High Efficiency Coloured Solar Modules for Facades

Publieke samenvatting / Public summary

Aanleiding

Real estate owners and project developers are pushed to realize energy neutral buildings, thanks to commercial drivers (lower utility bills, fiscal regulations, LEED/BREAAM certification) and legal drivers (Near Zero Energy directive for EU buildings). For buildings with more than a few storeys, roof space is often insufficient to generate its electricity needs. Therefore, PV modules will be more and more applied to façades. Current options for integration of PV modules in façades are insufficient due to either a limited aesthetic quality or an aesthetic integration that has lower efficiency and/or a higher cost price.

Doelstelling

In this project, Exasun and its partners develop the ColourMax High Efficiency PV Façade Technology, which combines all desirable properties: a conversion efficiency of 14-16%, only marginally higher cost per Wp, and most importantly, it is available in any colour.

Korte omschrijving

Exasun uses the experience gained at its sister company LineSolar BV regarding modelling sunlight and Exasun optimises the design of the ColourMax technology. Accuracy moulds will be developed and tested by Sumipro. Dercom develops a suitable colour system of 3 or 4 coatings for outdoor application, with which any colour or print can be created. These coatings are selectively applied to create the desired aesthetical effect without

Projectinformatie / Project information

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Algemene informatie / General information

Penvoerder / Secretariat
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Publicaties en materialen / Publications and attachments

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compromising output. Subsequently, Exasun will produce small scale prototypes for testing. Finally, a number of prototypes is tested indoor and outdoor. Indoor tests are aimed at determining durability / lifetime aspects as well as initial performance. Outdoor tests performed by Zuyd are focused on field testing and comparison to alternative technologies.

Resultaat

The project results in a feasible product design, combining the ColourMax technology, inkjettable colour coatings for outdoor application, integrated in glass-glass BIPV modules that can serve as building components, replacing commonly used façade panels from glass, plastic, aluminium or stone. The project contributes to the development of multifunctional building components (IDEEGO progam line 3). Prototype products are field tested at the District of Tomorrow and output performance and aesthetics are compared to alternative technologies.

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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