



FOUR-JUNCTION SOLAR CELL DEVELOPED USING SOITEC'S EXPERTISE IN SEMICONDUCTOR MATERIALS SETS NEW EFFICIENCY RECORD OF 38.9% FOR CPV MODULE

Bernin (Grenoble), France, June 24th, 2015 - Soitec (Euronext Paris), a world leader in generating and manufacturing revolutionary semiconductor materials, today announced a new step in its SmartCell™ project, which leverages Soitec's leadership in the field of semiconductor materials to develop a four-junction solar cell. After setting an efficiency world record in December 2014, the four-junction SmartCell has now been successfully integrated in a concentrated photovoltaic (CPV) module, enabling a conversion of 38.9 percent of the solar energy into electrical power. This represents a significant increase compared to the existing world record for CPV modules.

Paul Boudre, CEO of Soitec, explained, *“While we announced earlier this year Soitec's refocus on its core semiconductor materials business, we also decided to keep all assets related to our SmartCell project in the company's new strategic scope. Indeed, it opens many business opportunities in different kinds of industries for Soitec. In the present case, the SmartCell paves the way for further cost reductions in solar energy, as it can be integrated in a record-efficiency CPV module suitable for mass production. This project demonstrates Soitec's leadership in the field of innovative semiconductor materials and technologies dedicated to high-performance applications as well as our ability to achieve major breakthroughs. I am very proud of the tremendous results achieved by our team.”*

CPV modules use Fresnel lenses to concentrate sunlight onto small, multi-junction solar cells. For the new world record in module efficiency, SmartCells were integrated in a CPV module employing the same platform as existing CPV modules using traditional three-junction cells. The SmartCells proved to have a superior conversion yield due to their four junctions.

The record module efficiency has been measured indoors and outdoors. More than 10,000 outdoor data sets have been recorded. Fraunhofer ISE performed a detailed analysis and revealed a module efficiency of 38.9 percent ± 0.9 percent for a 1,000 W/m² direct normal irradiation and a 25° C cell temperature. The record module has an aperture area of 812 cm² and uses 36 lenses, secondary optical elements and SmartCells.

As a stand-alone cell prior to being assembled in a CPV module, the SmartCell previously set a world record efficiency of 46.0 percent, as published on December 1, 2014 ([read press release](#)). Developed by Soitec in cooperation with Fraunhofer ISE and CEA-Leti, it contains world class expertise from solar cell laboratories and uses the technologies and know-how inherent in Soitec's Smart Cut™ and bonding techniques. These Soitec technologies enable optimal semiconductor combinations.

SmartCell's development has been supported by the German Federal Ministry for Economic Affairs and Energy and the Federal Ministry for Environment (through the Magnus project) and by the "Investissements d'Avenir" ("Invest for the Future") French government's investment program (through the Guepard project managed by the French environment and energy management agency - ADEME).

In addition to current applications devoted to the solar industry, the expertise in compound semiconductors developed by Soitec through this project opens new opportunities in other markets.

About Soitec:

Soitec (Euronext, Paris) is a world leader in designing and manufacturing high-performance semiconductor materials. The company uses its unique technologies and semiconductor expertise to serve the electronics and energy markets. With 3,600 patents worldwide, Soitec's strategy is based on disruptive innovation to answer its customers' needs for high performance, energy efficiency and cost competitiveness. Soitec has manufacturing facilities, R&D centers and offices in Europe, the U.S. and Asia. For more information, please visit www.soitec.com and follow us on Twitter: @Soitec_EN and @Soitec_FR.

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