Kalyon PV and ISFH Collaborate on POLO IBC Cell Technology

May 17, 2024 – Ankara, Türkiye

Kalyon PV and the Institute for Solar Energy Research Hamelin (ISFH) are excited to announce a pioneering collaboration focused on the development and optimization of innovative POLO IBC (Polycrystalline silicon on Oxide Interdigitated Back Contact) cell technology. This partnership aims to push the boundaries of solar cell efficiency and production capabilities.

Advancements in POLO IBC Cell Technology

The ISFH has successfully developed a POLO IBC cell with an impressive efficiency potential of 25%. This breakthrough leverages a process based on industrial bifacial PERC (Passivated Emitter Rear Cell) cells, utilizing a unique shadow mask for local polycrystalline silicon (POLO) deposition. This innovative design is at the heart of the POLO IBC technology and is developed and licensed by ISFH.

Collaborative Efforts and Future Enhancements

Kalyon PV will have the opportunity to enhance this cutting-edge cell technology through its advanced production lines as part of its future production plans. This strategic collaboration will enable Kalyon PV to integrate ISFH's POLO IBC technology, significantly elevating their production capabilities and efficiency standards.

IBC4EU Project Success

Within the context of the IBC4EU Project, Kalyon PV's Ga-doped wafers have been successfully tested for the POLO-IBC cells, achieving a remarkable efficiency of 23.4% and an iV_{oc} (implied-open circuit voltage) of 740 mV. These results underscore the promising potential of combining Kalyon PV's materials with ISFH's technological advancements.

Knowledge Transfer and Innovation

A core component of this collaboration is the transfer of ISFH's specialized know-how to Kalyon PV. Through this partnership, Kalyon PV will gain critical insights and capabilities to evaluate and apply POLO IBC technology in their future production processes. This knowledge transfer aims to catalyze significant advancements in the solar energy sector.

"We are thrilled to join forces with ISFH, one of the significant solar technology research institutes in Germany," said Ersan Tüfekçi, CEO of Kalyon PV. "This collaboration aligns with our vision of pioneering high-efficiency solar cells and underscores our commitment to sustainable energy solutions."

ISFH's PV department leader Dr. Thorsten Dullweber added, "Partnering with Kalyon PV allows us to expand the impact of our POLO IBC technology. Together, we can drive forward the efficiency and production of solar cells, contributing to the global renewable energy landscape."

About Kalyon PV

Established in 2020, Kalyon PV is the first integrated solar technology factory in Europe and leading solar panel manufacturer in Türkiye with its 2 GW annual production capacity, committed to advancing solar technology and contributing to a sustainable energy future of the world. With a focus on solar innovation and efficiency, Kalyon PV is one of the pioneering PERC and TOPCon technology module manufacturing by having a clean supply chain and ongoing technological transformation consistently.

About ISFH

ISFH is one of the world's leading research institutes for developing high-efficiency solar cells and solar modules that can be produced industrially. System solutions for integrating renewable energies into buildings and neighborhoods are also being researched at ISFH. ISFH, based in Emmerthal, near Hameln, Germany, was established in 1987 and is a member of the German Renewable Energy Research Association (FVEE), a member of the Zuse-Gemeinschaft, and an affiliated institute of Leibniz University Hannover.

Contacts

Kalyon PV: Erdem Karahisarli, ekarahisarli@kalyonpv.com

ISFH: Thorsten Dullweber, dullweber@isfh.de

Photo 1: Ersan Tüfekçi, CEO of Kalyon PV, and Dr. Thorsten Dullweber, PV department leader at ISFH, start the colaboration on POLO IBC cells at Kalyon PVs Headquater in Ankara, Türkiye.

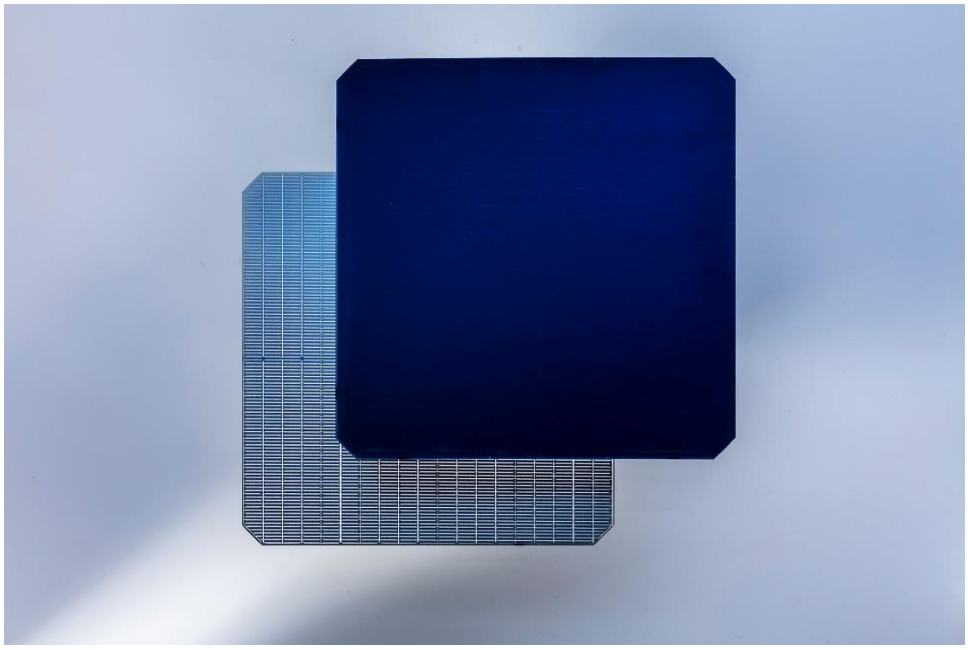

Photo 2: Photo of the front side (dark blue) and rear side (light blue) of a POLO IBC solar cell developed at ISFH utilizing an innovative shadow mask for local polycrystalline silicon deposition.