

Corporate News

centrotherm photovoltaics achieves new cell and module efficiency records driven by improved crystallization process

Blaubeuren, August 23, 2010 – centrotherm SiTec GmbH, a 100 percent subsidiary of centrotherm photovoltaics AG, has achieved a new cell efficiency record through an improved process in its crystallization furnace to produce multi-crystalline ingots. Average efficiencies of 16.6 percent, and a peak result of up to 17.0 percent, were achieved under regular production conditions on a pilot line. The standard market levels usually achieved are between 16.2 and 16.4 percent on multi-crystalline material. centrotherm SiTec also cut manufacturing costs by eight percent with the new crystallization process compared with the previous process sequence. At the module level, values of around 236 Watt peak (Wp) per module were recorded – which usually stand at market levels from 210 to 220 Wp.

"This achievement underscores the validity of our strategy. Our work is bearing fruit in terms of efficiency enhancements and optimized processes that are accompanied by lower manufacturing costs along the entire solar value-creation chain", commented Dr. Albrecht Mozer, CEO of centrotherm SiTec. "We are the only fully integrated equipment provider that covers the entire photovoltaic value-creation chain all the way from polysilicon production through to solar cell and module manufacturing. We also adjust the process steps to allow the best possible integration, and we take a very targeted approach to achieving further improvements."

In the multi-crystalline ingot furnace, polysilicon particles are initially smelted in a quartz crucible at over 1,450° Celsius. The silicon melt is then converted into multi-crystalline ingots by a process of directional solidification. Bars and wafers are then cut from these crystallized silicon blocks, before being processed to produce solar cells and modules. The crystallization furnace regularly contains up to 500 kg of polysilicon, and has an optimized hot zone for a quartz crucible of 880 mm x 880 mm x 420 mm, which enables an efficient silicon smelting process and optimized crystallization process management. Further progress has also been made with the capacity of the multi-crystalline ingot furnace: the high-performance furnace can be utilized for up to 650 kg of polysilicon without major modifications.

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-creation 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

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