

## Media release

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### ***Empa signs collaboration agreement with start-up***

## **Flisom raises funding for 15MW flexible CIGS production plant**

***Flisom, a Swiss company developing technologies for manufacturing of flexible thin film CIGS solar modules (copper-indium-gallium-(di)selenide), has secured funding to further develop its technology and build a production plant with an annual capacity of 15MW in Switzerland. Besides financial backing, Flisom also signed an agreement with Empa, the Swiss Federal Laboratories for Materials Science and Technology, to provide R&D support on high-efficiency flexible CIGS solar cell technology.***

Flisom's third funding round was completed with participation from a Swiss investor along with Flisom's existing strategic investor, Tata, India's largest and most respected business house. "This new investment marks investors' satisfaction with Flisom's progress towards the development of industrial manufacturing technology for roll-to-roll production of flexible solar modules. The 15MW plant will serve as a blueprint towards the establishment of larger-scale plants to manufacture flexible solar modules at low cost. Flisom's technology shows strong potential in helping solar electricity become affordable", says Flisom's interim CEO Marc Kaelin.

"At Tata, we are keen to support the company in achieving its vision. Such technologies have a potential to transform many lives for the better", adds K.R.S. Jamwal, Executive Director, Tata Industries. "We admire the team and technology, based on a record-setting efficiency of over 20% for CIGS from Empa, which we hope will be scaled up successfully. The funding will enable Flisom to purchase equipment and hire more experts to convert an innovative Swiss technology into an industrial reality."

### **The key is roll-to-roll manufacturing**

The production technology is roll-to-roll manufacturing of flexible solar modules, involving deposition of CIGS thin films onto polymer foil. Founded as a spin-off company from ETH Zurich, Flisom has subsequently developed proprietary tools and processes for manufacturing solar modules. After moving to Empa's Duebendorf campus, Flisom has been collaborating with Empa's Laboratory for Thin Films and Photovoltaics led by Ayodhya N. Tiwari through various projects.

On 17 January 2013, Empa announced that its CIGS flexible solar cells achieved 20.4% photovoltaic conversion efficiency – a world record for CIGS technology that equals the record efficiency of polycrystalline

Si wafer solar cells. "Scale-up for large-area solar modules and adapting these complex innovative processes for industrial manufacturability is quite a challenge and requires close collaboration between research labs and industrial partner", says Pierangelo Groening, head of the Department of Advanced Materials and Surfaces and member of the Board of Directors at Empa.

Therefore, Empa and Flisom have signed a collaboration agreement on specific aspects of flexible CIGS technology, and Empa has deputed Tiwari for a part-time involvement as senior strategic officer to support Flisom's further development, a move that is instrumental to Empa's long-term strategy to support early-stage companies with global market ambitions. "This is a very special way of technology transfer – by way of sharing highly experienced staff. We expect Flisom to benefit greatly from Ayodhya Tiwari's expert knowledge and experience. I see it as sort of a kick-start for the company's new phase of development", says Empa CEO, Gian-Luca Bona. The success also highlights, according to Bona, Empa's strength in the field of renewable energy and, in particular, photovoltaics. "We have several labs here at Empa devoted to the development of various innovative thin film technologies for solar energy generation", he says.

#### **Further information**

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