Fraunhofer institute for solar energy systems

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The Fraunhofer Institute for Energy Economics and Energy System Technology IEE in Kassel has a new leader: Prof. Dr. Martin Braun is taking over as the new director of the research institute on November 1, 2024. He is also a professor for sustainable electrical energy systems at the University of Kassel.

Researchers at the Fraunhofer Institute for Solar Energy Systems ISE have presented the newest edition of their study on the levelized cost of electricity (LCOE) of renewable power plants. The fifth edition of the study analyzes the current costs and forecasts the future cost development up to 2040 based on technology-specific learning rates ...

Germany is leaving the age of fossil fuel behind. In building a sustainable energy future, photovoltaics is going to have an important role. The following summary consists of the most recent facts, figures and findings and shall assist in ...

The Fraunhofer Institute for Solar Energy Systems ISE sees a huge potential for savings with higher system voltages, especially in large PV power plants. The institute is planning first pilot power plants with this technology and is aiming for a broad market launch together with industry. To kick-off its new research topic "Medium Voltage - A ...

He joined the Fraunhofer Institute for Solar Energy Systems, ISE in 1987. In 1993 he became the head of the group »III-V - epitaxy and solar cells«. From 2007 until 2016 he was division director »Materials - Solar Cells and Technology« and from 2009 until 2016 he was deputy director of the institute. In 2017 he was ap-pointed director ...

Fraunhofer ISE, with a staff of about 1400, is the largest solar research institute in Europe. We are committed to promoting a sustainable, economic, secure and socially just energy supply system based on renewable energy sources.

Researchers at the Fraunhofer Institute for Solar Energy Systems ISE, using a new antireflection coating, have successfully increased the efficiency of the best four-junction solar cell to date from 46.1 to 47.6 percent at a concentration of 665 suns. This is a global milestone, as there is currently no solar cell with a higher efficiency worldwide.

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The study compares the present costs for conversion of different energy forms into electricity and gives a prognosis for the further cost development up to 2035. The scientists in Freiburg analyze both the levelized cost of electricity (LCOE) from renewables as ...

The Fraunhofer Institute for Solar Energy Systems ISE, supported by PSE Projects GmbH, has been publishing the PV Report on a regular basis for the past decade. The report contains a compilation of the most important facts on photovoltaics (PV) in Germany, the European Union and worldwide, documenting, in particular, the development of the ...

The Fraunhofer Institute for Solar Energy Systems ISE is the first European research institute to switch to large-area M10 silicon wafers. A TOPCon solar cell immediately achieved a very good efficiency of 24.0 percent. This result was presented for the first time at the 20th Photovoltaic Technology Advisory Board Meeting of Fraunhofer ISE.

Fraunhofer ISE Develops Solar-Powered Ice Maker and Solar Dryers for Fishermen and Farmers in Kenya Fraunhofer ISE and GHD are developing the National Hydrogen Strategy of the United Arab Emirates Prof. Dr. Christopher Hebling receives the Global Excellence Award by Energy and Environment Foundation

The German Fraunhofer Institute for Solar Energy Systems ISE and the US National Renewable Energy Laboratory, NREL, have compiled a study that describes the status of both the current market as well as the state-of-the-art for concentrator photovoltaic (CPV) technology. This young technology has achieved tremendous progress and has the ...

In the research project "DeepTrack", Zimmermann PV-Tracker GmbH, part of the Zimmermann PV-Steel Group, and the Fraunhofer Institute for Solar Energy Systems ISE are improving tracking algorithms with a digital twin that uses deep learning to calculate optimized control approaches. Among other things, the digital twin learns from the data of ...

The Fraunhofer Institute for Solar Energy Systems ISE (or Fraunhofer ISE) is an institute of the Fraunhofer-Gesellschaft. Located in Freiburg, Germany, the Institute performs applied scientific and engineering research and development for all areas of solar energy.

The intention of the »Photovoltaics Report« is to provide up-to-date information on the PV market and on efficiencies of solar cells, modules and systems. Moreover, data on inverters, energy payback time and price developments are presented.

Researchers at the Fraunhofer Institute for Solar Energy Systems (Fraunhofer ISE) in Germany have achieved a power conversion efficiency of 46.7% for a III-V concentrating photovoltaic cell (CPV ...

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Fraunhofer Institute for Solar Energy Systems, ISE. with the support of PSE Projects GmbH. Freiburg, 29 July 2024. ©Fraunhofer ISE. CONTENT Quick Facts Topics: PV Market Solar Cells / Modules / System Efficiency Life cycle assessment (LCA) and sustainability aspects

The other half of the institute is dedicated to research themes involving energy systems and technologies relevant to the energy transition. The institute holds numerous efficiency records in photovoltaics for different solar cell technologies: Most recently these include the recently published record efficiency for both-sides contacted silicon ...

The Fraunhofer Institute for Solar Energy Systems ISE has recently published a study in which the CO2 footprint of six monocrystalline silicon photovoltaic modules manufactured in China, Germany...

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The maxi mum share of solar energy in the total dail y energy of all electricity sources was 32% on May 21. From March to September 2020, the monthly power generation of PV systems wa s higher than that of coal-fired power

The Fraunhofer Institute for Solar Energy Systems ISE sees a huge potential for savings with higher system voltages, especially in large PV power plants. The institute is planning first pilot power plants with this ...

Fraunhofer ISE holds several world records in the high efficiency solar cell sector, such as the record efficiency value for both-sides contacted silicon solar cells (26 %) and the top efficiency of 47.6 % for a four-junction solar cell based on a III ...

The Fraunhofer Institute for Solar Energy Systems ISE, Soitec, CEA-Leti and the Helmholtz Center Berlin jointly announced today having achieved a new world record for the conversion of sunlight into electricity using a new solar cell structure with four solar subcells. Surpassing competition after only over three years of research, and entering the roadmap at ...

A 2019 study conducted by the Fraunhofer Institute for Solar Energy Systems ISE concluded that Germany could need as much as 800 terawatt-hours of hydrogen by 2050, if this technology is fully exploited by then and, for example, shipping and aviation are based on hydrogen and hydrogen-based synthetic fuels. It would appear feasible for Germany ...

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Fraunhofer Institute for Solar Energy Systems ISE Heidenhofstraße 2 79110 Freiburg Directors of Institute: Prof. Dr. Hans-Martin Henning Prof. Dr. Andreas Bett CONTENTS Summary 2 1. Objective of this analysis6 2. Historical development of renewable energy technologies 9 3. Input data for the calculation of LCOE 11

The Fraunhofer Institute for Solar Energy Systems ISE, with a staff of about 1400, is one of the largest solar research institutes worldwide. The institute enables and contributes to achieving the energy transition which aims eventually for a sustainable, economic, secure, and socially just energy supply system based on renewable energy sources.

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