Building Integrated Photovoltaic panels on Demand 2

Publieke samenvatting / Public summary

Aanleiding

The reason for the BIPVpod-2 project is an unmet demand for affordable customized solar panels for aesthetic integration in buildings. As part of aesthetic topics, it should be noted that various BIPV solutions can make use of the specific viewing angles at street level and the much different angle of the insolation. Moreover, integration of PV in the built environment also increases requirements for durability in terms of functionality, structural integrity and appearance. A wide variety of companies in the value chain collaborate with research institutions to develop 'panel on demand' (pod) technology, in which these issues are addressed. There is international cooperation in Solar ERA-NET. In addition to the successful development of BIPV prototypes in BIPVpod-1, BIPVpod-2 will connect the mass production of thin-film panel half products with end customization in respect to size variability, aesthetics in terms of homogeneity and freedom of color. These topics will be directed towards the needs for BIPV applications and specific issues with viewing angle and long term durability of appearance will be addressed.

Doelstelling

The goal of the project is to develop technology for low-cost color-tunable thin-film PV panels to enable customization at a specified size and shape for the customer and capable of handling partial shadow without compromising the output. The applications focus on tilted roofs and façade, where coloring and general appearance are considered of utmost

Projectinformatie / Project information

Projectnummer / Project number
TEUE318007
Subsidiebedrag / Grant amount
€ 411.190,00

Algemene informatie / General information

Penvoerder / Secretariat
Nederlandse Organisatie voor toegepast-natuurwetenschappelijk onderzoek TNO

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importance.

Korte omschrijving

1. Implementation back end interconnection technology The new back end interconnection technology offers ultimate design freedom in panel size at reduced cost, because standard mass production of half products will be used prior to final customization. Implementation of such thin-film panels comes together with practical issues such as edge sealing and combined aesthetical topics, such as concealed and durable electric connections, and related technologies that need to be compatible with various sizes. 2. Implementing new color technology New spectral selective transmitting non-pigment coloring for improved appearance, cost-effectiveness and panel performance with guaranteed durability adds to the 'standard' coloring based on pigments. Moreover, impact of viewing angles, long term exposure to building environment and demands on homogeneity are issues that will be addressed. 3. Durability tests and improvement All of the previous and current developments will be tested in a live environment as well as in accelerated tests to monitor the durability of each technology (such as coloring and interconnection) and the fully integrated BIPV products.

Resultaat

The result of the project is a validated method for local customization of panels which must satisfy optimized appearance and application-specific reliability assurances, while mass production of half products ensures the cost effectiveness of this approach. Special attention is paid to longer term reliability guarantees on the appearance (accelerated life time testing of coloring of PV panels).

De data in deze applicatie is afkomstig van de Rijksdienst voor Ondernemend Nederland (RVO) en wordt in samenwerking met de Topsector Energie ontsloten.
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