

## Press release

Kleinostheim, February 2015

### **Infrared emitters save energy in powder coating of alloy wheels**

Infrared emitters for heating surfaces

**During automotive manufacture there are numerous surfaces which need to be lacquered or coated, including the chassis, alloy wheels, fuel tanks, bumpers, sills or the corrosion protection on brake pads. For the car owner, it is very important the surface quality of all coated components is perfect, from inside components to chassis to alloy wheels. For the manufacturer this can sometimes be a real problem. Industrial coatings are mainly deposited and dried or cured with the assistance of heat and, generally, this is applied by hot air or infrared systems. The small footprint and the targeted application of heat make infrared an attractive heating source. Heraeus Noblelight offers both gas catalytic and electric infrared systems and will be showing infrared emitters and systems, optimized to specific applications, on stand B08, Hall 3, in the Praxis Park section of the Hanover Show, which takes place from the 13<sup>th</sup> to 17<sup>th</sup> April. The exhibition will also offer the opportunity to talk with Heraeus application specialists.**

Powder lacquers and coatings are often used to coat metal components and structures. The coating is applied as a powder, is melted under heat and then cured. Infrared systems transfer heat without the need for a transfer medium, by means of electromagnetic radiation which generates heat primarily in the material to be heated.

Infrared heat is transferred quickly and at high power and, in most cases, results in a significantly smaller oven or faster production.

#### **Electric Infrared Saves Time and Energy.**

A global supplier of alloy wheels for the automotive industry uses infrared to coat its wheels. During a recent re-organisation, the hot air oven, which had previously been used was replaced by a Carbon Infrared (CIR®) system from Heraeus Noblelight. Infrared is readily absorbed by the powder and the mass of powder is heated very quickly, so that the powder is gelled significantly faster than in the hot air oven. And, as there is no air movement, the introduction of dust particles is eliminated and the powder is not swirled around or spread. Rapid melting improves the lacquer quality and allows faster production speeds.

The new infrared oven for aluminium wheels can be adjusted for different burn-in times, allowing rapid product change-overs. In addition, short wave and Carbon infrared emitters have very fast response times, of the order of seconds. Consequently, the heating can be controlled and by connecting

with an additional temperature controller, over-heating of the material can be prevented. In addition, energy is saved, as the heating source is switched on only when required.

### **Gas Catalytic Infrared Oven**

Gas catalytic elements convert natural or propane gas into water and carbon dioxide by means of a special platinum catalyst which releases long- to medium-wave infrared radiation. This flame-less reaction is different from conventional gas infrared systems, where the gas is combusted.

Powder coatings on metal parts can be cured exceptionally well by using gas catalytic infrared ovens. The design of the oven is matched to product so that the radiation can be optimally utilized for gelling and curing. Very often the gas catalytic oven is located immediately in front of a hot air oven, so that the powder is gelled before being cured by the hot air. With respect to conventional hot air ovens, gas catalytic ovens from Heraeus Noblelight distinguish themselves by their high energy efficiency and small footprint.

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**Heraeus**, the technology group headquartered in Hanau, Germany, is a leading international family-owned company formed in 1851. We create high-value solutions for our customers, strengthening their competitiveness for the long term. Our activities focus on a number of markets: chemical and metals, energy and the environment, communications and electronics, health, mobility, and industrial applications. In fiscal year 2013, Heraeus achieved product revenue of €3.6 billion and precious metals trading revenue of €13.5 billion. With some 12,500 employees in over 110 subsidiaries worldwide, Heraeus holds a leading position in its global markets.

**Heraeus Noblelight GmbH** with its headquarters in Hanau and with subsidiaries in the USA, Great Britain, France, China and Australia, is one of the technology- and market-leaders in the production of specialist light sources and systems. In 2013, Heraeus Noblelight had an annual turnover of 138 Million € and employed 875 people worldwide. The organization develops, manufactures and markets infrared and ultraviolet emitters, systems and solutions for applications in industrial manufacture, environmental protection, medicine and cosmetics, research, development and analytical measurement techniques..

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## Heraeus Photos



Carbon infrared emitters accelerate the powder coating of aluminium wheels



A gas catalytic oven for the gelling and curing of powder coatings