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Press Release

December 22, 2006

German Aerospace Center DLR Assigns Development Request to Kinoton

Kinoton is developing a solar simulator for the Institute of Technical Thermodynamics, a department of the German Aerospace Center DLR. This “artificial sun” will be used to develop and qualify sustainable processes for the technical utilisation of concentrated solar radiation.

For providing the necessary concentrated solar irradiation for different research projects, the Institute of Technical Thermodynamics has always relied on their High Flux Solar Furnace located in Cologne, Germany. In this facility a large plane mirror with 57 m² (614 sq. ft.) redirects the sun rays onto a concentrator bundling them just like a burning glass. Via a shutter the intensity of the incoming concentrated irradiation can be adjusted to the respective application. This way temperatures up to 2000° C (3,632° Fahrenheit) and intense UV irradiation can be generated.

On cloudy days though the solar furnace cannot produce full radiation power. Besides, some applications demand idealised radiation conditions, such as constant intensity of irradiation over the whole course of a day. In the future, the sun simulator will supply what nature cannot – or cannot constantly – provide.

The proven Kinoton lamp houses form the basis for this demanding new development. With state-of-the-art 3D CAD programs Kinoton’s design team has worked out a special construction which is in the test stage already: A concave mirror 73 cm (28,7”) in diameter was combined with an XBO 6000 W/HSLA xenon lamp. This high efficiency lamp of the latest Osram production series provides optimum light yield and an extremely concentrated focal spot. Kinoton’s engineers are now simulating the effects of concentrated solar irradiation. The holes they have burned into steel plates with the new device are an impressive proof of its performance.

For the sun simulator of the Institute of Technical Thermodynamics, Kinoton will combine ten of this powerful lamp/mirror constructions. The rectifiers for the lamps will be cross-linked and can be remote-controlled by a computer.

The finished solar simulator is expected to generate a solar radiation intensity equal to the DLR Solar Furnace and will be suitable for the same research and test procedures. One of the most important fields of application are the chemical storage of sun energy. Besides this, high-temperature material testing and material ageing test can be carried out, aluminium can be melted and sulphuric acid can be disintegrated. Using a high-vacuum chamber, even experiments under outer space conditions and intensive sun radiation are possible.

About Kinoton

Kinoton, headquartered close to Munich, Germany, has become well known as one of the world's leading manufacturers of equipment and systems for post production and film presentation. The well established system provider with a staff of 160 employees keeps impressing professional circles with new technical developments. Kinoton offers complete system solutions for film and digital cinema and studio applications as well as for large format and special venue projection. The large product range also includes innovative LED display systems. More information is on the Internet at www.kinoton.com.

About the German Aerospace Center DLR

DLR (Deutsches Zentrum für Luft- und Raumfahrt) is Germany's national research center for aeronautics and space. As Germany's Space Agency, the German federal government has given DLR responsibility for the planning and implementation of the German space programme as well as international representation of Germany's interests. Besides, DLR's mission comprises research aimed at protecting the environment and the development of environmentally-friendly technologies to promote mobility, communication and security. Key industries including materials technology, medicine and software engineering profit from innovations made by DLR.