

Tech4Win consortium leads an ambitious and disruptive EC funded project for the development of the future new generation of transparent smart solar windows, converting the UV and IR light from the sun into electricity

- **Tech4Win is leading the path towards the development of a new generation of transparent smart solar windows with improved performance and very high optical quality with a highly innovative transparent photovoltaic (PV) window concept that will transform the UV and IR light from the sun into electricity**
- **The project began in January 2019 and is setting the basis to boost the future building-integrated photovoltaics (BIPV) product portfolio by the development of a highly innovative non-intrusive window concept.**

Barcelona, February 6, 2020.- Tech4Win is developing a highly innovative transparent photovoltaic (PV) window concept that is based on the integration of an ultraviolet (UV) selective coating, working as a UV filter and as a PV device converting the UV light from the sun into electricity, and an infrared (IR) selective PV device that will transform the IR light from the sun into electricity, allowing unhampered transmission of the visible light through the window structure. This window concept maximizes the generation of electricity from the non-visible parts of the Solar light, keeping a high level of transparency in the visible region and combining sustainable and industrial compatible technologies. The inclusion of a highly efficient UV filter will also prevent from UV induced degradation of the IR devices, boosting the robustness and stability of the devices as required for long lifetime windows. The main features and benefits of the product will include:

- High transparency degree, improving not only the feeling of comfort of the users, but also lowering artificial lighting expenses during the day.
- In-situ energy production, allowing reducing the energy bills and promoting sustainable energy management models such as self-consumption.
- Energy savings from thermal behaviour. As such PV windows block much of the infrared radiation, they will cut down on air conditioning needs, further reducing energy use and operating costs in buildings.
- Cost-effective solution (200 €/m²) and cheaper standard sales price compared to other alternatives in the market.
- Environmental friendly, including energy-efficient labels and product footprint certification, as well as it will be able to be introduced as a green building material in those projects certified by sustainable architecture standards.
- Sustainable brand's reputation by investing in building-integrated photovoltaics (BIPV). This resulting in larger number of clients, more sales and more economic benefit.

Availability of high performing smart solar windows combining all these characteristics is challenging for the achievement of high energy efficient buildings, and will contribute to an increased penetration of in-situ renewable energy sources, contributing to a reduction of CO₂ emissions and setting the technological basis for the transition towards a sustainable green energy model.

According to Prof. Dr. Alejandro Pérez-Rodríguez, group leader of the Solar Energy Materials and Systems Group at IREC and project coordinator, **“the successful outcome of this project will place on the market robust solar windows in approximately 7-8 years. This will be made possible through a strong consortium built by the symbiosis of global-recognized academia partners and well-positioned companies in European BIPV sector, coordinated by IREC”**

At the forefront of this ambitious project, there is a well-balanced multi-sectorial consortium comprising reference Research Centers in the different PV technologies involved in the window concept, together with high-tech European Companies from different sectors, including relevant stakeholders involved in the value chain (Organic materials, Industrial Equipment developers, PV module producers and BIPV system manufacturers). The consortium is composed by 8 partners from 5 different countries, including 4 flagship RTD organizations (IREC, CEA, IMEC and TEKNIKER, with a great knowledge in advanced PV devices and technologies), 3 technology-based SMEs (ONYX, ADVENT and KENOSISTEC, with solid background in material and equipment development and in manufacturing of BIPV products) and a large company (ARMOR Beautiful Light ABL, OPV modules producer with a large experience in developing OPV manufacturing lines). Most partners have an international dimension and count on previous experiences participating and leading EU projects, ensuring that exploitable results reach international markets. The vast experience of the consortium will be reinforced by the deep commitment of an International Advisory Board (IAB) composed of benchmarking stakeholders of the construction industry.

Learn more about Tech4Win project in the website <http://www.tech4win.eu/>

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First prototypes of chalcogenide and oxide based UV multifunctional coatings showing high transparency level



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