Capturing light for high-efficiency at all incident angels

Publieke samenvatting / Public summary

Aanleiding

Draagt bij aan het verlagen van de productiekosten, verhogen van de omzettingsrendementen en het ontwikkelen van innovatieve producten en diensten op het niveau van een PV systeem

Doelstelling

The main goal of the project is to develop a module technology that will result in 4 to 5% more electrical current for the same number of cells in a module at a reduced cost. The project will also demonstrate the suitability of materials and processes used for the encapsulation of LEDs for use in PV modules.

Korte omschrijving

The main goal of the project is to develop a module technology that will result in 4 to 5% more current for the same number of cells in a module at a reduced cost. The project will also demonstrate the suitability of materials and processes used for the encapsulation of LEDs for use in PV modules. The biggest driver in the crystalline silicon PV industry is cost reduction and efficiency improvement. This project aims to use materials and processes developed for the encapsulation of LEDs to improve light coupling into the cells in a module and to manufacture a low-cost encapsulant for use between the cells and back-sheet foil, particularly for a back-contact module. LEDs are encapsulated using a vacuum moulding technique. The encapsulant works as a lens to focus the light coming from the LED. For light coupling into a PV module, the encapsulant will be moulded to the

Projectinformatie / Project information

Projectnummer / Project number
TEZ0114001
Subsidiebedrag / Grant amount
€ 185.943,00

Algemene informatie / General information

Penvoerder / Secretariat
Towa Europe B.V.

Publicaties en materialen / Publications and attachments

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inside surface of the glass covering of the module. The encapsulant will be positioned above the space at the edge of the module and the space between the cells. The encapsulant will act as a lens to direct light into the cell which would otherwise fall on the back-sheet. The area of the edges and between the cells ac

Resultaat

Results from workpackages: 1. Design of coating on glass and coating on conductive back-sheet. 20 small scale prototypes and 5 reference modules. 2. Estimation of yearly yield expectation of module with coating on glass and comparison with reference module. 3. Determination of suitability of coatings from TOWA for use in PV modules. 4. Determination of commercial viability of coatings on glass and foil and comparison with conventional modules 5. Organisation of meeting, conference calls and overall reporting of project.

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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