Fully screen-printed monoPoly silicon solar cell technology

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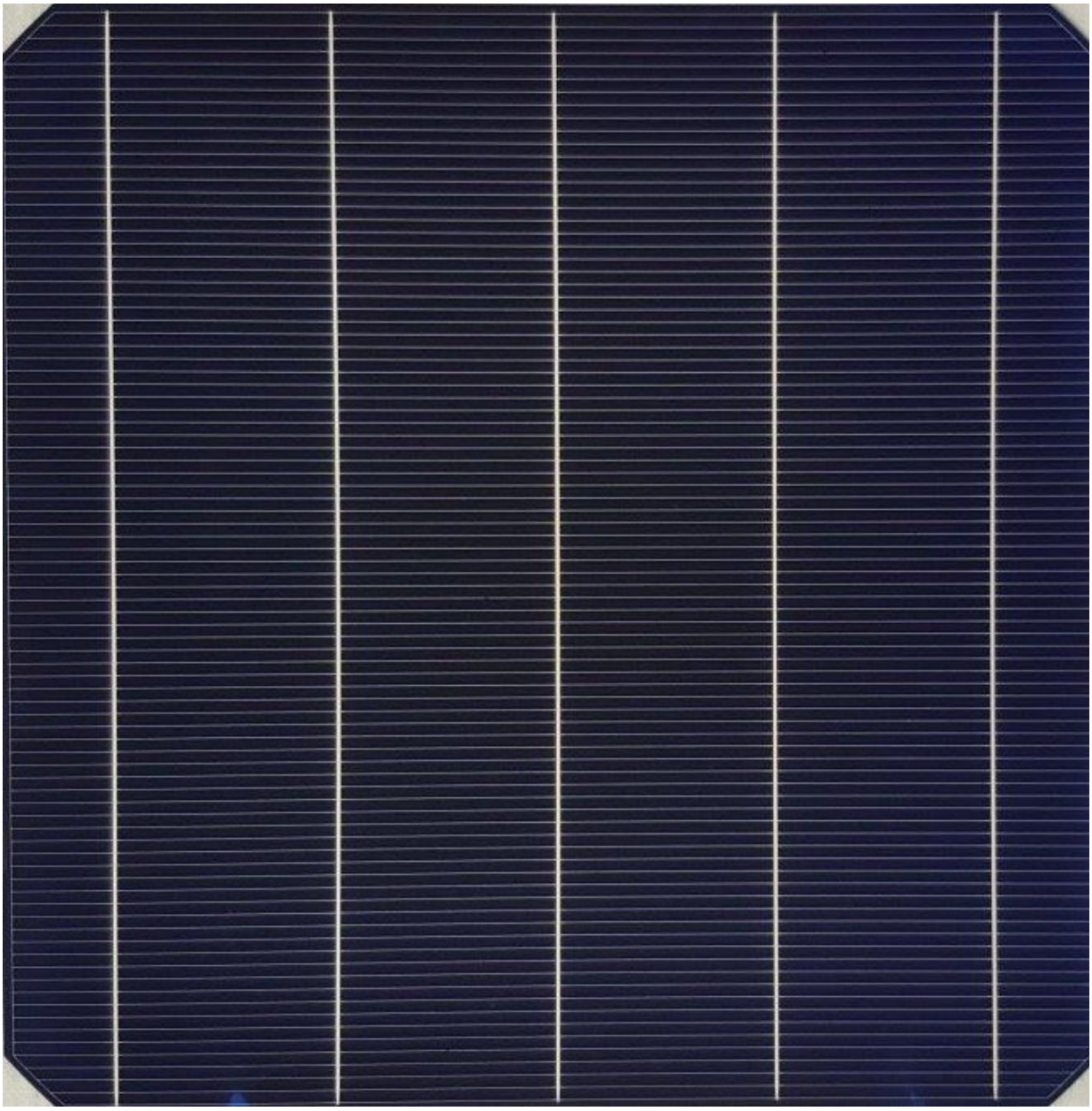

Front image of a fully screen-printed monoPoly solar cell.

The Solar Energy Research Institute of Singapore (SERIS) at the National University of Singapore (NUS) has reached a new cell efficiency milestone in the development of its low-cost screen-printed bifacial monoPoly silicon solar cell technology, recording an average cell efficiency of 21.5% in pilot-scale production using commercially available large-area Cz-Si wafers.

SERIS' proprietary monoPoly cell technology, applicable on both p-type and n-type silicon wafers, features homogenous junctions and standard fire-thorough screen-printed metal contacts with grids on both sides, resulting in a high-efficiency bifacial solar cell. This passivated-contact cell uses an advanced tunnel oxide and doped silicon layers, enabling excellent surface passivation in the non-contact cell regions along with very low-resistance and low-recombination screen-printed contacts.

Dr. Shubham Duttagupta, Head of SERIS' Monocrystalline Silicon Solar Cell Group said, "monoPoly cells use the same tools and fewer process steps compared to standard p-type PERC technology, delivering a very attractive cost-of-ownership for solar cell manufacturers seeking to boost cell efficiencies in their current production lines or planning an expansion for new production lines."

SERIS CEO, Prof. Armin Aberle added, "We are very pleased to announce this important milestone and we are thankful for the strong support from our industry collaborators. This result is a testament to SERIS' long-standing commitment to work closely with the solar industry to reduce the $/Watt production costs, improve the cell efficiencies, and increase the margins for our industry partners through

technology innovation."

SERIS expects to achieve monoPoly cell efficiencies of above 23% through implementation of advanced grid designs, material improvements and fine-tuning of processes at our industry partners' production lines.

Provided by National University of Singapore