

TWILL-BIPV

IT WILL Be Integrated Photovoltaic



SMART ENERGY

The TWILL-BIPV project aims to improve the aesthetics and performance of PV modules by developing an innovative cell interconnection technology for bifacial solar cells, leading to lower costs, scalable manufacture and higher efficiency.

IT WILL Be Integrated Photovoltaic

Solar panels, or photovoltaics (PV), will be a key technology in our transition to renewable energy. Although PV is already a successful technology, to meet the energy needs of the future, it must be further optimized to be more efficient, affordable, scalable and aesthetically attractive. The TWILL-BIPV project aims to improve the aesthetics and performance of PV modules by developing an innovative technology for bifacial solar cells, leading to lower costs, scalable manufacture and higher efficiency.

Keeping up with increasing demand

While photovoltaics is already a booming business, the performance increase of PV modules and economies of scale will not be sufficient to meet electricity demands at an acceptable cost and use of land. TWILL-BIPV will support the demand for new PV installations and capacity by boosting PV module performance without impacting cost. More, the project will enable a more flexible, attractive integration of PV modules into buildings, reducing land needs and bringing the energy source closer to consumers.

Efficient, attractive, affordable energy source

The TWILL-BIPV consortium consists of industry partners with expertise in solar energy, the use of fabrics in circuits, process and material validation, industrial soldering and automation. They will develop a multi-wire cell interconnection technology that improves the aesthetics of the PV module, boosts its capacity, simplifies its manufacture and reduces its costs and land requirements.

Design and manufacturing processes that scale

Four major innovation goals have been set by consortium partners, which all revolve around improving PV technologies, materials and processes:

1. exploring interconnection foil assembly approaches;
2. determining the most effective low-temperature soldering technique;
3. developing a faster, low-temperature industrial-scale fabrication method that doesn't compromise the PV module's bifacial performance;
4. investigating the technology's reliability.

Overcoming mainstream PV market barriers

The project will result in a standard 60-cell PV module and a building-integrated PV (BIPV) module assembled using pilot-ready processes, tools and materials. These products will become important differentiators for consortium partners, and ultimately ease the introduction of the new technologies into the mainstream market.

TWILL-BIPV

IT WILL Be Integrated Photovoltaic.

TWILL-BIPV is an imec.icon research project funded by imec, Innoviris and Agentschap Innoveren & Ondernemen.

It started on 01.06.2018 and is set to run until 31.05.2020.

Project information

Industry

- Arkema France Sa
- Ipte Factory Automation
- Soltech
- VdS Weaving

Research

- EA-imec
- PVMT-imec

Contact

- Project lead: Stefan Dewallef
- Research lead: Eszter Voroshazi
- Proposal Manager: Eszter Voroshazi
- Innovation manager: Annelies Vandamme