

**August 2008  
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### **glasstec 2008 Theme Service**

#### **Photovoltaics and Solar Thermics at the Focus of glasstec 2008**

Glass is playing an ever increasing role in the generation of heat and electricity through sunlight, which means throughout the world an increasingly lucrative market is now opening up for the glass industry and especially for machinery manufacturers. German companies are seen as the pioneers here. In machinery manufacture alone already over half the companies are involved in photovoltaics and solar thermal systems. And some are already generating 50% of their turnover in this field. A comprehensive and informative overview of the activities of this new branch of industry is provided by the sector's leading fair glasstec 2008 in Düsseldorf. From October 21 - 25, manufacturers and research institutes from throughout the world will present their latest products, manufacturing techniques and research results in the field of photovoltaics and solar thermics.

If the new innovations from German glass machinery manufacturers become reality, façades will no longer be plastered or covered in bricks or other materials in the foreseeable future. Together with roofs these façades will increasingly be used for energy generation. German glass machinery manufacturers have developed machines and plants that will make it possible to produce large format thin layer solar modules, not just every minute but now every second. And these will be mass produced and sold at prices far below those prevalent using previous production methods. Already in 2010, say sector representatives, the cost per installed watt could drop to under one Euro for the end consumer. This would mean in many industrialised nations electricity from thin layer cells would scarcely cost more than electricity from conventional power

stations, thereby achieving so-called grid parity. Worldwide, the cost per installed watt of electricity currently stands at roughly between three and five Euros.

#### Almost Unlimited Possibilities

Thin film technology is particularly suited for integration into buildings. It not only makes it possible to constantly exploit energy even without the presence of direct sunlight. The ready-made modules deployed here can also be used as design elements for sun and heat insulation, light direction, shading or noise control. Possibilities also in terms of shapes and colours are almost unlimited. Already by 2030, 50% of all newly installed solar module production plants in Germany alone will be accounted for by the thin film sector. A similar development is also being forecast for other industrial nations.

Thin film technology is particularly interesting for glass machinery manufacturers as well as for their customers because glass is used as the base material and to cover the solar cells and the production methods are very similar to those used when producing quite normal sheets of insulation glass. It is precisely this similarity that German glass machinery manufacturers used to their advantage when modifying their techniques to manufacture thin layer solar modules.

It was also in Germany that the world's first laminate-free thin-layer module was developed. Mechanical engineering company Lenhardt Maschinenbau GmbH will be showcasing the manufacturing process at glasstec. Also featured amongst exhibitors on the manufacturing side are renowned names like Applied Materials. This company is one of the world's three largest suppliers of turnkey factories for the production of solar modules. Also exhibiting here are the German companies Reis Robotics and Grenzebach. Only this year Grenzebach concluded a cooperation agreement with laser specialist Reis Robotics. While Grenzebach largely deals with handling in the production process of thin layer modules, Reis Robotics provides the techniques for the manufacture of solar cells.

Also in the module segment many renowned manufacturers like Scheuten Solar, Schott, Schüco, Sulfurcell and Sunways will be showcasing topical solar modules including thin layer modules for integration into buildings. Also featured as exhibitors on the manufacturing side - alongside the already mentioned large companies like Applied Materials or Trumpf Laser - will be Jenoptik, Solarwatt and von Ardenne. This means some 130 companies from the solar segment will be showing new techniques and manufacturing processes either at their trade fair stands or at the special show "glass technology live", this time focusing on the topics of "Glass and Energy".

However, glasstec not only has innovations to offer in the field of photovoltaics but also in solar thermics. Alongside other exhibitors Wagner & Co. Solartechnik GmbH will be showcasing the highest performing flat-plate collector to be found on the market in Germany. The collector equipped with a solar unit for water heating was rated by Germany's independent consumer body "Stiftung Warentest" as "very good". From a choice of twelve different units this one was voted overall test winner.

Glass manufacturers like AGC, Saint-Gobain and Scheuten will also be rising to the challenges and presenting new glass developments tailored to the needs of the solar industry – such as low-iron, textured or specially coated glass.

The increasing use of solar but also primarily thin layer modules as façade and roofing elements will change the kind of work demanded from manufacturers of building components, building firms and skilled tradesmen. The work of pantiles will now be performed by pre-fabricated solar modules and conventional façade cladding will also increasingly be replaced by solar modules. The skilled trade will therefore have to adapt to changes, in some areas at least.

#### Special Show "glass technology live"

This year the special show "glass technology live" is focused to a greater extent on the topics of glass and solar energy with its focal themes "Glass and Energy". The special show is subdivided here into the four exhibition areas "Solar Technology", "Innovation", "Sun and Heat Insulation" as well as "Light and Transparency". Over 50 renowned architect's offices, companies and research institutions will be presenting the latest product developments, production processes, technologies and current research results and showcasing forward-looking architecture projects in the field of glass and solar energy. The spectrum ranges from visionary studies through to specific solutions ready for mass production. The special show will be accompanied by a specialist symposium devoted, amongst other things, to such themes as photovoltaics, solar thermics and building integration. Top-flight speakers will inform the audience on current developments and trends. Amongst the topics also featured on the programme here will be "Solar Façades and Building-Integrated Solar Roofs – Forward-Looking Product Concepts" and "Development, Status and Perspectives in the Solar Industry". An entire block of lectures will also be dedicated to manufacturing technologies for thin layer modules.

Messe Düsseldorf has compiled a listing of all relevant exhibitors in the solar field at glasstec 2008 with their locations marked on a map of the exhibition center. The "Solar Plan" as well as other information on glasstec 2008 can be found at [www.glasstec.de](http://www.glasstec.de)

Photos are available upon request.

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