

Inkron Invests in Augmented Reality Components Development Infrastructure

Espoo, Finland: September 08, 2020 – Inkron, a Nagase Group Company, the global leader of siloxane-based, optically clear Nano-Imprint Lithography (NIL) materials, makes a strategic investment in NIL materials and components development infrastructure. The investment will significantly accelerate Inkron's development of high-performance optical materials needed in critical components of augmented reality (AR) glasses, 3D sensors and other diffractive optical elements (DOE). Inkron's ability to provide its customers with customized optical NIL materials with fast turnaround time and enhanced performance shall be significantly improved with this investment. Now Inkron can also provide component prototyping and small series manufacturing services for its customers.

The cornerstone of the investment is the purchase and installation of an EVG®7200 automated UV NIL system from EV Group (EVG). The EVG 7200 system leverages EVG's innovative SmartNIL® technology and materials expertise to enable mass manufacturing of micro- and nanoscale structures with unmatched quality. The system provides low-force and conformal imprinting, fast high-power exposure and smooth stamp detachment with unmatched throughput and low cost of ownership. The EVG 7200 system with SmartNIL technology is ideally suited for volume production of next-generation photonic devices including waveguides and DOEs, for applications such as AR and virtual reality (VR). In addition to these features, the tool that has been shipped to Inkron includes a high-intensity UV station, heated chuck and support for soft-UV-NIL for microlens molding applications.

Inkron offers NIL processable materials in a broad index of refraction (RI) range even up 2.0. The NIL materials are complemented with overcoat, gap fill and planarizing coatings with RI as low as 1.1. The combination of these material platforms and the EVG 7200 system provide an ideal infrastructure for novel optical component development with accelerated turnaround time while enabling careful optimization of the resins and the process for specific devices. In addition to the NIL equipment, Inkron has made and continues to make significant investments in optical structures manufacturing and testing equipment, including device performance and reliability testing. A dedicated team has been established to support the Inkron NIL ecosystem with material scientists, lithography process engineers and photonics experts, headed by VP Dr. Janne Kylmä. The commercial side of the NIL activities are directed by Inkron VP Operations Mr. Jukka Perento.

“Through our NILPhotonics Competence Center, EV Group partners with companies like Inkron from across the photonics supply chain to leverage our NIL technology and expertise to accelerate the development of new devices and applications,” stated Markus Wimplinger, corporate technology development & IP director at EV Group. “Working with Inkron gives us the opportunity to support their efforts in developing advanced optical resists that are critical to manufacturing next-generation optical devices.”

“We are excited to accelerate the development of our new, optimized and innovative optical resin technologies. The new EVG 7200 system plays a vital role in this strategic move. These new capabilities will help us to address the critical performance roadmaps of our customers and will help them to succeed,” stated Jukka Perento. “Our nano-imprintable high refractive index materials and matching gap filling coatings, combined with EVG's NIL system, provide the critical wafer-level solutions that optics manufacturers need in order to quickly scale up the production of their latest developments.”

About Inkron

Inkron, a member of Nagase Group, is a developer and manufacturer of high and low Refractive Index (RI) coating materials. These industry leading optical coatings cover record breaking RI range between 1.1 and 2.0 in VIS/NIR range. The high RI materials are optimized for the Nano Imprint Lithography (NIL) process. Targeted applications include DOE (Diffractive Optics Elements) such as Waveguides for XR devices, optical diffusers, LIDAR and other photonic applications. High refractive index materials are complemented by Inkron's matching low refractive index materials with RI range of 1.1-1.4. Typical applications of the low RI materials cover anti-reflective coatings (visible and NIR range), waveguide claddings and adhesive layers. The in-house synthesized resins and formulations are optically clear, thermally stable, and commercially ready for demanding applications. Other products offered by Inkron cover thermally conductive adhesives, encapsulant materials and a range of printable inks.

About EV Group (EVG)

EV Group (EVG) is a leading supplier of equipment and process solutions for the manufacture of semiconductors, microelectromechanical systems (MEMS), compound semiconductors, power devices and nanotechnology devices. Key products include wafer bonding, thin-wafer processing, lithography/nanoimprint lithography (NIL) and metrology equipment, as well as photoresist coaters, cleaners and inspection systems. Founded in 1980, EV Group services and supports an elaborate network of global customers and partners all over the world. More information about EVG is available at www.EVGroup.com.

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Figure 1. Nanoimprinted diffractive structures imprinted with EVG tool on SCHOTT substrate using Inkron's high refractive index IOC-resins



Figure 2. EVG 7200 SmartNIL® UV-Nano Imprint Lithography System