

Corporate News

centrotherm photovoltaics presents top solar cell and further product updates at the leading photovoltaics trade fair in Valencia

- **ISE-certified solar cells with 19.1 percent efficiency**
- **Efficiency enhancements through product updates**
- **New system design on the market from 2011**

Blaubeuren, September 2, 2010 – At this year's 25th European Photovoltaic Solar Energy Conference and Exhibition (EU PVSEC: September 6-9, 2010 in Valencia), centrotherm photovoltaics AG is presenting new top performance values for solar cells, and further technology updates to boost efficiency along the photovoltaic value chain, as well as a new system design. The company is not only focusing on new customers for its product development, but is also offering supplementary upgrade packages. This also allows existing customers to benefit from the use of new technology by expanding their capacities and reducing their manufacturing costs through efficiency gains.

Solar cell & Module product update

With a new rear side technology for mono-crystalline silicon solar cells, the photovoltaics specialists from Blaubeuren are allowing a new top result for efficiency to be achieved. The new rear side technology is based on dielectric passivation and local contacting, thereby boosting the solar cells' efficiency. Mean efficiencies of 19.1 percent have been achieved on normal industrial production systems – and peak results of 19.2 percent. The Fraunhofer Institute for Solar Energy Systems ISE, Europe's largest solar research institution, has now certified the 19.1 percent efficiencies that have been measured within the company. The reference area is the industry standard wafer size of 240 cm² with the normal industry print screen metallization on the front and rear sides. This allows the solar cells in the solar module to be interconnected without adjustments.

In Valencia, the company will also present two upgrade variants for the integration of the selective emitter technology in production lines that are already in operation. These boost cell efficiency by up to 0.5 percentage points, and enable peak results of more than 17 percent efficiency on multi-crystalline material, and of up to 18.5 percent on mono-crystalline material.

Silicon product update

centrotherm SiTec, in which the centrotherm photovoltaics Group bundles its silicon expertise, is presenting the next generation of key equipment for silicon production. This includes the 24 Pair CVD reactor and STC-TCS converter technology: along with the throughput-optimized 24 Pair CVD reactor as the successor model to the established 18 Pair CVD reactor, the silicon specialists are highlighting the High Pressure STC-TCS converter. The latter offers greater performance thanks to significantly higher gas throughput and a stable, high conversion rate. Investment and manufacturing costs, and environmental emissions, decline as a consequence of the closed production cycle of the mutually coordinated systems.

The silicon specialists are also showcasing an improved furnace to produce multi-crystalline ingots. Mean efficiencies of 16.6 percent, and peak results of up to 17.0 percent, were achieved under regular production conditions on a pilot line. The standard market levels are otherwise 16.2 percent to 16.4 percent on multi-crystalline material. Manufacturing costs are also reduced by eight percent compared with the earlier process sequence. At the module level, results of around 236 Watt peak (Wp) per module were achieved – these are otherwise usually 210 Wp to 220 Wp on the market.

Thin film inspection product innovation

GP Solar, a one hundred percent subsidiary of centrotherm photovoltaics, is using the EU PVSEC to launch a newly developed inspection system for thin-film modules on the market. This now allows thin-film manufacturers to also take advantage of the major benefit of targeted defect analysis and classification, and to improve the overall quality of their solar modules. The smallest defects can already be identified during production, thereby reducing waste. These inspection systems can be integrated flexibly, rapidly and easily within the production line.

New product design

Cost optimization and functional design go together: for this reason, centrotherm photovoltaics has developed a modern color and form concept together with Stuttgart-based development experts bgp design, which specializes in industrial design. Optimized costs and user-friendly ergonomics consistently complement each other on the basis of the underlying design-to-cost approach. The design-to-cost procedure entails a constant

search for the most cost-efficient solution for a given set of quality standards for all individual system components from as early as the development phase. The centrotherm photovoltaics production systems will be shipped in the new design to customers in 2011 for the first time, and with further improved technology.

"It gives us great pleasure that we are again represented at the EU PVSEC this year with all our business divisions, and that we can present our all-new product design and novel efficiency-enhancing technologies to both existing and future customers", comments Dr. Peter Fath, CTO at centrotherm photovoltaics, on his company's involvement at the trade fair. "Our aim is to further expand our customers' leading positions in terms of cost-leadership and efficiency."

centrotherm photovoltaics at the 25th European Photovoltaic Solar Energy Conference and Exhibition (EU PVSEC: September 6-9, 2010, in Valencia):

Feria Valencia, hall 4, booth D 13

About centrotherm photovoltaics AG

centrotherm photovoltaics AG, which is based at Blaubeuren, is one of the world's leading technology and equipment providers for the photovoltaics sector. The company equips well-known solar companies and new sector entrants with turnkey production lines and single equipment to manufacture silicon, crystalline solar cells and thin film modules. As a consequence, the Group possesses a broad and well-founded technological basis, as well as key equipment at practically all steps of the photovoltaics value chain. centrotherm photovoltaics guarantees its customers important performance parameters such as production capacity, efficiencies, and completion deadlines. The Group employs over 1,300 staff members, and operates in Europe, Asia and the USA. In the 2009 financial year, centrotherm photovoltaics achieved revenue of EUR 509.1 million, and EBIT of EUR 37.2 million. The company is listed in the TecDax of the Frankfurt Securities Exchange.

centrotherm photovoltaics AG
Johannes-Schmid-Strasse 8
89143 Blaubeuren
Internet: www.centrotherm.de
ISIN: DE000A0JMMN2
WKN: A0JMMN

Admitted to the Regulated Market/Prime Standard, Frankfurt Securities Exchange
Corporate domicile: Germany

Contact:

Saskia Schultz-Ebert
Senior Manager Investor & Public Relations
Tel: +49 7344 918-8890
E-mail: saskia.schultz-ebert@centrotherm.de

Dr. Torsten Knödler
Manager Public Relations
Tel: +49 7344 918-8898
E-mail: torsten.knoedler@centrotherm.de

Christina Siebels, Britta Cirkel
HOSCHKE & CONSORTEN Public Relations GmbH
Tel: +49 40 3690 50-58 /-56,
E-mail: c.siebels@hoschke.de; b.cirkel@hoschke.de