

# Manz underscores its position as a leading innovator by participating in government-sponsored projects

- Manz is an industrial partner in two cooperative research projects as part of the Photovoltaics Innovation Alliance
- o Leading manufacturers and scientific institutions are part of the team
- Important support for the company on its path to becoming a supplier of integrated production systems

Reutlingen, August 3, 2011 – Efficient solar technology "made in Germany" with decreased manufacturing costs – that is the goal of two development partnerships Manz AG is participating in with various industry and research partners. Manz has entered the first cooperative research project with the CIGS module manufacturer Würth Solar and the Center for Solar Energy and Hydrogen Research (ZSW) in Stuttgart. The goal of this project is to make more rapid advancements to the CIGS thin-film technology licensed to the company as part of the exclusive expertise and cooperation agreement with Würth Solar.

CIGS modules are the most efficient of all thin-film technologies available today. Photovoltaic cells in ZSW's laboratory, which hold the world record for efficiency with an impressive 20.3%, demonstrate that there is still enormous potential for increasing the efficiency of mass-produced cells. The primary goals of the project are to both rapidly increase efficiency while simultaneously reducing investment and manufacturing costs. The project has a total budget of €12.5 million. Manz will receive €3.8 million in subsidies over the next four years from Germany's Federal Ministry for the Environment.

Manz has also entered into another development partnership with the solar module manufacturer Schott Solar AG and Europe's largest solar energy research institute, the Fraunhofer Institute for Solar Energy Systems (ISE). The focus of this joint research project, which is being subsidized by Germany's Federal Ministry of Research, is on developing key technologies for the affordable mass production of crystalline silicon solar cells. Specifically, the goal here is also to develop novel methods that will help increase the efficiency of solar cells as well as opening up new possibilities for drastically reducing material costs. The project's budget totals €7.7 million, with €1.85 million coming from government subsidies.

"The issue here is Germany's ability to compete in our industry on an international scale," says Dieter Manz, founder and CEO of Manz AG, "and we are up against strong research initiatives in many countries, not only in China. For Manz, the support is important as we move down the path toward our strategic goal of becoming the leading supplier of fully integrated production systems."

As part of the Photovoltaics Innovation Alliance launched in August of 2010, Germany's federal government is funding select industry projects in order to reach grid parity for solar power as quickly as possible. This refers to the point at which the cost of generating solar power is competitive with other sources of energy.

## **Corporate News**



## Manz AG – passion for efficiency

Manz AG, headquartered in Reutlingen, Germany, (ISIN: DE000A0JQ5U3) 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 for crystalline solar cells and thin-film solar modules, as well as lines for manufacturing flat panel displays. One of its newest areas of business is the development and manufacture of production systems for lithium-ion batteries. The company, led by founder Dieter Manz, has been listed on the stock exchange in Germany since 2006, and currently operates production facilities in Germany, China, Taiwan, Slovakia, and Hungary. At the end of the second quarter, Manz AG had approximately 1,900 employees, 800 of which work in Asia. With its new 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.

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