Press Information

Fine Ceramics in Space

Kyocera, one of the leading ceramic manufacturers, presents its products relevant to aerospace and astronomy applications at Space Tech Expo 2019 in Bremen from November 19th-21st.

Kyoto/London, October 16th, 2019. During Space Tech Expo 2019, Kyocera will showcase, amongst other materials and components, its specializations in cordierite, silicon-infiltrated silicon carbide, alumina and zirconia materials which are well-suited for the demanding requirements of this industry.

Cordierite

Cordierite is an extremely low thermal expansion ceramic, which is ideal for light-weight designs of mirrors and telescopes. The forming capabilities of Kyocera allow for a more efficient processing and light-weighting, while the material properties of cordierite (CO720), such as high stiffness and long-term dimensional stability, serve functional advantages over low thermal expansion glasses in such applications. Cordierite can be used both for telescope mirrors, which are now made to sizes of over one meter, as well as for structural parts which hold the mirrors in place. Kyocera's highly accurate assembly techniques can produce an entire optical system with positional tolerance of a few microns.

Silicon infiltrated silicon carbide

Kyocera's silicon-infiltrated silicon carbide (SiSiC) and its manufacturing and joining technologies allow the monolithic production of intricate, fine-detailed and complex components in a large-scaled format up to 1 m x 1 m x 650 mm, and in near future even larger. Moreover, components with water- and helium-tight inner cooling channels, undercuts, rib and fin structures can be realized. With the high thermal conductivity, strength, and hardness of SiSiC, this material is perfectly suited for manufacturing very complex components like shaped mirrors, optical assemblies, frames, fixtures, temperature control and structural components.

Alumina and Zirconia

Kyocera is also very experienced in traditional ceramic materials like alumina and zirconia. The high electrical insulation and thermal strength of alumina (F99,7) allows its use in components of ion thrusters. When required, Kyocera also supports the metallization of ceramics, along with in-house 5 axis CNC machining which can be used for manufacturing complex components with very high complexity such as camera housing. Excellent performance of the products in ultra-high vacuum is guaranteed by minimal desorption and leakage rate.

Kyocera recently expanded its manufacturing presence in Europe by acquiring two German ceramic manufacturing plants in Selb (Kyocera Fineceramics Precision GmbH) and Mannheim (Kyocera Fineceramics Solutions GmbH). With these acquisitions, in addition to its other international production facilities in Japan and USA, Kyocera comprehensively offers the entire know-how and variety of fine ceramics to the market worldwide.

For more information on Kyocera: www.kyocera.co.uk

About Kyocera

Headquartered in Kyoto, Japan, Kyocera Corporation is one of the world's leading manufacturers of fine ceramic components for the technology industry. The strategically important divisions in the Kyocera Group, which is comprised of 286 subsidiaries (as of March 31, 2019), are information and communications technologies, products which increase quality of life, and environmentally friendly products. The technology group is also one of the most experienced producers of solar energy systems worldwide, with more than 40 years of know-how in the industry.

The company is ranked #655 on Forbes magazine's 2019 "Global 2000" listing of the world's largest publicly traded companies. With a global workforce of over 77,000 employees, Kyocera posted net sales of approximately €12,99 million in fiscal year 2018/2019. The products marketed by the company in Europe include printers, digital copying systems, semiconductor-, fine ceramic-, automotive- and electronic components as well as printing devices and kitchen products. The Kyocera Group has two independent companies in the United Kingdom: Kyocera Fineceramics Ltd. and Kyocera Document Solutions.

The company also takes an active interest in cultural affairs. The Kyoto Prize, a prominent international award, is presented each year by the Inamori Foundation — established by Kyocera founder Dr. Kazuo Inamori — to individuals and groups worldwide who have contributed significantly to the scientific, cultural, and spiritual betterment of humankind (converted at approximately €818,000 per prize category).

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