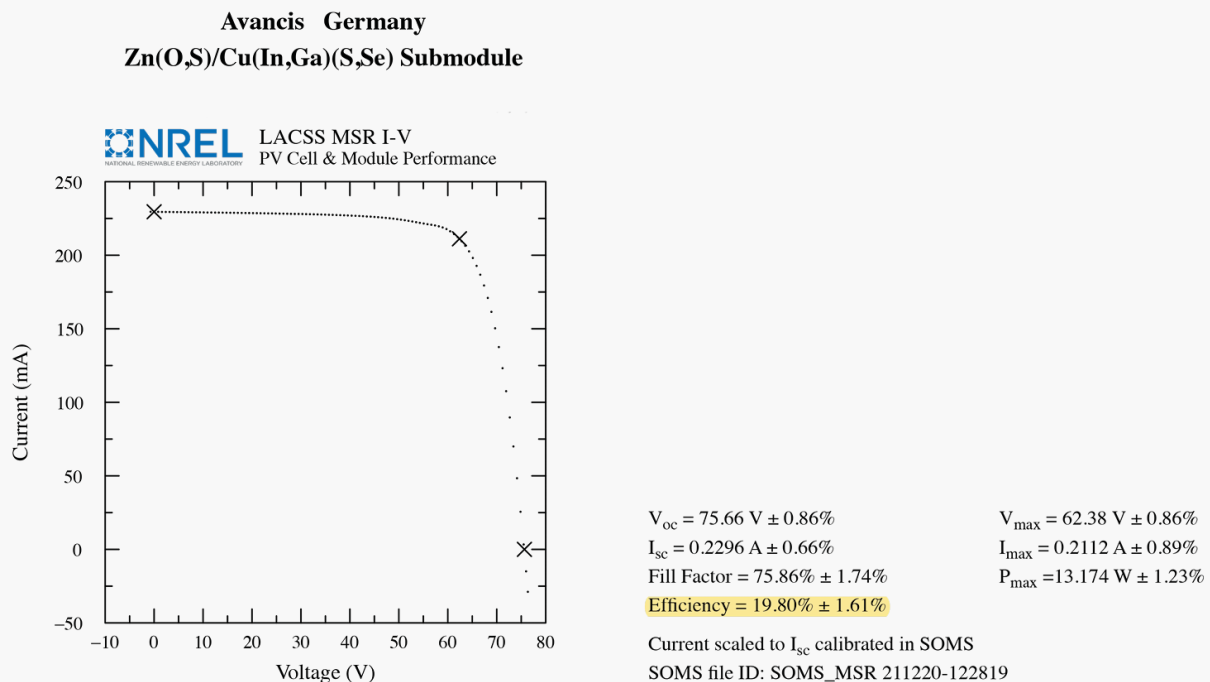


## AVANCIS enhances its own world record for the efficiency of CIGS thin film solar modules

Aperture area efficiency of 19.8% certified by NREL

**Torgau/Munich, June 3<sup>rd</sup> 2022**

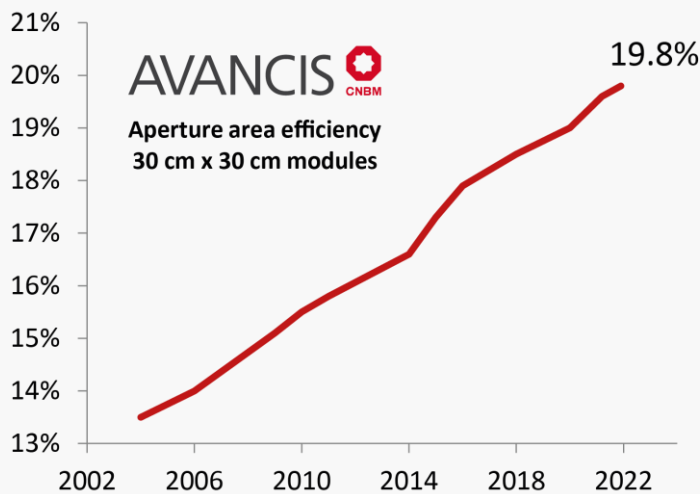
AVANCIS, leading manufacturer of premium class CIGS solar modules, enhances its own efficiency world record for thin film solar modules. The new international standard is achieved with an externally certified power conversion efficiency of 19.8 % for an encapsulated thin-film module with integrated serial connection of size 30 cm x 30 cm. The efficiency world record related to the aperture area of 665 cm<sup>2</sup> was independently certified by the National Renewable Energy Lab (NREL). Thereby, the previous best value of 19.6 % could be further extended.



The graph shows the I-V curve of the certification measurement by NREL together with the evaluated solar parameters of the champion module.

„The foundation for this success is the further refinement of the interaction between a Ga-rich Cu(In,Ga)(S,Se)<sub>2</sub> absorber, the Na-based post deposition treatment of the absorber and the Cd-free sputtered Zn(O,S) buffer“, explains Dr. Thomas Dalibor, Director CTO of AVANCIS GmbH.

„With this record value, the module can further exploit the efficiency potential of this specific cell stack. The renewed best value continues the long-standing chronicle of champion efficiencies at AVANCIS as a result of the efforts of our research teams in the R&D center in Munich.“



The graph shows the long-standing history of champion efficiencies of the AVANCIS CIGS technology.

All key processes of the champion module are compatible with the series production of large-area CIGS modules of the product platforms *PowerMax* and *SKALA*. AVANCIS hereby underlines its position as a leading technology provider and manufacturer of premium CIGS thin-film solar modules, which are not only powerful, but beyond that avoid the deployment of environmentally critical heavy metals like cadmium or lead.

Together with the generally very short energy payback times and the reduced carbon footprint of the thin-film technologies as compared to the established crystalline silicon technologies, the AVANCIS CIGS technology offers an environmentally friendly alternative PV technology especially for PV applications in urban environments as e.g. solar facades.

The record module and the development path towards this record were the focus of the invited talk which was given by Dr. Thomas Dalibor on occasion of the Spring Meeting of the European Materials Research Society (E-MRS), which was held from May 30th to June 3rd as a virtual get together.

#### **About AVANCIS GmbH**

AVANCIS develops and produces premium class solar modules based on the copper indium gallium diselenide compound (CIGS modules) "Made in Germany". This innovative technology is developed in the company's own R&D centers in Munich and Torgau and implemented in the production facilities in Torgau. AVANCIS technology dates back to pioneering work in the 1980s at Arco Solar and has evolved through many intermediate stages into today's thin-film technology. The main brands are the *SKALA* product platform as an energy-generating façade cladding material for buildings and infrastructure facilities, and the *PowerMax* photovoltaic module, which is used in ground-mounted and rooftop installations. AVANCIS has been part of the CNBM Group since 2014.

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