

Press Information

Kyocera to showcase their Fine Ceramic products in the Mixing & Milling, Coating, Calendaring, Slitting and other integral processing equipment in the Li-ion Battery cell manufacturing.

The leading ceramic manufacturer – Kyocera will display their Fine Ceramic products at The Battery Show 2022, which will be held on June 28th-30th, in Stuttgart, Germany.

Kyoto/London, 27. June 2022. The demand for electric vehicles (EVs) is higher than forecasted despite the global economic situation caused by the COVID-19 pandemic. The unprecedented rise in demand will also increase the demand for batteries and battery cells. The surging demand gives rise to an opportunity for European machinery and equipment manufacturers to supply to the gigafactories. One of the major challenges facing the industry is the limited driving range of lithium-ion batteries. The current production batteries provide a range of up to 450 kms, while the consumers demand and prefer more. To improve the range and efficiency, advanced battery components and materials are imperative. The focus is on high-performance components that are directly used in the battery manufacturing, electric motors, power electronics and thermal management.

Kyocera has been providing Fine Ceramic products for a wide range of markets including automotive industry, industrial equipment, medical devices, and aerospace systems and has supported the development of numerous other industries. Kyocera offers a broad range of over 200 different compositions of ceramics such as Aluminium oxide, Zirconium oxide, Silicon carbides, Silicon nitride, Cordierite, Aluminium nitride, Cermet, Mullite, Sapphire, Aluminium titanate, Yttrium oxide and many more.

Key properties of Fine Ceramic materials such as high wear resistance, low metal contamination, chemical resistance, weight reduction, mechanical strength are of importance in the Battery cell manufacturing. These characteristics provide an advantage over the conventional materials (e.g. metal).

The battery slurry is highly abrasive and the battery cell manufacturing requires highly precise and durable components. Kyocera offers the relevant materials and components in this context. Rotors and classifiers in Silicon Nitride and oxide ceramics are used in the mixing and milling processes of the slurry preparation. Oxide based Slot-dies are used in electrode coating, oxide

and non-oxide ceramic high rollers are used in the calendaring process and cutting tools are used in the slitting process. Furthermore, substrate and structural components with cooling channels are used in the thermal management of the Battery.

More ceramics components will be used in the Battery cell manufacturing equipment and the Batteries for its superior properties and capabilities. Kyocera with wide range of materials and decades of history as a supplier for high performance products will continues its development of products for the EV Batteries, support EV adoption and embraces global electrification.

Pictures



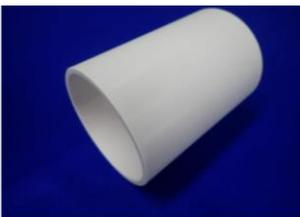
Picture 1: Silicon Nitride and Alumina Classifiers in the milling process.



Picture 2: Oxide and Non-oxide rotors in the mixing process.



Picture 3: Ceramic slot-die.



Picture 4: Ceramic high rollers in the Calendaring process.



Picture 5: Picture of alumina parts.

Links where material properties can be seen:

https://europe.kyocera.com/products/fineceramic_components/

<https://www.kyocera-precision.com/products/products-grouped-by-material/>

<https://kyocera-solutions.de/en/business-sectors/high-performance-ceramics>

Kyocera Booth Outline

Exhibition	The Battery Show Europe https://www.thebatteryshow.eu/en/Home.html Booth no. G35
Date	June 28 – 30, 2022
Location	Stuttgart, Germany



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 298 subsidiaries (as of March 31, 2022), 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 smart energy systems worldwide, with more than 45 years of know-how in the industry. The company is ranked #603 on Forbes magazine's 2021 "Global 2000" listing of the world's largest publicly traded companies.

With a global workforce of over 83,000 employees, Kyocera posted sales revenue of approximately €13,42 billion in fiscal year 2021/2022. 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 ceramic kitchen products. The KYOCERA Group has two independent companies in the United Kingdom: KYOCERA Fineceramics Ltd. and KYOCERA Document Solutions Ltd.

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 (approximately €763,000* per prize category).

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