



Press Release

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BELECTRIC OPV releases its novel Design-2-Module tool for easy access to customized OPV products

To meet the steadily increasing interest in customized organic PV modules, BELECTRIC OPV developed a design tool that turns a customer's vision into a customized product within days.

Nuremberg, Germany: The market uptake of customized organic photovoltaic (OPV) products is steadily increasing, with customers representing a variety of industry segments, ranging from small and compact devices for electronics to large formats for building integrated installations. BELECTRIC OPV has brought the usability and acceptance of OPV to a new level by being able to design and manufacture modules in customised shapes and various colours. The customisation of an OPV module not only includes the choice of colour and shape but also involves the tailoring of the device electrical characteristics, such as adjusting voltage level and performance, for the intended usage scenario, e.g. indoor versus outdoor application.

BELECTRIC OPV has invested great effort in the last few years to bring its manufacturing technology to a point that enables the utmost freedom of design. This is achieved by combining freeform laser structuring processes with large-area coating and printing technologies, all of which are based on reliable industrial processes leading to a robust production process as well as easy and cost-effective scalability. The results of these developments have been demonstrated at the German Pavilion at the World EXPO 2015 in Milan, where BELECTRIC and its project partners have installed an OPV system comprising hexagonal modules with a cell layout designed to be aesthetically pleasing. To make such an offering more easily accessible to its customers, BELECTRIC OPV has now revealed a newly-developed design tool, called "Design-2-Module" configurator, which enables the conversion of a customer's own specifications into a module layout including all relevant technical design parameters by means of computer optimization and automated CAD output. The D2M tool also simultaneously generates all the necessary technical input files for each production process step. Accordingly, the time and effort needed to convert a customer specification into a full set of production data can be greatly reduced. The time-to-market of a customized design is, therefore, no longer dominated by the work spent on module layouts. Furthermore, this tool is capable of grouping different module types onto a single roll of flexible substrate due to the harmonisation and standardisation of design rules. In turn, the time needed to produce also small series of customised products is reduced whilst the economics of such products are increased.

"Offering improved access and maximum benefit to the customer is a clear target of our internal developments", comments Hermann Issa (Director Business Development and Sales, BELECTRIC OPV). "We are constantly benchmarking ourselves on how we deal with the customisation of our products. After being able to offer fully customer-specific modules, we also wanted to further reduce the barrier for adopting OPV in integrated products." Mr. Issa adds: "With the addition of the Design-2-Module tool and the developments made for the EXPO project in terms of systemisation, we are now able to deliver complete OPV systems and not only a set of components. These competencies aid us with the integration of OPV into existing or newly developed products."

Design-2-Module is part of BELECTRIC OPV's general approach to make OPV accessible to different markets and suitable for different requirements by combining developments all along the value chain, including a manufacturing process that now also facilitates customer involvement.

"With Design-2-Module we have enhanced customer participation and reduced module design turnaround time to meet the demands of the fast-paced consumer electronics market. Now we are working on the

Publication and reprint free of charge; specimen copy is requested.

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implementation of the D2M tool into a web-based application. The current version of the web interface enables you to place your specification by choosing the power output and electrical contacting as well as uploading your desired module shape. After the specifications are processed in house, you will receive the module layout together with a quote. In the next version we will integrate our D2M tool directly into the web interface, so that you can order immediately after you have approved the module layout and performance tailored to your specifications online. We are not yet there, but the most important step has been made”, stated Dr Ralph Paetzold (CEO BELECTIC OPV). “Furthermore, customisation for us does not necessarily correspond to a certain understanding of high or low volume. Especially if customers want large volumes, they are less likely to accept a standard. Therefore, it is important that the manufacturing process can bundle and handle various order volumes in order to take advantage of economy of scale. By using Design-2-Module we are now able to combine most of our volumes, all the rest is now just logistics.”

For more information about D2M and the integrated web interface please visit www.solarte.de.



Picture: Example of an individually designed OPV module



Picture: Team review of a customized OPV module

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About BELECTRIC® OPV: BELECTRIC OPV GmbH, with offices in Nuremberg and Kitzingen, is the market leader in the area of organic photovoltaics. BELECTRIC OPV produces bespoke organic solar cells and systems, tailored to customers' specific requirements. Furthermore, BELECTRIC OPV is active in the area of research and development, in order to continuously provide their customers with creative and innovative solutions. Additionally, BELECTRIC OPV employs a unique manufacturing process, based on a combination of printing, lamination and laser structuring processes. These give a distinct advantage due to their high scalability and, moreover, allow the implementation of custom designs. BELECTRIC OPV supports its customers with the integration of OPV in existing as well as new products and delivers the accompanying system solutions. BELECTRIC OPV currently has two product lines: SOLARTE® for architects and designers and POWER PLASTIC® for large scale industrial applications. Products from BELECTRIC OPV stand for innovation, quality, and design. Further information can be found at www.solarte.com.

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