

Novartis Pavillon

Zero-Energy Media Façade

Muenchenstein, 13 May 2022

The Novartis Pavillon zero-energy media façade was created by iart in collaboration with AMDL CIRCLE and Michele De Lucchi. Combining organic photovoltaics and LEDs, it spans the recently opened Novartis Pavillon on the Novartis Campus in Basel, and illustrates the potential of organic photovoltaics in architecture.

The zero-energy media façade features a total of 10,000 diamond-shaped solar modules. Embedded within are LEDs which not only shine outwards, but also in the direction of the metal shell beneath. The light reflects off the shell, and shimmers outwards through the semi-transparent solar modules, resulting in a visually multi-layered membrane with the ability to display content.

Consuming only as much electrical energy as it is capable of producing, the membrane becomes a zero-energy media façade. All made possible by the carbon-based organic solar modules, which were custom-made for the Novartis Pavillon.

Their design and physical properties make these organic solar modules ideal for use on the dome-shaped Novartis Pavillon, as they can be produced in various shapes, are bendable, translucent, and extremely light-sensitive. Which means they can also be installed in spots not ideally oriented towards the sun. They also contain less grey energy than silicon solar modules, making them interesting from a sustainability perspective.

The arrangement of the solar modules on the dome-shaped Novartis Pavillon enables the measurement of the electricity produced in all directions. Data collected during the first few months of operation shows that the façade produces enough power to display text in the daytime - when the exhibition is open - and digital art animations for up to two hours after sunset. An extensive analysis will be possible in a few months when sufficient data is available.

Facts and figures

Solar modules produced by	ASCA
Organic solar modules	10'680
LED units	15'120 (bi-directional, 30'240 LEDs in total)
Tubes in subconstruction	22'536
Nodes in subconstruction	11'608
Facade surface area	2'471 m ²
Photovoltaic surface area	1'333 m ²
Maximum capacity	36 kWp
Power production per year (estimate)	20 MWh

Press contact

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