The performance of thin-film solar cells based on chalcopyrite has improved markedly in recent years to conversion efficiencies around 22%.

**Sharc25**, an acronym for “Super high efficiency Cu(In,Ga)Se$_2$ thin-film solar cells approaching 25%”, aims to raise the bar even higher. The five research institutes, four universities, and two companies are pursuing three strategies to achieve this goal: Improve the absorber material, harness the power of new designs for more efficient surfaces and interfaces, and optimize light management to raise the efficiency threshold another few notches.

An improvement on this scale could give the PV industry and related manufacturing industry a decisive boost. The cost of manufacturing solar modules in Europe could drop below 0.35€/W$_p$ and the cost of installed PV systems to below 0.60€/W$_p$. Further savings could be achieved by ramping up the new technology for mass production. This would drive down investment costs, for example, to less than 0.75€/W$_p$ of annual production capacity for CIGS solar module factories with more than 100 MW$_p$ manufacturing capacity.
The objective of the Sharc25 project is to achieve up to 25% conversion efficiency in thin-film solar cells made of copper indium gallium diselenide (CIGS).

The €6.2 million Sharc25 photovoltaic (PV) project is mainly funded by the European Union’s Horizon 2020 research and innovation programme and partially funded by the Swiss government. Eleven research partners from eight countries including Belgium, Finland, France, Germany, Italy, Luxembourg, Portugal, and Switzerland are on board and the project runs between May 2015 and October 2018.