

What is the Fraunhofer Institute for Solar Energy Systems ISE?

The Fraunhofer Institute for Solar Energy Systems ISE in Freiburg, Germany is the largest solar research institute in Europe. With a staff of about 1 400, we are committed to promoting a sustainable, economic, secure and socially just energy supply system based on renewable energy sources.

How does Fraunhofer IAP work?

Fraunhofer IAP uses nanoparticles to apply a coating to the window panes that collect light, conduct it to the front side of the glass pane and feed it into an organic solar cell there. "The efficiency is only at 4 to 7 percent at the moment, which is very limited.

Can a Fraunhofer ISE technology make photovoltaic modules more energy-efficient?

NexWafe, another company built on Fraunhofer ISE technology, is working on energy-efficient manufacturing of photovoltaic modules. Using an innovative production process, it has succeeded in manufacturing silicon wafers - the heart of every photovoltaic cell - far more efficiently than was previously possible.

Who is Fraunhofer ISE?

Fraunhofer ISE has investigated the production and supply costs of hydrogen in and from Colombia. His Royal Highness, The Grand Duke of Luxembourg visited the Fraunhofer Institute for Solar Energy Systems ISE on November 8, 2024.

How can Fraunhofer ISE improve the rate of innovation?

However, rather than contenting itself with theoretical studies, Fraunhofer ISE is also developing the technologies needed to maintain the rate of innovation. For example, by making the contacts in the cells thinner, the researchers have reduced silver consumption by around 20 percent and increased efficiency by 1 percent.

Is Fraunhofer ISE certified?

Fraunhofer ISE is certified according to the quality management standard DIN EN ISO 9001:2015 and according to the standard DIN EN ISO 50001:2018 for energy management. You are interested in up-to-date information on our R&D activities?

Germany's Fraunhofer Institute for Solar Energy Systems ISE touts a world record with 47.6% solar cell efficiency from its four-junction panel, which it set back in 2022. Now, it's developed a new micro-CPV setup, which uses optical systems to focus light onto small solar cells made with III-V semiconductor materials, according to CleanTechnica.

The record-breaking solar cell converted 28.6% of the sun's energy into electricity, as independently certified by Fraunhofer ISE. This was considered a major breakthrough for the wider solar industry and could help

create more efficient solar panels.

The molecularly shaped optical properties open up unrivaled adaptability, so that a wide variety of types of solar cells can be developed, from classic single-junction solar cells with efficiency potential of at least 20% (19% has already been achieved in the laboratory), to multi-junction solar cells with potential for even higher efficiencies ...

This is the conclusion drawn at a fire protection workshop held on January 24, 2013 by the Fraunhofer Institute for Solar Energy Systems ISE and T&V Rheinland at the Solar Info Center in Freiburg. The workshop was ...

Forscherinnen und Forschern am Fraunhofer-Institut für Solare Energiesysteme ISE ist es gelungen, mit Hilfe einer neuen Antireflexbeschichtung die Effizienz der bisher besten Vierfachsolarzelle von 46,1 auf 47,6 Prozent bei 665-facher Sonnenkonzentration zu erhöhen.

Next generation tandem solar panel achieves 25% efficiency, delivering significant breakthrough to accelerate the energy transition. Oxford PV, a pioneer in next-generation solar technology, has set a new record for the world's most efficient solar panel, marking a crucial milestone in the clean energy transition.

This is the conclusion drawn at a fire protection workshop held on January 24, 2013 by the Fraunhofer Institute for Solar Energy Systems ISE and T&V Rheinland at the Solar Info Center in Freiburg. The workshop was attended by 120 participants, including manufacturers, researchers, representatives from the fire brigade and insurance companies.

In sunny regions, solar thermal power plants (concentrated solar power, CSP) with large thermal storage systems supply electricity on demand. Together with our partners from industry, project developers, researchers and public institutions, we are working to further improve materials, coatings, components, collectors and systems in order to increase efficiency and reduce ...

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Spectropolarimetric results of Fraunhofer lines between 516.3 and 532.6nm are presented in local upper solar chromosphere and inner corona below a height of about 0.04 solar radius above the solar limb. The data were acquired on 2013 November 3 during a total solar eclipse in Gabon by the prototype Fiber Arrayed Solar Optical Telescope.

The glass-glass tandem PV module produced by Fraunhofer ISE boasts an efficiency rate of 25% - related to the designated illuminated area - and an output of 421W on an area of 1.68 square ...

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

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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 ...

Fraunhofer Bessel Prize winner Dr. Jasna Jankovic conducts research at Fraunhofer ISE; 2023. Project "HV-MELA-BAT"; High-Voltage Megawatt Charging System for Heavy-Duty and Passenger Vehicles; Fraunhofer-Bessel Award Winner on Research Stay at Fraunhofer ISE ; Fraunhofer ISE To Support PV Module Manufacturer Emmvee with New Solar Cell ...

An industry-wide collaboration to make solar affordable for all The Fraunhofer Center for Sustainable Energy Systems CSE is developing Plug and Play PV systems to dramatically reduce the soft costs of residential PV installations, targeting a goal of \$1.50/Watt installed cost by 2020, down from an average of \$3-4/W installed cost in the U.S. today.

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