

Press Information

Kyocera introduces inkjet printhead with over 1,500 nozzles for high-viscosity industrial materials

New proprietary piezo actuator structure enables higher viscosities and larger droplets.

Kyoto/ London, 27th January 2026. Kyocera Corporation has developed an industry-first¹ inkjet printhead capable of handling high-viscosity materials for industrial applications. This breakthrough is enabled by Kyocera's proprietary new piezo actuator and fluid channel technology.

The new printhead is expected to expand the use of inkjet technology in a wide range of industrial applications, including advanced manufacturing processes, painting and 3D printing, which have been difficult to address using conventional inkjet technology.



Example of prototype under development

Main features

- 1. New actuator structure allows higher viscosities, larger droplets**
- 2. Optimized fluid channel design allows higher viscosities, larger droplets**

¹ Among inkjet printheads with more than 1,500 nozzles capable of handling viscosities of 80 mPa/s or higher; Kyocera research, January 2026.

Development background

In recent years, the manufacturing industry is increasingly required to improve production efficiency in addition to reducing environmental impact and material waste to realize a sustainable society. Inkjet technology is highly regarded for its contribution to sustainability, as it enables the on-demand jetting of uniform, fine droplets, resulting in high material utilization efficiency and reduced waste.

Due to these characteristics, inkjet technology is attracting more attention as an innovative manufacturing process in fields such as electronic circuits, semiconductor production lines, and additive manufacturing.² In addition, in automotive painting applications, efforts to develop practical inkjet processes are underway to enable more creative designs, reduce labour in masking processes and minimize paint loss.

Leveraging the strengths cultivated through years of printhead development — namely high productivity, high resolution, and high durability — Kyocera has successfully developed technology that enables the stable jetting of high-viscosity materials. As a result, manufacturing processes that use paints and materials in viscosity ranges that were previously difficult to handle with inkjet technology have now reached a practical stage.

Kyocera will continue developing innovative technologies to reduce environmental impact, promote labour efficiency and lead the digitalization of manufacturing.



Painting: Automotive decorative coatings



3D Printing: Molds and tooling to produce complex components such as cast aluminium engine parts

² Additive manufacturing refers to a group of manufacturing technologies in which materials are layered to create three-dimensional structures.

Features

1. New actuator structure allows higher viscosities, larger droplets

By leveraging the conventional piezoelectric bend mode³, Kyocera has developed a proprietary new piezo actuator structure that enhances jetting force. This advancement enables the stable jetting of high-viscosity materials — up to 16 times higher than Kyocera’s conventional technology — and droplets up to 20 times larger. As a result, the technology enables expansion into a wide range of industrial applications, including painting and 3D printing, which were previously difficult to address with inkjet technology.

2. Optimized fluid channel design allows higher viscosities, larger droplets

In circulating printheads for high-viscosity materials, stable jetting has been a significant challenge. To address this, Kyocera has optimized the fluid channel design by leveraging proprietary fluid simulations. As a result, stable jetting is enabled, contributing to both improved productivity and quality.

Product details

Resolution	360 dpi × 360 dpi
Effective print width	111.69 mm
Number of nozzles	1,584
Viscosity⁴	80 mPa/s
Drop volume⁴	280 pL

Through this technology, Kyocera will continue to create new options for industrial inkjet applications and a more sustainable global environment.

The press material is available for download via the following link:

<https://spgroup.box.com/s/vld29242az0bq4i4lebixxy4hkwphv8>

³ Piezoelectric bend mode: A method in which a piezo actuator ejects ink by utilizing deflection generated by the piezoelectric effect.

⁴ Jetting at the above viscosity and drop volume has been confirmed under Kyocera’s evaluation conditions. (Actual jetting performance may vary depending on liquid characteristics and jetting conditions.)



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 29 sites including manufacturing facilities, with products ranging from fine ceramics, automotive, semiconductor and optical components to components for medical products, industrial tools, LCDs, touch solutions, industrial printing components, and consumer goods such as kitchen and office products.

KYOCERA Europe GmbH is a company of the [KYOCERA Corporation](#) headquartered in Kyoto/Japan, a renowned supplier in semiconductor, industrial and automotive components as well as electronic components, printing and multifunction systems, smart energy systems, and communications technology. Kyocera is one of the most experienced technology producers, with more than 65 years of industry expertise. The Kyocera Group comprises 288 subsidiaries (31 March 2025). With around 77,200 employees, Kyocera generated net annual sales of around EUR 12.43 billion in the 2024/2025 fiscal year.

Kyocera is ranked 1,123 on Forbes magazine's 'Global 2000' list for 2025 and ranked as 'The 100 Most Sustainably Managed Companies in the World' according to the Wall Street Journal. For the fourth time Kyocera has received an A ranking on the CDP A List for their performance on climate change. Kyocera has also received a silver rating in the EcoVadis Sustainability Survey and was acknowledged as a 'Top 100 Global Innovator 2026' for the tenth time by Clarivate, being one of the world's leading innovators.

Kyocera 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 €539,000 per prize category).

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