# Press Information

## Kyocera showcases aerospace ceramic solutions at Space Tech Expo Europe 2024

**KYOCERA Fineceramics Europe GmbH will be presenting its high-performance technical ceramic products – including two brand-new applications for the Fine Cordierite mirror – at the trade fair taking place in Bremen, Germany from 19 to 21 November 2024.**

**Kyoto/Esslingen, 7th November 2024.** Aerospace applications require materials that can withstand the most extreme conditions. This is why Kyocera has been developing industry-orientated solutions for decades, including non-conductive functional ceramics and abrasion-resistant structural ceramics made of Fine Cordierite, silicon infiltrated silicon carbide (SiSiC) and other technical ceramics. Kyocera now presents its ceramic solutions for the aerospace industry at the Space Tech Expo that will take place in Bremen, Germany from 19 to 21 November 2024.

**High-performance material Fine Cordierite**

Kyocera's Fine Cordierite especially stands out for its minimal coefficient of thermal expansion. This guarantees high dimensional stability during temperature changes. In comparison with other materials with similar mechanical properties, this high degree of rigidity facilitates weight reductions of up to 70 per cent. Thanks to its excellent mechanical properties, Fine Cordierite is suitable for structural components that need to function reliably even under extreme conditions.

Kyocera will be presenting two innovative applications at Space Tech Expo 2024:

1. **A world first: Fine Cordierite mirrors for the construction of ground-based telescopes**

   Kyocera partnered with Kyoto Sangyo University, a private higher education institution in Kyoto, Japan, and Photocross Co., Ltd, an optical technology service provider, to develop a reflector telescope with a large, lightweight Fine Cordierite mirror.[1] In this joint project, Kyocera was responsible for manufacturing the large aspherical concave mirror as well as the small aspherical convex mirrors using its ceramic material Fine Cordierite. The material's excellent dimensional stability when exposed to temperature fluctuations is of

[1] Kyocera's research department is proud to announce that a primary and a secondary mirror made of Fine Cordierite were installed in a large ground-based telescope for the first time on 31 July 2024.

particular value. Other focuses of the partnership involved developing the next generation of large ground-based telescopes with a diameter of 30 metres or more and infrared observation instruments for space telescopes.

2. **Ceramic mirrors made of Fine Cordierite for experimental optical communication on the International Space Station (ISS)**
   Fine Cordierite has also proven to be indispensable in the field of optical communication. Kyocera's ceramic mirror made from this material has been used in the construction of the optical communication antenna on the International Space Station (ISS). This milestone is the result of 65 years of development and enables communication between space and ground stations at speeds up to 100 times faster than radio wave communication while simultaneously offering significantly higher data transmission capacity. The space mirror must fulfil four key requirements: low thermal expansion, high mechanical strength and rigidity, permanent dimensional stability and resistance to radiation. Owing to its excellent material properties and nanometre precision, Fine Cordierite was chosen as the best suited material to cope with the harsh conditions of space.

**All-round material silicon infiltrated silicon carbide (SiSiC)**

In addition to Fine Cordierite, silicon infiltrated silicon carbide (SiSiC) has also emerged as a leading high-performance material for aerospace applications. The proprietary connection and manufacturing technology facilitates the production of complex, high-precision components with unique design features. It can be used to design products with internal cavities, such as cooling channels, complex and finely detailed structures of less than 1 mm and large-scale monolithic components up to 950 x 950 x 650 mm and larger. These components are also gas- and watertight and are noted for their high strength, exceptional rigidity and reliability combined with extremely low weight. The SiSiC components are currently still in the development and testing phase.

**About Space Tech Expo Europe 2024**

Organized for the first time in 2015, Space Tech Expo Europe is Europe's largest trade fair for the space industry supply chain. With more than 700 exhibitors, the trade fair brings together start-up companies and industry experts from across Europe to report on the latest progress and products in the aerospace sector.

**Overview: Kyocera at Space Tech Expo Europe 2024**

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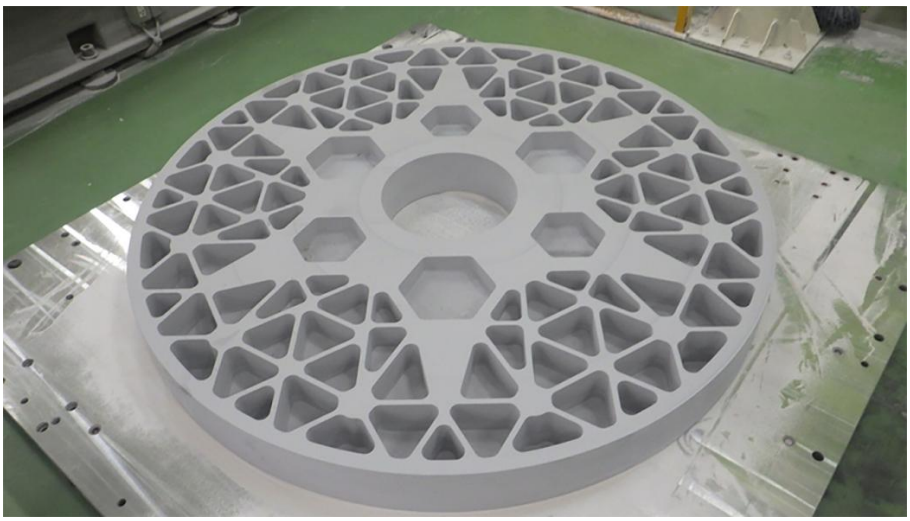
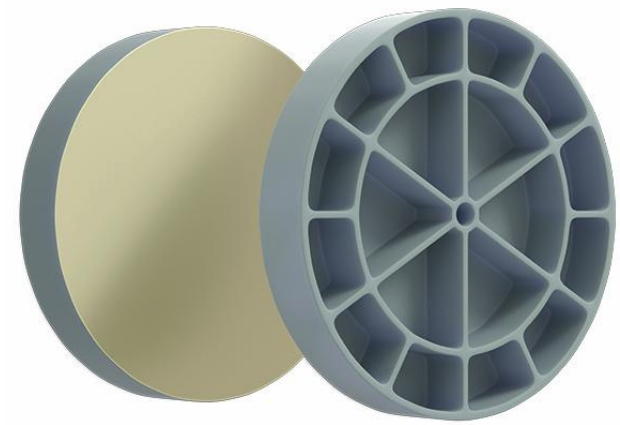
| Show | Space Tech Expo Europe 2024 |
| Date | 19 to 21 November 2024 |
| Location | Messe Bremen, Germany |
| Kyocera's booth | Hall 6, Stand T17 |



**Primary mirror made of Fine Cordierite from Kyocera**



**Fine Cordierite mirror**


**Ceramic mirror made of Fine Cordierite**

**SiSiC mirror**

## For more information on Kyocera: uk.kyocera.com

## About Kyocera

Kyocera has been successful in Europe for over 50 years. From its European headquarters in Esslingen am Neckar, KYOCERA Europe GmbH operates 27 sites including manufacturing facilities, with products ranging from fine ceramics, electronics, automotive, semiconductor and optical components to industrial tools, LCDs, touch solutions, industrial printing components, solar systems and consumer goods such as kitchen and office products.

Kyocera's high-performance ceramic products are produced and distributed by KYOCERA Fineceramics Europe GmbH, a subsidiary of KYOCERA Europe GmbH. The Kyocera Group is one of the world's leading providers of high-performance ceramic components for the technology industry, offering over 200 different ceramic materials, as well as state-of-the-art technologies and services tailored to the specific needs of each market.

KYOCERA Europe GmbH is a company of the KYOCERA Corporation headquartered in Kyoto/Japan, a world leader in semiconductor, industrial and automotive components as well as electronic components, printing and multifunction systems, and communications technology. The technology group is one of the world's most experienced manufacturers of smart energy systems, with more than 45 years of industry expertise. The Kyocera Group comprises 292 subsidiaries (31 March 2024). In England, Kyocera has a subsidiary in Frimley, KYOCERA Fineceramics Ltd. With around 79,200 employees, Kyocera generated net annual sales of around EUR 12.29 billion in the 2023/2024 fiscal year.

Kyocera is ranked 672 on Forbes magazine's 'Global 2000' list for 2023, and ranked as 'The 100 Most Sustainably Managed Companies in the World' according to the Wall Street Journal. For the second year in a row, Kyocera qualified for the Dow Jones Sustainability Index (Asia-Pacific). As well, Kyocera receives a Gold rating on EcoVadis Sustainability Survey for the second consecutive year and was acknowledged as a 'Top 100 Global Innovator 2023', being one of the world's leading innovators, for the eighth time by Clarivate.

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 worldwide who have contributed significantly to the scientific, cultural, and spiritual betterment of humankind (equivalent to approximately €596,500 per prize category).

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