

PRESS RELEASE

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ALL AROUND SOLAR! VERSATILE CLUSTER PLANT AT THE FRAUNHOFER FEP OPENS UP NEW PERSPECTIVES FOR MANUFACTURING THIN FILM SOLAR CELLS

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The new plant will allow Fraunhofer FEP researchers in Dresden to combine key vacuum technologies in any desired sequence and hence accelerate the development of favorably-priced solar cells.

If we follow the news, then the consequences of climate change appear to be already upon us. Abundantly clear also is that the availability of fossil fuels will be limited for the next generation. There is hence very broad consensus amongst the populace and politicians of the need to switch to alternative sources of energy provision as soon as possible. The political will has been indicated, ambitious targets have been set, and the photovoltaic technology sector is booming. So what is holding us back from generating our electricity from solar energy? The main reasons for many homeowners not opting for photovoltaic systems are too high set-up costs and too inefficient solar cells.

The Fraunhofer Institute for Electron Beam and Plasma Technology FEP is pursuing a very promising approach for drastically reducing the cost of manufacturing solar cells. Fraunhofer FEP researchers have long been involved in the development of vacuum-based technologies which allow large areas to be coated and structured at favorable cost. The commissioning of the new vacuum cluster plant was completed on Monday 13 December 2010, and is unique in Germany for the combination of processes it allows. The cluster plant was developed as part of the »Solarfabrik 2020« initiative, in collaboration with our regional industrial partner CREAVAC (Creative Vakuumbeschichtung GmbH). The project was financed under the federal government's Economic Stimulus Program 1. The plant will now allow Fraunhofer FEP scientists to combine important technologies for manufacturing material-efficient thin film solar cells.

A solar cell comprises several layers, namely at least one light-absorbing layer, transparent contact layers, and an encapsulation layer must be applied to the support material. The optimum coating and processing method is usually different for each layer. In order for the whole industrial procedure to be as efficient as possible, these methods must be optimally adapted to each other and the overall processing sequence must be free of interruption. The benefit of the new cluster plant is that the Fraunhofer FEP now has a facility to combine any desired sequence of surface technologies without having to release the vacuum.

Frank-Holm Rögner, head of the business unit »Electron Beam Processes« at the Fraunhofer FEP, summarizes the advantages: »The cluster plant puts us in a position of being able to directly integrate newly developed processes into the overall production chain. This allows developments in the area of thin film photovoltaic technology to be significantly accelerated! The plan is to invest further, and create similar facilities for high-purity vacuum processes and structured coatings, including for other applications of resource-efficient energy technology.« The knowledge acquired from the plant will pave the way for industrial in-line plants for the mass production of thin film solar cells. The high production rates using vacuum processes promise coating costs of at maximum a few euros per square meter.

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Further information on »Solarfabrik 2020« can be found at: www.solarfabrik2020.de

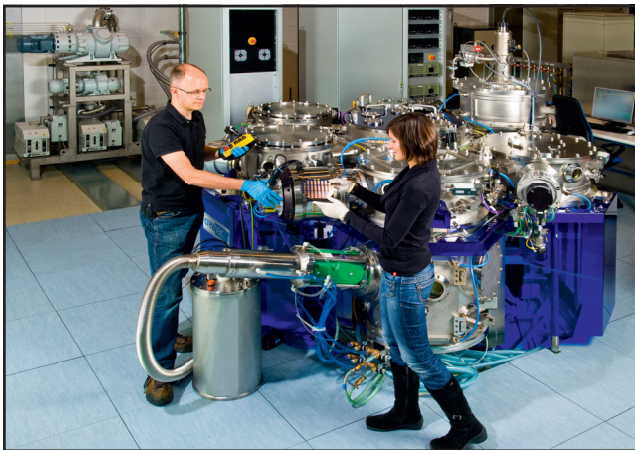
Information about the new cluster plant can be found at: www.fep.fraunhofer.de/enu/versan/ERICA.asp

Scientific contact:

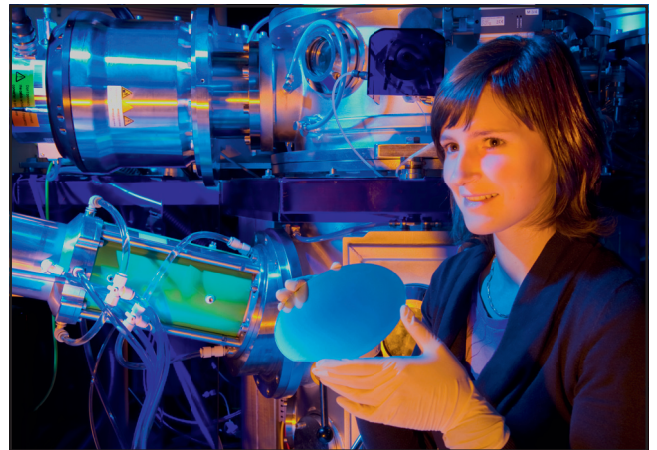
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The Swiss pocket knife for vacuum processes at the Fraunhofer FEP allows various possibilities for the manufacture of thin film solar cells.
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The cluster plant opens up new perspectives for favorably-priced photovoltaic systems.
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