

What SUNFLOWER brings them ...



"The SUNFLOWER project has provided an environment to advance the performance of high barrier films.

Thanks to SUNFLOWER, Amcor has made a big leap forward with Ultra Barrier technology, and reached moisture barrier levels previously not achievable using industrial scale production.

We look forward to bringing these significant advancements to the market, as we prepare to industrialise solutions for new applications such as OPV solar encapsulation."

[Amcor AG](#), Switzerland



"For BELECTRIC OPV, the SUNFLOWER project has been a big success as it has enabled us to develop OPV technology with a better market fit.

As a final highlight, we were able to develop, together with the SUNFLOWER partners, three different OPV product demonstrators, each with huge market potential and realized in collaboration with renowned companies in their respective fields: a vertical, OPV window blind system; an OPV bag developed with the start-up Bündle Concepts; and an OPV glass pane realized with Bischoff Glastechnik AG.

This proves the unlimited opportunities to develop novel products enabled by printed OPV technology."

[Belectric OPV GmbH](#), Germany

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“The Sunflower programme enabled DTF to successfully explore strategies for increasing the lifetime of polyester film in outdoor applications where both UV and hydrolysis stability is critical.

Accelerated weathering with long lifetime films can take over two years and over the course of the project we were able to build up a picture of additive levels to give the performance level for a given lifetime requirement. We anticipate that the knowledge we have built up will be exploited in frontsheet developments for flexible PV devices and also in other market areas, offering DTF new business opportunities. “

Within the project DTF also built up good relationships with the other partner companies which has led to additional programmes of work related to flexible PV and in other areas. The opportunity to build strong relationships with other companies was one of the main reasons DTF joined the programme and this perhaps "soft" benefit is proving to be as important to us as the film developments for Sunflower.

[Dupont Teijin Films UK Ltd](#), United Kingdom



“Fluxim was able to interact closely with leading players in the organic PV community and develop our R&D tools for cell and module characterization to the specific needs of the industry.

We managed to have our prototype tools applied and validated in the consortium and are thrilled to have released new products even in the course of this project. This concerns our opto-electronic cell simulation software Setfos, the all-in-one measurement platform Paios as well as the large-area device simulator Laoss, the latter will be released to the market very soon.

The Sunflower project helped us to deliver the R&D tools required to advance the OPV industry.”

[Fluxim AG](#), Switzerland

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“Through the European Sunflower consortium, Genes’Ink had the chance to benefit from the expertise of its industrial and academic partners. All this knowledge helped us for the development and the production of inks at an industrial scale for OPV manufacturing.

One objective of Sunflower was to enhance the industrial development of OPVs and our products will fulfil the lack on the market of inorganic material solutions used for the production of ETL (Electron Transport Layers).



New ZnO inks were produced and their electrical properties were studied through Sunflower. 2 patents were deposited and accepted for these developments and a chemical engineer was also hired.

Thereafter, we wish to keep on going with the development and the commercialization of new metallic oxides for the printed electronics market.”

[Genes'ink](#), France



“SAES contributed to SUNFLOWER’s success by developing a multilayered, high-barrier structure in which SAES active adhesives were combined with inorganic and hybrid layers from consortium partners.

A fruitful collaboration with those partners allowed the SAES products to be tested and validated in an application environment. Leveraging on our proprietary functional polymer composite technology, we are continuously developing our active edge sealants, active transparent fillers, and dispensable getters for both rigid and flexible substrates.

In order to pursue the fast-growing OLED and OPV markets, we remain fully engaged in very fruitful collaborations with other hi-tech materials companies and specialized equipment makers alike. “

[Saes Getter S.P.A.](#), Italy

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“Within the framework of the Sunflower consortium Merck has provided novel monomers to the consortium to enable the synthesis of promising new materials classes, as well as providing key polymers to the partners to facilitate the production of the demonstrators produced within the project.

Merck is significantly investing in OPV R&D to unlock the strong potential of this new technology. There are numerous benefits that OPV can offer such as flexibility, semi-transparency, ease of integration and colour portfolio. These benefits allow OPV to also address many applications which have not been realizable with classical PV technologies.

As a complementary PV technology OPV will increase the solution space for green energy generation and serve new market segments.

Merck is developing the active organic ingredients on a detailed molecular level. Sophisticated molecular engineering is used to achieve e.g. high performance and desired colour but also green aspects like full recyclability. Leveraging the long experience in similar material classes like liquid crystals and OLED Merck aims to become a leading materials supplier in the field, providing high quality solutions that enable our customers to drive mass adoption of OPV.”

[Merck Chemicals Ltd.](#), United Kingdom