



# Press Release

Freiburg  
June 24, 2015  
No. 17/15  
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## **“Virtual Lab” Specializes in Ultra-High Efficiency Solar Cells from Europe**

### **CEA Tech and Fraunhofer ISE Strengthen their Cooperation**

Germany and France are European leaders in the fields of semiconductor technology and solar cell research. In order to strengthen the already existing collaboration between the CEA’s technological research unit, CEA Tech in Grenoble and Chambéry, France and the German Fraunhofer ISE in Freiburg, the two partners have concluded a collaboration agreement to create a common “Virtual Lab”. With this lab, Fraunhofer ISE and CEA Tech intend to combine forces in near-industry research to further develop high efficiency multi-junction solar cells, educate young scientists and work together to develop prototypes of next generation ultra-high efficiency solar cells. The launch of the joint lab officially began in May 2015 with the signing of the collaboration agreement.

The main focus of the planned collaboration is to create the most efficient photovoltaic products possible. The existing expertise and excellent infrastructure of CEA Tech in microelectronics and photovoltaics, through its two labs Leti and Liten, and of Fraunhofer ISE in epitaxy and solar cell development are brought together in the “Virtual Lab” with the common goal of developing new products and opening up new markets. Aside from concentrator photovoltaics, the target markets include solar cells specifically developed for consumer devices as well as solar cells for the classic photovoltaic market. The technological results of the joint research agreement will regularly be presented to industry. In the medium term, collaboration with industry will contribute significantly to financing the “Virtual Lab.”

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“We are looking forward to working with our colleagues at CEA Tech on new ultra-efficient solar cells and bringing them to market,” says Dr Frank Dimroth, department head of “III-V – Epitaxy and Solar Cells” at Fraunhofer ISE. His French colleague Dr Thomas Signamarcheix, head of the Advanced Substrates Laboratory at CEA Tech adds: “We strongly believe that the collaboration between Fraunhofer ISE and CEA Tech will result in the best possible research offering for industry.” Dr Mathieu Baudrit, head of Concentrator Photovoltaics laboratory also stated: “Our aim is to develop new products in order to give European industry a competitive edge that ensures future success in the renewable energy markets.”

Both research institutes have excellent, long-standing experience in strategic partnerships. One successful example, developed with their common business partner Soitec, is the world record for solar cells, with a maximum efficiency of 46%.

This work has followed the “SolarBond” project, which was financed by the German Federal Ministry for Education and Research (BMBF) as well as the French National Research Agency (Agence Nationale de la Recherche - ANR). The solar cell is designed and developed under the French “Invest for the Future” (Investissements d’Avenir) program : GUEPARD.

The successful cooperation between these two countries in the field of high efficiency multi-junction solar cells has already been acknowledged through the German-French Industry Awards (AHK Chamber of Commerce). In 2011 this award was jointly given to CEA Tech (back then CEA-Leti) and Fraunhofer ISE. The mutual recognition between France and Germany of each other’s research was demonstrated in 2010, when Frank Dimroth of Fraunhofer ISE received the “Fondation Louis D” award, the most important science award to be presented in France.

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## **About CEA Tech**

CEA Tech leverages a unique innovation-driven culture and unrivalled expertise to develop and disseminate new technologies for industry. CEA Tech's three labs - Leti, Liten, and List - develop a broad portfolio of technologies for ICTs, energy, and healthcare. With 4,500 researchers and administrative staff dedicated to bringing manufacturers a broad range of Key Enabling Technologies and 600 priority patents applications per year, CEA Tech works with 80% of the CAC 40 companies, 500 SMBs, 145 international clients and achieves € 600 million annual turnover. CEA Tech provides businesses with access to Key Enabling Technologies (KETs) developed by other CEA operating divisions. Advanced KETs research and development requires a "critical mass" of world-class experts and equipment. CEA Tech's technology platforms are unique in Europe, bringing together at a single location all of the resources and technologies today's businesses need to drive innovation. CEA Tech is the CEA's (the French Atomic Energy and Alternative Energy Commission) technology research unit.

[www.cea-tech.fr](http://www.cea-tech.fr)

## **About Fraunhofer ISE**

With a staff of close to 1300, the Fraunhofer Institute for Solar Energy Systems ISE in Freiburg, Germany is the largest solar energy research institute in Europe. Fraunhofer ISE is committed to promoting sustainable, economic, safe and socially just energy supply systems based on renewable energies. Its research provides the technological foundations for supplying energy efficiently and on an environmentally sound basis in industrialized, threshold and developing countries throughout the world. Focusing on energy efficiency, energy conversion, energy distribution and energy storage, the Institute develops materials, components, systems and processes in twelve business areas and offers accredited testing facilities and other expert lab services to clients. The Institute is a member of the Fraunhofer-Gesellschaft, Europe's largest application-oriented research organization. For more information, visit us at [www.ise.fraunhofer.de](http://www.ise.fraunhofer.de)

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CEA Tech and Fraunhofer ISE combine forces in near-industry research with French-German "Virtual Lab". © Fraunhofer ISE, map from [OpenStreetMap](http://OpenStreetMap) – published under [ODbL](http://ODbL)



CEA Tech and Fraunhofer ISE develop ultra-high-efficiency PV products.  
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