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## **World Record Efficiency of 26.5% on A Tandem Solar Cell Based on A Flexible CIGS Solar Cell**

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In a collaboration between USA based MiaSolé Hi-Tech Corp and European Solliance Solar Research a power conversion efficiency of 26.5% on a tandem solar cell was established. The architecture combines two thin-film solar cell technologies: a top rigid semi-transparent perovskite solar cell with a bottom flexible copper indium gallium selenide (CIGS) cell.

This impressive efficiency was achieved by optimizing the bandgap and the efficiency of both the rigid semi-transparent perovskite top cell and the flexible CIGS bottom cell.

The CIGS was roll to roll produced on steel foil, with an impressive power conversion efficiency of 20.0%.

“Rollable, ultra light, solar cells and modules have dramatically expanded the applications of solar energy in infrastructure, electrical vehicles, and mobile energy markets. [MiaSolé](#) has delivered a rollable solar cell efficiency of 20.56% and a large area module efficiency of 18.64% on production ready equipment, and we will keep breaking more world records together with Solliance to build perovskite/CIGS tandem technology for the future.” Added Dr. Jie Zhang, CEO of MiaSolé.

The stable and scalable semi-transparent perovskite solar cell has been developed on glass. This cell architecture is currently transferred to a flexible carrier enabling a fully flexible, highly efficient solar foil.

The device was optimized to maximize the visible light conversion and at the same time to maximize the infrared light transparency in order to allow the majority of infrared light to reach the bottom CIGS cell.

This approach resulted in an efficiency of 17.5% for the top device, measured at the

maximum powerpoint, tracked for 5 minutes. At [Solliance](#) TNO, imec, and TU/e contributed to realize this perovskite solar cell.

Read the [original article](#) on Solliance Solar Research.