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Infrared Innovation: Excelitas Tackles the Challenge of Drying Water-Based Inkjet

By FuturePrint Editorial Team

At FuturePrint TECH in Valencia, innovation in industrial print takes centre stage — and in a standout debut presentation, [Christophe Behaghel](#) from [Excelitas](#) illuminated one of the industry's most critical challenges: the effective drying of water-based inks in inkjet printing. With extensive experience spanning Excelitas and formerly Phoseon Technologies, Christophe shared valuable insights on the role of infrared (IR) curing in this evolving sector.

Excelitas, a global leader in photonic solutions, now encompasses brands like Phoseon, Noblelight, and OmniCure. The company provides a full spectrum of UV and IR technologies—from UVC to medium-wave infrared—to support disinfection, analytics, curing, and heating applications across print and industrial markets.

Christophe's focus was on IR drying and its application in water-based inkjet—a growing area of interest as the industry shifts toward more sustainable print technologies. He began by explaining the three traditional heat transfer methods: convection (air flow), conduction (direct contact), and radiation (light energy). While each has merits, the real breakthrough comes from combining them to optimise the drying process.

With IR, wavelength selection becomes critical. Excelitas offers a range from 1,000 to 3,000 nanometres, encompassing short-wave (NIR), carbon IR (CIR), and medium-wave emitters. While short-wave IR delivers high energy quickly—making it appealing for compact inkjet systems—it lacks optimal water absorption efficiency. Medium-wave IR is far better at evaporating water but is slower



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yellow or red, leading to uneven curing. CIR helps to level the curing effect across the print surface, avoiding damage to heat-sensitive substrates.

Importantly, CIR also reduces energy consumption. Tests in Excelitas labs showed CIR could deliver a 69% energy saving compared to NIR for the same drying result. It also eliminates the need for ‘pinning lamps’ between printheads, reducing complexity, cost, and the risk of heat damage to sensitive components.

Excelitas’ InfraCompact and InfraCombi systems are designed for the graphics market, offering scalable solutions with power densities up to 250kW and widths up to 3m. Both systems include integrated air management to handle heat efficiently—vital for inkjet press integration.

Looking ahead, Christophe encouraged print OEMs exploring water-based inkjet to engage early with Excelitas. The company offers simulations, lab testing in Germany, and demo systems with interchangeable bulbs to help customers determine the optimal wavelength and configuration for their presses.

This presentation underscored the pivotal role of IR curing in enabling the next generation of sustainable inkjet printing—and marked a strong first appearance from Christophe for Excelitas at FuturePrint.