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# Ground-breaking cermony held for new lab building at Fraunhofer ISE in Freiburg

# Staff at Europa's largest solar research institute now numbers one thousand

Since the Fraunhofer Institute for Solar Energy Systems ISE moved into its own premises nine years ago, the number of staff members, including students, has grown from 300 to 1000. Over the years, the office and lab space at Fraunhofer ISE, Europe's largest solar research institute, has steadily expanded. Now a new lab building is being constructed on Fraunhofer property on the Berliner Allee, one block from the Heidenhofstr. where the main building is situated. The ground-breaking ceremony took place on October 25, 2010.

"The State of Baden-Wurttemberg is investing in solar research through its support for the construction of the new lab building. We are convinced that solar energy holds the largest potential for expansion in the area of renewable energy and is developing into a billion euro market. To make use of this chance, high-performance research and a close partnership with industry are necessary," so the message from Prof. Dr. Peter Frankenberg, Minister of Science Baden-Wuerttemberg as conveyed by the Ministerial Director Klaus Tappeser.

The Undersecretary for the Federal Ministry of Education and Research Dr. Dietrich Nelle placed the expansion of Fraunhofer ISE against the backdrop of the impending turning point in the global energy supply: "Germany holds a leading position in renewable energy R&D, to which Fraunhofer ISE - the leading solar research institute in Europe - makes an outstanding contribution."

#### Fraunhofer Institute for Solar Energy Systems ISE

Heidenhofstr. 2 79110 Freiburg Germany Press and Public Relations Karin Schneider Phone +49 761 4588-5150 Fax +49 761 4588-9342 info@ise.fraunhofer.de

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The German Federal government and the State of Baden-Wuerttemberg are each providing fifty percent of the 10.2 million euros, the cost of the new lab building.

Nine years ago, the Fraunhofer Institute for Solar Energy Systems inaugurated its first owned institute building in the Heidenhofstr. under the motto "A House for the Sun." Because the number of staff had increased dramatically, however, the building was already too small on the moving date and several research groups and labs had to remain in rented quarters at the old site. Because these groups require special lab conditions, moving them to new quarters first became possible with the construction of the new lab building. The area for the new building was purchased by the Fraunhofer-Gesellschaft two years ago and is located on the corner of the Berliner Allee and Elsaesserstr., one block from the main building of Fraunhofer ISE.

Even before the new lab building was planned, there was no stop in the increasing need for new space as well as the rising number of personnel. Already in 2001, Fraunhofer ISE was forced to rent further space, including lab and office rooms in the Solar Info Center down the street. Two years ago, space was rented from Micronas in northwest Freiburg, and a former factory premises, one block from the main building of Fraunhofer ISE, was purchased. Additionally, in January 2010, Fraunhofer ISE moved into several floors of rented office space in a large office building nearby.

On the purchased land, the useable part of the existing building was accommodated at first for the Institute's purposes. Now a new lab building with a net floor space of 4240 m<sup>2</sup> is being constructed on the site.

#### Fraunhofer Institute for Solar Energy Systems ISE

Heidenhofstr. 2
79110 Freiburg
Germany
Press and Public Relations
Karin Schneider
Phone +49 761 4588-5150
Fax +49 761 4588-9342
info@ise.fraunhofer.de

www ise fraunhofer de

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The completed labs and test rooms will have a net floor area of 2000 m². After construction, to last 18 months, the research area Materials and Coatings can move into their new quarters at the Institute's main site. At the Institute, materials and coatings for e.g. absorber tubes in solar thermal power plants as well as microstructured surfaces for e.g. optimizing solar cell surfaces and Antireflex-Solarglas are developed.

The new lab building will fill the space left by the demolished building on the corner of the Berliner Allee and the Elsaesserstr., thus rounding out the urban image. Architecturally the seminar room on the upper floor protrudes out over the main building, providing a visual transition to the neighboring building on the Berliner Allee.

#### **Highly Energy Efficient Lab Building**

Energy efficient buildings are a focus at Fraunhofer ISE, and therefore the research in this area flows, of course, into the new lab building. The ambitious goal of underbidding the EnEV 2009 (Energy Saving Building Ordinance) by 50% is pursued by using e.g. a highly efficient insulation in order to reduce to heating demand. A novel heat pump supplies cooling and heating for the building. The heat pump used has an especially high efficiency and makes use of process waste heat. It is combined with a generously dimensioned stratified chilled water storage tank. A further innovation is the integration of angularly selective photovoltaic modules on the façade for the seminar room and stairwells. This element is a new generation of transparent photovoltaic elements with improved efficiency for vertical integration. Further, it allows a view to the outdoors while at the same time providing sun protection to the interior room.

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At about the same time as the ground-breaking ceremony for the new building took place, the thousandth staff member was employed at Fraunhofer ISE. The Institute's commitment to education is evidenced by the fact that almost one half of the staff is enrolled at a university: 120 Ph.D. students, 137 diploma and bachelor students as well as 270 scientific assistants. The Director Prof. Dr. Eicke R. Weber welcomes Dorika Fleissner as the thousandth staff member at Fraunhofer ISE. She is a Ph.D. student in the field of intelligent energy systems and mother of two children. An especially enthusiastic Weber comments: "At this milestone, I am pleased to welcome a young female scientist, whose career path demonstrates that a research career and family are compatible. At Fraunhofer we are concerned about creating the right conditions for this to be feasible."

#### **Informational material:**

Fraunhofer ISE, Press und Public Relations Tel.: +49 761 4588-5150 Fax +49 761 4588-9342 info@ise.fraunhofer.de

**Text of PI and Fotos** to download can be found on our webpage: <a href="https://www.ise.fraunhofer.de">www.ise.fraunhofer.de</a>

## Contact person for further information: Project leadership:

Clemens Faller, Fraunhofer ISE Tel.: +49 761 4588-5214 clemens.faller@ise.fraunhofer.de

#### **Scientific Project Management:**

Nicolas Réhault, Fraunhofer ISE Tel.: +49 761 4588-5352 nicolas.rehault@ise.fraunhofer.de

Fraunhofer Institute for Solar Energy Systems ISE

Heidenhofstr. 2 79110 Freiburg Germany Press and Public Relations Karin Schneider Phone +49 761 4588-5150 Fax +49 761 4588-9342 info@ise.fraunhofer.de

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Groundbreaking ceremony for new lab building at Fraunhofer ISE in Freiburg: (from left to right) Otto Neideck, First Mayor of the City of Freiburg; Prof. Dr. Hans-Jochen Schiewer, Rector of the Albert Ludwig University Freiburg; Prof. Dr. Eicke R. Weber, Director Fraunhofer ISE; Ministerial Director Dr. Dietrich Nelle, Director of the Subdivision Research Organization, Federal Ministry for Education and Research; Markus Scheben, Department Head for Building Affairs and Estates, Fraunhofer-Gesellschaft; Veronika Reisser , BMBW Architects BDA + Partner, Ministerial Director Klaus Tappeser, Office Head in the Ministry of Science Baden-Wuerttemberg; Georg Brechensbauer, BMBW Architects BDA + Partner ©Fraunhofer ISE

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