

#### General and track-record

ISC Konstanz offers technology transfer of solar cell and module technologies. We are experienced in supporting our customers through the full process; from design, planning, and tendering, to running in the processes on site with our teams of experienced technologists.

Major examples of successful technology transfers are:

- 2015 BiSoN technology to Megacell, Italy
- 2017 BiSoN technology to adani, India
- 2018 BiSoN technology to Asian customer
- 2019 ZEBRA technology to SPIC, China
- 2022 ZEBRA technology to valoe, Lithuania



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## Technology license and technology transfer

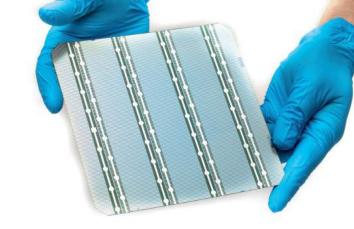
ISC Konstanz offers a technology license for commercial use of the IP and know-how required for industrial manufacturing of ZEBRA and TOUCAN solar cells.

In addition to this – under a separate contract – ISC Konstanz offers consultancy and ramp-up support during the set-up of the cell factory as well as for transferring the cell process and ramping up the cell factory.

Furthermore, if required by the customer, ISC Konstanz will also gladly offer consultancy and support regarding module design, module BOM and module manufacturing.

Our technology transfer optionally is followed by R&D partnership for future developments.





### Typical technology transfer services

Selection of Equipment

Preparation of Manufacturing Site

Transfer of Technology Product Release Production Ramp-Up

Further
Optimization
Up-Grades

- · Specification of tools
- · Sampling of equipment
- · Support selection of equipment and negotiations (optional)
- · Education of engineers at ISC
- · Specs for clean room
- · Specs for offline equipment
- $\cdot$  On site inspections
- · Qualification of tools
- · Process recipes
- · Training of personnel
- $\cdot \ \text{Process optimization}$
- Control plan and quality procedures
- Support of product management and sales
- · Ramp-up to full capacity
- Qualification of second source materials
- DOE based processed optimization
- · Industry 4.0 integration
- $\cdot \, \text{Statistical data analysis} \\$
- Loss analysis and semiconductor simulation
- Continuous improvement process (CIP)
- DOE based process optimization
- · Implementation of upgrades

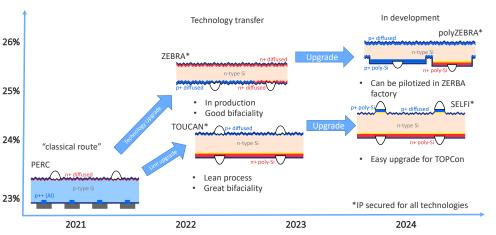


## R&D support and training

- R&D labs at ISC as well as ISC's expertise can be made available to customer long time before own manufacturing facility is operating
- ISC offer training courses (theoretical and hands-on) for technicians and engineers
- ISC can qualify cells and modules using its strong expertise and characterisation laboratory (I/V, EL, climate chambers, ....)

# ISC Konstanz's Roadmap

- ISC Konstanz has more than 15 years of experience in development and industrialization of n-type cells concepts with boron diffusion
- Our cell concepts:
   BiSoN (nPERT), MoSoN (RJ-n-PERT),
   TOUCAN (TOPCon), ZEBRA (IBC)



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