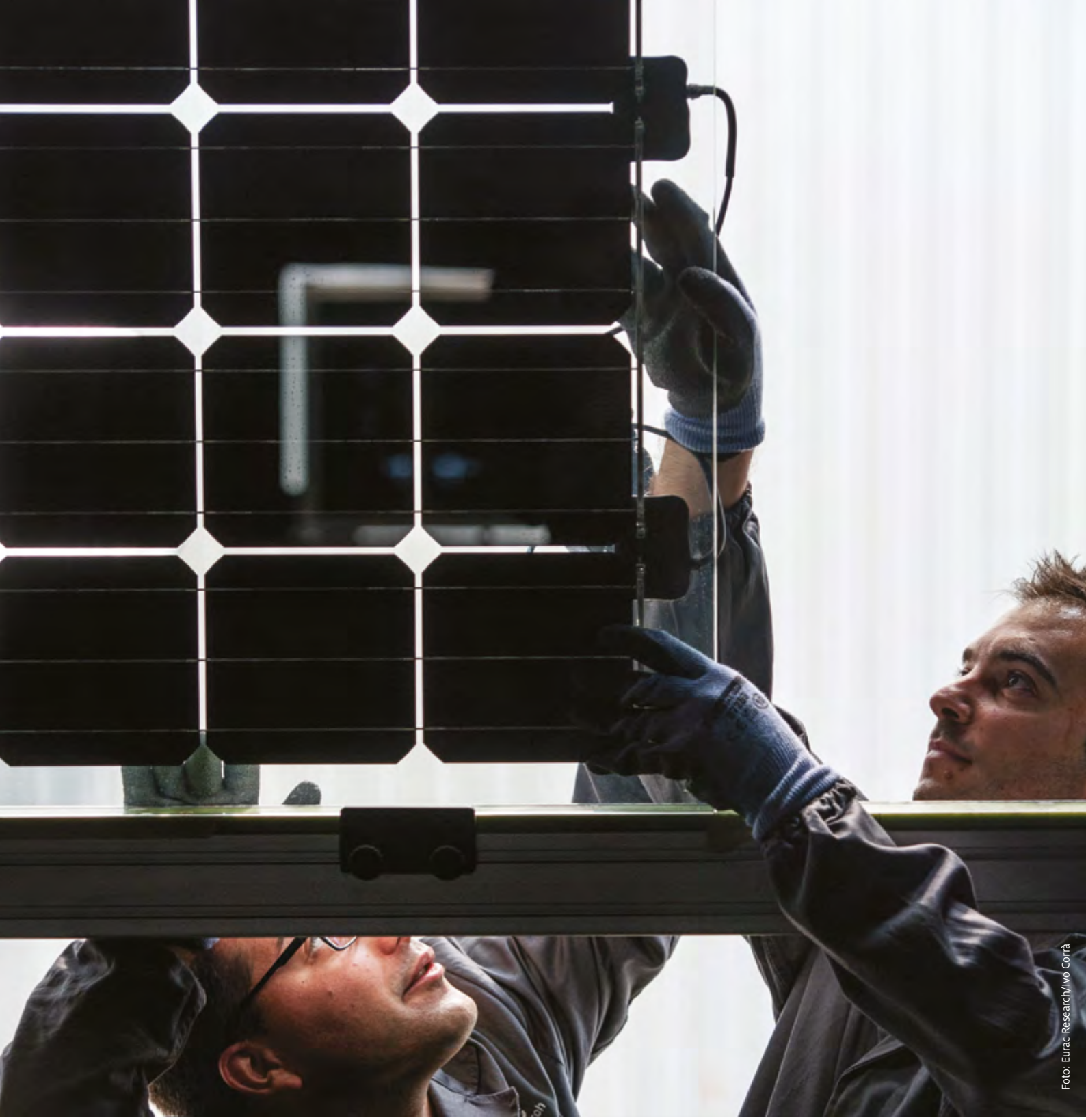

Foto: Eurac Research/Ivo Corrà

LABORATORY

Solare PV Lab

Solar simulator for photovoltaic modules

Solare PV Lab

Our pulsed light solar simulator measures the electrical performance of PV modules. By subjecting samples to the same controlled and repeatable conditions, these tests permit, for example, the verification of manufacturer-guaranteed performance specifications or the comparison of the electrical yield of different PV module technologies.

Solar Simulator

We can reproduce the solar spectrum with our class "AAA" pulsed light solar simulator (IEC 60904-9) that has thermal control of the test conditions. The simulator measures the characteristic curve IV of the PV module under standard conditions (defined by IEC 60904). Furthermore, the measurements determine both the performance of the PV module in different combinations of irradiance (0-1000 W/m2) and temperature (5-75°C) and its temperature coefficients.

Climate Chamber

To expand the range of testing of PV modules, the measurements of the solar simulator can be combined with accelerated ageing tests in a climatic chamber. The chamber (1.3 x 1.5 x 2.2 m) simulates the environmental conditions to which the modules of a PV system are exposed during their life cycle, accelerating the natural ageing process to evaluate the performance degradation. Cycles include controlled temperature and humidity conditions: temperatures can range from -40°C to +90°C and relative humidity from 20% to 95%. The chamber is able to accommodate a maximum of 10 standard-size photovoltaic modules per test session.

Company Service Expertise

The laboratory serves a broader collaboration between research and business that can take a prototype to a market-ready product, passing through simulation phases, specific tests and optimisation.

Eurac Research offers companies consolidated knowledge-base that has been developed through international networks and applied in numerous projects with local companies, including focus on quality and reliability of modules, the study of the solar resources and the integration of photovoltaics within buildings and networks.

Foto: Eurac Research/Marion Lafogler

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