**RELEASE REF:** Xaar 2023.025 Open Day Swansea Research

**NEW INDEPENDENT RESEARCH SHOWS THE IMPACT OF JETTING HIGH VISCOSITY AQUEOUS INKS**

**Cambridge, 16th November 2023** – Visitors to Xaar’s Open Day & FuturePrint Tech conference in Cambridge last week were the first to see the results of a research study into jetting high viscosity water-based inks, performed by Dr Chris Phillips and Professor Davide Deganello at the Welsh Centre for Printing and Coating, Swansea University.

During the Open Day, Dr Chris Phillips provided independent evidence of the results of jetting higher viscosity inks when compared to ‘conventional’ viscosities on both coated and uncoated substrates.

Using the Xaar Aquinox printhead and cyan water-based inks by Nazdar, the research team showed several advantages to printing high viscosity fluids, which is enabled by Xaar’s Ultra High Viscosity Technology. Measured colour densities were seen to be up to 60 percent higher, enabling productivity gains and an enhanced gamut by jetting the higher viscosity ink.

Xaar’s printhead technology capabilities meant that the higher viscosity sample saw the same printing outcome with less ink, offering significant sustainability benefits through both reducing the volume of ink required and the energy needed in drying.

Two ink sets were tested, one with a higher pigment loading, and both high and conventional viscosity inks in each ink set had a fixed pigment to binder ratio to enable a fair comparison. This demonstrated that viscosity was the key enabler to the improved colour results rather than the pigment loading. The lower amount of water in the higher viscosity inks meant less absorption into the substrate, delivering the enhanced colour impact without the need for more pigment.

In addition, the trials on the non-coated board showed that by using Ultra High Viscosity to enable a higher pigment load than is usually possible, a far higher colour density is achieved. This opens up the possibility of removing the primer when printing onto cardboard, delivering sustainability and process simplification benefits.

Xaar’s Group R&D Director, Karl Forbes presented the results as part of his talk titled, ‘Seeing is believing’ at FuturePrint Tech’s ‘Digital Print for Manufacturing’ conference. Commenting on the success of the week’s events he said, “Visitors heard how Xaar’s inkjet is enabling the development of new fluids and providing access to the many potential benefits of digital printing.

“This independent research from Swansea University shows the impact that high viscosity inks can have in traditional print applications with Xaar’s Ultra High Viscosity Technology. By improving print quality at higher speeds with less ink and energy required, the ability to jet a wide range of high viscosity, high particle loaded fluids is driving change on many levels.”

The full results of Swansea University’s research will be made available shortly and the project will continue to investigate the process, functionality, cost and sustainability benefits, jetting high viscosity, high particle loaded fluids can deliver.

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**About Xaar**

Xaar is an inkjet innovator, providing printheads and technologies for OEM and UDI customers worldwide.

By helping customers lay down precise volumes of inks and fluids with absolute pin-point accuracy, time after time, Xaar’s inkjet printheads and technologies meet the needs of numerous markets. Covering graphics, labelling, direct-to-shape, packaging, product decoration, ceramic tile and glass decoration, décor, and outer case coding applications – as well as printing with specialist functional fluids for advanced manufacturing techniques.

Collaboration is at the very core of its business. Xaar works as a trusted partner from sites in Europe, China, and North America, providing expert insights and technical support every step of the way.

With over 30 years’ experience, around 300 patents registered or pending, and major ongoing R&D investment, Xaar’s digital printhead and precision jetting technologies create infinite opportunities for today’s sustainable manufacturing innovation.

[www.xaar.com](http://www.xaar.com)

**Contacts:**

**Xaar**: Charlotte Baile T: +44 1223 802151 E: [charlotte.baile@xaar.com](mailto:charlotte.baile@xaar.com)

**Media Global ex China:** Nielsen McAllister, Simon Wildash / Hannah Woods T: +44 1332 293939 E: [xaar@nmpr.co.uk](mailto:xaar@nmpr.co.uk)

**Media China:** Melody Chen T: +86 181 29930254 E: [melody.chen@xaar.com](mailto:melody.chen@xaar.com)