

News Release

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Innovation Award for Organic Photovoltaics at the BAU 2017

- **BELECTRIC OPV receives the Innovation Award Architecture + Building for novel organic photovoltaic modules co-developed with Merck KGaA, Darmstadt, Germany**
- **The award honors designers and manufacturers of innovative products in the construction industry**

Darmstadt, Germany, January 19, 2017 – Merck KGaA, Darmstadt, Germany, a leading science and technology company, today announced that OPV modules, jointly developed with BELECTRIC OPV GmbH, a market leader in organic photovoltaics (OPV), received the Innovation Award Architecture + Building at the BAU 2017 on Monday January 16th. The BAU is world's leading trade fair for architecture, materials and systems. It has proven itself as an efficient international contact and business platform for the construction industry. The exhibited, active solar films produced by BELECTRIC OPV under the brand name OPVIUS are using the latest generation of lisicon® materials from Merck KGaA, Darmstadt, Germany, and were optimized for building integrated photovoltaics (BIPV).

To meet the 2050 CO₂ emission targets, nearly zero-energy buildings will become generally mandatory in the EU from 2021 on. To reach these new standards the use of renewables will be essential and BIPV, meaning active electricity generation in the building envelope, will be a key enabler.

Organic photovoltaics constitute an important and highly promising technology in the world-wide adoption and integration of photovoltaics (PV) into buildings. OPV is a fundamentally different approach compared to classical PV, and uses cost effective

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and eco-friendly roll-to-roll manufacturing. The printed OPV modules are thin and flexible laminates, which are easily added to a variety of construction materials and are compatible with standard glass lamination process. In addition, the larger inherent freedom of design and versatile adaptability also allow OPV to better serve functional and aesthetic demands from architects compared to classic PV technologies. Examples are the unique choice of colors, shapes and degrees of transparency, which strongly improve the prospects to comply with preferred façade designs. Furthermore, the flexible and light-weight nature of OPV allows the straightforward compatibility with upcoming membrane architecture and other light-weight solutions.

David Müller, Head of Marketing Photovoltaics at Merck KGaA, Darmstadt, Germany, says, "Building integrated PV will play an essential role in future energy-efficient buildings, but existing solutions often do not satisfy the needs of architects. We are particularly encouraged by the decision of the jury of renowned architects to acknowledge OPV for satisfying both design and functionality."

"Organic PV is no longer an R&D topic. Together with further specialized partners, we have realized several reference projects with completely different requirements and setups in the last several years," explains Mr. Hermann Issa, Director of Business Development and Sales at Belectric OPV GmbH. Working with our partner Carl Stahl, we have integrated OPV active laminates into the Solar Trees for the German Pavilion at the EXPO 2015 in Milan. Additionally, with BGT (Bischoff Glastechnik AG) we have installed laminated OPV module in the glass façades of different buildings while together with Taiyo Europe we have integrated OPV in ETFE membranes. This shows the nearly endless possibilities OPV can offer."

Visitors to the BAU exhibition in Munich will find the OPV modules exhibited in Hall B2 Booth 101. Further innovative products from Merck KGaA, Darmstadt, Germany, such as liquid crystal windows can be found at our booth in Hall C2, Booth 308.

About the Award

For the 13th time the architectural journals AIT and xia IntelligenteArchitektur in cooperation with Messe Munich, initiated the Innovation Award Architecture+ Building during the BAU in Munich. The Innovation Award is intended for manufacturers of innovative products and materials for the complete contract, industrial building segment and for residential construction, as well as for architects, interior designers and designers who work in these areas. The jury consists of sixteen renowned German architects and interior designers.

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About BELECTRIC OPV GmbH

BELECTRIC OPV GmbH, with offices in Nuremberg and Kitzingen, is the market leader in organic photovoltaics. BELECTRIC OPV produces bespoke organic solar cells and systems, tailored to customers' specific requirements. Furthermore, BELECTRIC OPV is active in research and development, 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.

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About Merck KGaA, Darmstadt, Germany

Merck KGaA, Darmstadt, Germany, is a leading science and technology company in healthcare, life science and performance materials. Around 50,000 employees work to further develop technologies that improve and enhance life – from biopharmaceutical therapies to treat cancer or multiple sclerosis, cutting-edge systems for scientific research and production, to liquid crystals for smartphones and LCD televisions. In 2015, Merck KGaA, Darmstadt, Germany, generated sales of € 12.85 billion in 66 countries.

Founded in 1668, Merck KGaA, Darmstadt, Germany, is the world's oldest pharmaceutical and chemical company. The founding family remains the majority owner of the publicly listed corporate group. Merck KGaA, Darmstadt, Germany, holds the global rights to the Merck KGaA, Darmstadt, Germany, name and brand. The only exceptions are the United States and Canada, where the company operates as EMD Serono, MilliporeSigma and EMD Performance Materials.