

Consortium



- **12 Partners**
- **9 Countries**
- **2 Continents**
- **6 EC-AC members (Spain, France, Germany, Lithuania, Norway, Moldova)**
- **3 non EC-AC members (Belarus, Morocco, South Africa)**
- **6 Research Institutes**
- **4 Universities**
- **2 Companies**
- **More than 70 researchers involved**

Acronym: INFINITE-CELL
Full Title: International cooperation for the development of cost-efficient kesterite/c-Si thin film next generation tandem solar cells
Project N°: 777968
Consortium: IREC (ES), SINTEF (NO), CNRS (FR), UAM (ES), IAP-ASM (MD), HZB (DE), SUNGA (MD), MET (LT), MASCIR (MA), BSUIR (BY), UM5 Rabat (MA), UWC (ZA)
Project website: www.infinite-cell.eu

Contact

Dr. Edgardo Saucedo
 Deputy Head of the Solar Energy Materials & Systems Group
 IREC – Catalonia Institute for Energy Research
 c. Jardins de les Dones de Negre 1 2pl.
 08930 Sant Adrià del Besòs (Barcelona), Spain
 e-mail: esaucedo@irec.cat
 Tel.: +34933562615

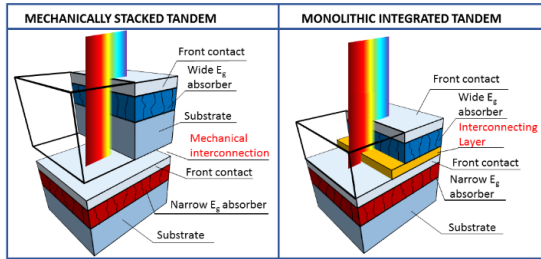
INFINITE-CELL aims to establish and consolidate an International and Intersectoral Cooperation Project between 6 Academic European and Associated Countries Institutions, 2 European Companies, and 4 Third Country Academic Institutions, for the sustainable development of cost-efficient advanced photovoltaic tandem devices, based on the combination of **wide band-gap kesterite** ($Cu_2Zn(Si,Ge,Sn)(S,Se)_4$) technologies as top cell, and **low cost c-Si thin film** ones as bottom cell, thanks to the collaborative combination of the know-how and partnership generated in two previous and successful FP7 projects: **PVICOKEST (269167)** and **EUROSUNMED (608593)**



Objectives and Targets

To implement **293 PMs** of International and Intersectoral secondments for the optimization of materials, processes and devices to achieve:

- A wide band-gap (>1.50 eV) kesterite solar cell device with efficiency higher than 14%, compatible with tandem concepts (onto semi-transparent substrates).
- A low cost c-Si thin film solar cell based on recycled materials, with efficiency higher than 16%, compatible with tandem concepts
- A stacked kesterite/Si tandem solar cell with efficiency exceeding 20%
- A monolithically integrated kesterite/Si tandem solar cell with efficiency exceeding 15%



Why Kesterite/c-Si TF tandem devices?

- Is the only solution relying in CRM free technologies
- c-Si TF is a perfect partner for bottom cell (narrow E_g) and can support the temperatures required for monolithic integration with chalcogenides
- Kesterite is the only CRM free thin film PV technology, with tunable E_g, efficiencies already at 14-15% level and excellent stability
- Both technologies can be fully compatible for both: stacked and monolithically integrated tandem devices

INFINITE-CELL is structured in 7 complementary work packages:

- WP1** – Bottom cell: low cost c-Si TF based devices
- WP2** – Top cell: kesterite based devices
- WP3** – Tandem integration: stacked and monolithically integrated devices
- WP4** – Devices simulation and characterization
- WP5** – Dissemination, Training and Exploitation
- WP6** – Coordination and Management
- WP7** – Ethics requirements

