

Paul Scherrer Institute Receives World's First 200mm PhableR Photolithography System from EULITHA AG

The system will be primarily used to make large-area gratings for phase contrast X-ray imaging of breast for clinical diagnostic purposes, among other applications.

Kirchdorf, Switzerland, December 5, 2018

EULITHA, a Swiss startup company offering innovative lithography equipment and services for the nanotechnology, photonics and optoelectronic markets announced today that it has delivered its first PhableR photolithography system capable of patterning 200mm wafers to the Paul Scherrer Institute (PSI), Switzerland.

The delivered PhableR 200 exposure tool incorporates Eulitha's proprietary Displacement Talbot Lithography technology that enables robust printing of very high-resolution periodic patterns - such as gratings required for phase-contrast x-ray imaging - at low cost. The PSI system further incorporates several custom features, which were developed to address particular requirements of the research program at the institute.

PSI is the largest research institute for natural and engineering sciences in Switzerland, employing more than two thousand researchers and other staff members. The institute operates large-scale research facilities, such as the synchrotron research laboratory, Swiss Light Source and the Swiss Free Electron Laser as well as cleanroom facilities for nano-fabrication.

Dr. Konstantins Jefimovs, lead researcher in charge of acquisition and operation of the system at the institute said, "With this lithography system from Eulitha we will be able to produce periodic structures with small pitches on large areas, with high aspect ratio and on flexible supports. This unique combination of capabilities will be essential for creating necessary optical components for new generation of medical x-ray imaging tools. We are truly excited by the potential contributions of this system to our research on x-ray imaging techniques, which aims to enable cancer diagnostics with improved sensitivity at early stages and with lower dose. Supported by the SNF-R'Equip funding scheme, the system will allow us to strengthen collaboration with other research groups in Switzerland and abroad. On top of x-ray imaging applications, we plan to explore PhableR 200 in a wide range of applications, such as photonics, antireflective surfaces, spectroscopy, biosensors, bio-arrays technology,

membrane protein research, mesoscopic systems, plasmonics, metamaterials, SERS, MALDI, color filters and polarizers, encoders, nanostructured surfaces with tailored hydrophobicity properties and others.”

Dr. Harun Solak, CEO of Eulitha said, “The system we have delivered to PSI represents a significant step in the development of our PhableR line of photolithography systems, as a powerful tool capable of full, stitching-free patterning of substrates up to 200mm in size. This development will enable us to serve many new industrial and research applications requiring patterning of large area substrates. We look forward to collaborating with researchers and engineers at the PSI to facilitate the most effective use of the technology for their research goals.”

The PhableR 200 system can expose periodic patterns, such as linear gratings or two-dimensional arrays with feature sizes around 100nm. The patented focus-free imaging of the technology enables uniform printing on non-flat substrates often employed in photonic and optoelectronic sectors. Eulitha has previously announced the delivery of lithography systems to the Lund University in Sweden and University of Bath in the UK.

Eulitha AG is a spin-off company of the Paul Scherrer Institute, Switzerland. It specializes in the development of lithographic technologies for applications in optoelectronics and photonics. In addition to photolithographic exposure machines, it produces and markets nano-patterned substrates and templates. PHABLE is a registered trademark and the brand name of Eulitha's proprietary photolithography platform, which includes exposure tools and wafer patterning services.

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