High Altitude UAVs (HAPS)
 - Lightweight, flexible PV
 - Highest specific power (>3000W/kg)
- Concentrated PV?



PHASA-35 (BAe Systems)

HIPERION OVERVIEW

❑ The project in numbers

- 4 years duration (end: 08.2023)
- Grant 10.6 MEUR
- 16 partners industry (including IQE), solar installers, research centers)

❑ Challenge

Increase the competitiveness of the EU PV manufacturing industry with innovative solutions

❑ Objective

Demonstrating **manufacturing and product innovation** for highly performing PV technologies at **pilot line level** with potential to be scale-up to **GW-size**



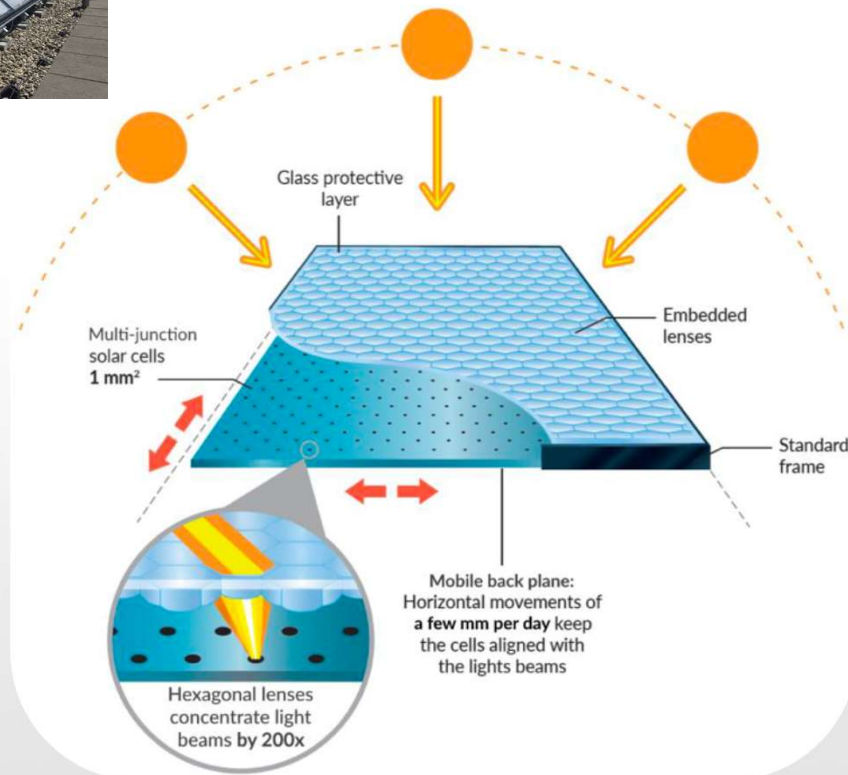
HIPERION Consortium Agreement
(GA no. 857775)

CALL IDENTIFIER: H2020-LC-SC3-2019-RES-IA-CSA

Topic: LC-SC3-RES-15-2019

PROJECT ID: 857775

INSOLIGHT's technology at a glance



- Sunlight is **concentrated** on an array of highly efficient micro solar cells (multi-junctions)
- **Integrated** micro-tracking (module not moving)
- Standard **flat panel** form factor mountable on any racks or rooftops
- Si PV back plane captures diffuse solar radiation

<https://hiperion-project.eu/>