

EU PVSEC 2012: Manz Presents ISS 1200 Inline Sputter System for Coating Thin-Film Solar Panels

- **Manz now supplies products for the entire thin-film process chain**
- **System also used in the manufacture of displays and OLEDs (organic light-emitting diodes)**
- **Local production in China as a basis for a fast market entry**

Reutlingen, September 25, 2012. The German high-tech engineering firm Manz AG has complemented its range of products for the thin-film solar market with an innovative vacuum system for vertically coating substrates. In this case, “complement” means adding an additional component to the Manz Total Fab Solution for thin-film panel manufacturers, a process concept whose components are mutually coordinated with each other and is already established in the market. In this concept, all the relevant steps in the process are perfectly tailored to one another – including laser processes, wet-chemical processes, and now also vacuum-coating processes as well as their fully automated connection and intelligent control. The new coating system is a compact and modular *inline sputter system* (ISS) that allows manufacturers to get a better rate of raw material utilization. The system operates based on the principle of physical vapor deposition (PVD), in which raw materials, for example molybdenum, are converted into their gaseous state with the help of a physical process and are subsequently deposited onto the glass substrate as a conductive layer.

Sputter systems offer short takt times, require little maintenance, and can be easily integrated into both new and existing production lines. “With this system, we are doing our part to make absolutely necessary cuts to solar panel production costs,” explains Dieter Manz, founder and CEO of Manz AG. At the same time, PVD vacuum-coating systems are an essential part of a fully integrated production line – like the Manz CIGSfab – and also play a major role in making thin-film solar panels just as efficient as crystalline solar panels. In early September 2012, Manz presented a thin-film solar panel with an efficiency of 14.6 percent, breaking the previous world record and underscoring the company’s position as the technological leader in this market.

The new Manz ISS 300 to ISS 1200 product platform was developed by Manz Coating GmbH, founded in 2010 in Karlstein, Germany, and is based on long-established technologies and system concepts for surface coating. In addition to the solar industry, sputter systems are also used in other high-tech markets such as display and touch sensor, and organic light-emitting diode (OLED) manufacturing. Manz is currently working on an initial customer project for a sputter system to manufacture OLED lighting substrates. In this highly promising market segment, lights based on OLED technology are manufactured on two-dimensional glass substrates.

Since a considerable part of this future market for sputter systems is in Asia, the new Manz factory in Suzhou was also equipped to manufacture these systems right from the start. By manufacturing these machines locally in China, we can achieve significant cost compared to our European competitors. In combination with Manz Coating's extensive process expertise in Germany, Manz expects to enter this market very quickly.



Photo: The German high-tech engineering firm Manz AG has complemented its range of products for the thin-film solar market with a vacuum system for vertically coating substrates.

High-resolution image available from Judith Schwarz, Storymaker GmbH, j.schwarz@storymaker.de, +49-7071-9387-2215

Manz AG – Passion for Efficiency

Manz AG, headquartered in Reutlingen, Germany, is one of the world's leading high-tech engineering firms. Founded in 1987, in recent years the company has grown from an automation specialist into a supplier of integrated production lines. Manz has expertise in six fields of technology: automation, laser processes, vacuum coating, screen printing, metrology, and wet-chemical processes. These technologies are used and developed in three strategic business areas: Display, Solar, and Battery.

The company, led by founder Dieter Manz, has been listed on the stock exchange in Germany since 2006, and currently develops and manufactures in Germany, China, Taiwan, Israel, Slovakia, and Hungary. Manz also has sales and service offices in the United States, South Korea, and India. At the beginning of 2012, Manz AG had approximately 2,000 employees, 900 of whom work in Asia. With its slogan, "Passion for Efficiency," Manz's engineers are making a promise to offer its customers – all companies active in important future markets – increasingly efficient production equipment. As an engineering firm, the company plays a significant role in reducing the cost of manufacturing end products, making these products available to large groups of buyers worldwide.

Public Relations Contact

Manz AG

Axel Bartmann

Phone: +49-7121-900-0395

Fax: +49-7121-900-099

E-mail: abartmann@manz.com