

Neuchâtel, January 9th, 2017

Press Release

"INDEOtec SA awarded major R&D project grant funding by the Swiss government" for its innovative OCTOPUS - double-sided thin-film deposition platform PECVD and PVD - for Heterojunction Solar Cells manufacturing.

Neuchâtel, January 9th 2017 – INDEOtec SA (Switzerland) has been awarded a research and development grant funding from the SWISS Commission for Technology and Innovation (CTI) for the purpose of the further development of INDEOtec innovative OCTOPUS deposition platform. The total R&D project achieves a size in the range of single-digit million Swiss Francs. The project developments will be jointly executed between INDEOtec and the renowned research partner CSEM SA, and will focus on the validation of the OCTOPUS II / PECVD-PVD cluster system as well as on the demonstration of the highly innovative double-sided PECVD Mirror Reactor deposition concept, which is dedicated to the manufacturing of high-efficiency, heterojunction PV cell devices. Moreover, the project targets to demonstrate the consecutive and reproducible manufacture of cell precursors yielding to an >23% efficiency level at exceptional levels of low thickness non-uniformity for the deposited thin films (< 5%).

With respect to the strict and selective funding principles of the CTI commission, such as innovation strength, collaboration with a research center of excellence (CSEM) and a strategic positioning in growth markets, this grant funding underlines INDEOtec's emerging position as a highly innovative and growing manufacturer in the thin-film coating equipment landscape.

The project is part of the further improvement of the successfully-selling OCTOPUS II system for R&D and specific production purposes and will also contribute to the ongoing development process of the OCTOPUS III (PECVD) mass production system for heterojunction cell devices.

"For high-efficiency cells the heart of the system is the proprietary Mirror Reactor concept for the thin-film passivation layer deposition from the bottom and the top. We already demonstrated superior results and the proper functionality of the Mirror Reactor, and we would like to strengthen the confidence in the technology by a number of additional test series and the achievement of high cells efficiency before the application in our mass production tool", states Dr. Omid SHOJAEI, CEO of INDEOtec SA.



INDEOtec SA (<u>www.indeotec.com</u>) is a highly innovative thin film deposition equipment manufacturer headquartered in Neuchâtel (Switzerland). With its OCTOPUS platform the company offers a modular and fully automated cluster deposition system for the deposition of various singular or multiple stacks of thin films by means of PECVD or PVD. The proprietary PECVD Mirror Reactor technology significantly reduces the substrate handling and avoids vacuum breakage between top and bottom side deposition cycles.

CSEM—Technologies that make the difference

CSEM, founded in 1984, is a research and development center (public–private partnership) specializing in microtechnology, nanotechnology, microelectronics, system engineering, photovoltaics, and communications technologies. Around 450 highly qualified specialists from various scientific and technical disciplines work for CSEM in Neuchâtel, Zurich, Muttenz, Alpnach, and Landquart. www.csem.ch

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