Press release – Technology (Renewable energy)
2011 press conference on annual results

Hanau, May 9, 2011

Optimize renewable energies and save energy with Heraeus

- Heraeus products in various fields – such as photovoltaics, solar thermal energy, or energy-efficient windows – increase the efficiency of energy production and decrease energy consumption.

According to a current study by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), the portion of the German electricity supply accounted for by renewable energies, such as wind power, photovoltaics, hydropower, and solar thermal energy, increased to approximately 17% in 2010. This percentage will rise significantly over the next few years, and not only because of the current discussion about phasing out nuclear power in Germany. The energy mix will always be a focus of public, political, and economic interest, particularly regarding how to achieve ever-better efficiency in the production of renewable energy. Heraeus develops innovative products for these applications, for example silver pastes that significantly increase the solar cells' efficiency, and quartz glass for highly efficient solar power towers (solar thermal power plant technologies). "In addition to increasing energy production, we must reduce energy consumption over the long term because the world population is steadily consuming more and more energy. Heraeus has numerous products that help save energy – both in everyday life and in industrial production," said Dr. Frank Heinricht, Chairman of Heraeus Holding GmbH Board of Management, at the press conference on annual results. Special coatings on windows help reduce energy use. Infrared emitters provide the thermal energy necessary for industrial heating processes such as drying surfaces quickly. Innovative temperature sensors from Heraeus also enable significant energy savings in the production process of the steel and aluminum industry by means of lightning-fast, high-precision temperature measurement.

Silver pastes increase the effectiveness of solar cells

Silver, in the form of conductive pastes, plays an important role for the electronics and photovoltaic industries. A great number of Heraeus products are already being used to generate environmentally friendly solar power. These products include silver-based pastes for manufacturing very delicate, high-conductivity contact paths on solar cells that reduce line and transfer resistance while minimizing shading of the solar cell surface and electrical resistance. The silver pastes play a large role in improving the effectiveness of solar cells. Heraeus is constantly developing new formulas to increase contact for solar cells and thus their efficiency. The outstanding technical performance of silver pastes for solar cell metallization makes Heraeus one of the top suppliers in this area. The permanent expansion of production capacity for silver pastes at facilities in the United States, China, and Germany contributes notably to this gain.

Thin precious-metal coatings on window glass save energy

Anyone who looks closely at office buildings and high-rises can see that the large panes of glass seem to shimmer in brown, blue or green hues. The reason for this is a thin coating, just nanometers thick, of metal and precious metal alloys, which are applied to the surface of the glass using a vacuum coating process. The coating can be applied to both the interior and exterior of the glass. This means that it not only fulfills the architectural design requirements, but also decreases the loss of heat and energy, thereby adding significantly to climate and environmental protection. Almost every new window produced in Germany, for example, has at least one coated surface. The glass industry turns to Heraeus for meter-long planar and tube-shaped sputtering targets made for large-surface coating processes for architectural glass. This application is also playing an increasingly significant role in Asia, opening up new growth potential for Heraeus.

Platinum sensors measure temperature differences with extreme precision

One of the biggest challenges facing China is the implementation of energy saving measures. As a result, the Chinese government put energy saving on the agenda in its five-year plan with the aim of accurately measuring household energy consumption. A European model for heating cost accounting based on actual consumption was introduced in the late 1990s. The heat meters employed for this purpose use platinum temperature sensors with Heraeus thin film technology. The heat meter works based on the temperature difference between two platinum temperature sensors installed in the heating circuit flow and return. In conjunction with a volume meter and an electronic unit, the heat meter calculates the amount of energy actually consumed.

Heraeus, the precious metals and technology group headquartered in Hanau, Germany, is a global, family-owned company with 160 years of tradition. Our areas of expertise include precious metals, materials and technologies, sensors, biomaterials and medical products, as well as dental products, quartz glass and specialty light sources. With product revenues of €4.1 billion and precious metal trading revenues of €17.9 billion, as well as more than 12,900 employees in over 120 subsidiaries worldwide, Heraeus holds a leading position in its global markets.

For additional information, please contact:

Dr. Jörg Wetterau
Corporate Communications
Head of Technology Media & Innovation
Heraeus Holding GmbH
Heraeusstr. 12-14
63450 Hanau, Germany
T +49 (0) 6181.35-5706
F +49(0) 6181.35-4242
joerg.wetterau@heraeus.com
www.heraeus.com

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