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PRESS RELEASE

EU PVSEC 2026 Concludes in Rotterdam, Highlighting the Next Frontiers of Photovoltaic Research

The **European Photovoltaic Solar Energy Conference and Exhibition (EU PVSEC) 2026** successfully concluded at the **World Trade Center Rotterdam**, bringing together more than **1,400 participants from 54 countries** from 14 to 18 September. With over **1,000 scientific presentations**, the conference highlighted the latest advances in photovoltaic research, technology and applications, while fostering exchange between science, industry and policy and strengthening its role as the leading global platform for the PV research community.

Wilfried van Sark, EU PVSEC 2026 General Chair from Utrecht University, stated: “PV provides abundant electricity, accounting for more than 10% of the world electricity demand. The next stage of the growing market is to make sure the electricity is available where and when it is needed by focusing on the grid and flexibility enablers. This way we achieve PV everywhere and PV whenever.”

According to Solar Power Europe, PV generation has avoided more than 30 billion EUR in EU gas imports since the start of the 2026 Middle East War. This is a significant demonstration how PV is providing energy security and saving citizens money in the context of the ongoing energy crisis and drives the research for a green future presented at the conference.

Key Advances in Solar Energy Technology This Year

This year's scientific programme throughout the week presented results showing technological advances across every link of the PV value chain and a range of PV approaches. Among the showcased research were several noteworthy world records in efficiency across different PV technologies.

Crystalline silicon remains at the heart of global PV research and industrial development. TOPCon and Heterojunction technologies featured prominently, alongside continued work on efficiency improvements, advanced processing and metallisation, including efforts to reduce the use of silver. At the same time, reliability is receiving increasing attention, due to the importance of ensuring performance over increasingly long operating lifetimes.

Perovskites and tandem solar cells continue their rapid development, with strong progress in efficiency accompanied by increasing efforts to improve stability, scalability and manufacturing processes. At the same time, characterisation, modelling and outdoor testing are gaining importance for understanding performance and lifetime under real operating conditions, supporting the transition towards commercial deployment.

At the **module level**, research covered new materials and designs as well as reliability, performance and sustainability. Reducing material consumption and replacing critical resources, including efforts to substitute silver with copper, remain important areas of innovation. **Circularity** is becoming increasingly relevant, with research addressing



recyclability, repair, reuse and improved end-of-life management. European manufacturing and the resilience of PV supply chains were also prominent topics throughout the week.

The diversity of PV **applications** continues to expand. In agrivoltaics, regulatory approaches combined energy production with agricultural productivity. Floating PV, building-integrated PV and vehicle-integrated PV further demonstrated the growing range of environments in which photovoltaic technologies can be deployed.

At the system level, the integration of ever-larger volumes of solar electricity is creating new research priorities. Battery storage, flexibility and improved grid management are approaches to address congestion and curtailment. As highlighted in the opening session panel, PV and storage will grow hand in hand as PV continues its rapid expansion.

Socio-economic aspects remain integral to the programme covering inclusiveness, social engagement and the wider societal dimension of the energy transition. An inspiring talk in the closing session reminded the community of the critical role of PV in providing electricity to the millions of people who still lack access, especially in parts of Africa.

“The outstanding results presented throughout the week prove that European collaboration in science works and provides concrete contributions to this transformative technology”, summarises Robert Kenny, Technical Programme Chair.

Digitalisation and AI are established tools throughout the PV value chain, including in system design, modelling and forecasting, performance analysis, fault detection and automated O&M, including the use of drones. At the same time, AI is very rapidly shaping up to be a massive energy consumer - PV has been identified this week as the only real solution to provide the green energy needed to run data centres. Summarised elegantly as, „PV for AI and AI for PV” by Jef Poortmans during the opening session.

EU PVSEC and PV Academy’s in-Depth Tutorials

Ahead of the conference, the PV Academy once again brought researchers, students and industry professionals together for a day of in-depth learning. This year’s programme covered three very current corners of the PV world: space photovoltaics, artificial intelligence applications across the PV value chain and the modelling of PV and energy storage systems for grid integration.

Awarding of the Becquerel Prize

A highlight of the conference was the awarding of the prestigious Alexander Edmond Becquerel Prize to Dr. Delfina Muñoz (CEA/INES France), recognising her outstanding contribution to the advancement of photovoltaics.

EU PVSEC Observatory of Photovoltaic Research

As trends across the sector evolve, the PV research Observatory was officially launched at EU PVSEC 2026 and presented by **WIP Renewable Energies**, introducing a new initiative to systematically analyse the scientific knowledge generated at EU PVSEC, identify emerging research trends and signals, and strengthen the connection between PV research, industry and policy.



EU PVSEC 2026

43rd European Photovoltaic Solar Energy
Conference and Exhibition

PV Innovation Continues in Freiburg in 2027

The 45th EU PVSEC will take place from 20 to 24 September 2027 in Freiburg, Germany. With its strong solar energy ecosystem and long-standing expertise in photovoltaics, Freiburg will offer an ideal setting for the global PV community to come together once again, building on the momentum of Rotterdam and advancing innovation, cooperation, and sustainable solar energy.

Session Recordings Available for Three Months

Recordings of the scientific sessions, Parallel Events, and the Industry Summit will be available online for three months following the event.

Banners for the press release can be found here:

[EU PVSEC 2026](#)

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ANNEX

Technical Highlights of the EU PVSEC 2026

- A detailed theoretical analysis was presented, exploring light management limits that identified pathways to achieving 28% Si cell efficiencies. (ANU)
- Silver free metallization pastes can provide high-performance alternatives to silver pastes. (ISE, CEA/INES, FZJ, ISFH, CSEM)
- World record achievement of a 34.21% efficient III-V terrestrial PV module. (Fraunhofer ISE)
- The Horizon Europe funded Triumph project reported a 30.2% triple junction Perovskite/silicon cell, a world record at the time. A subsequent world record of the same technology of 32.37% was also reported. (Trina)
- A high number of papers provided insights into the impact of encapsulation materials on module reliability with a focus on the shift from EVA to EPE as well as additives.
- A “design to recycle” approach enables easy end-of-life module separation employing debonding on demand. (IMEC)
- Various contributions mentioned PV+BESS projects shifting design priorities from maximizing photovoltaic yield to optimizing the PV+BESS system, balancing storage sizing and cycling, power conversion, grid services, safety, and project economics.
- Intermediate results of the PNRR funded agrivoltaics’ measure in Italy were presented, which to date has awarded grants to over 740 plants for a combined nearly 2GW PV capacity. (ENEA)
- A number of presentations analysed the need for appropriate regulations and economic incentives to ensure the reuse of still functioning modules replaced in the repowering of existing plants
- A large portion of future EU electricity demand in a net zero scenario could be covered with full utilization of available buildings, including both rooftops and façades. (JRC)