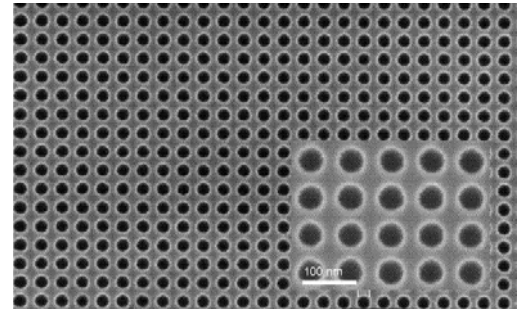


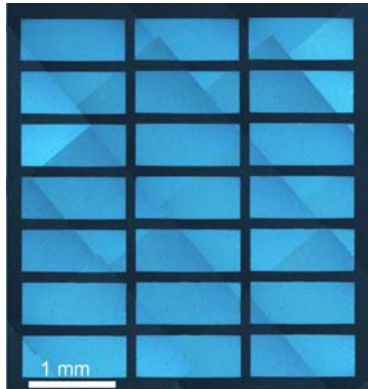
smaller better nanostructures

Eulitha adds nano-hole arrays to its standard product line

Researchers in need of nano-structures for replication processes such as nano-imprint lithography are often discouraged by the high cost of obtaining masters or templates. Eulitha has now added nano-hole arrays to its standard product line to make high-quality 2D patterns affordable. The patterns, chosen because of frequent customer inquiries consist of holes on rectangular grids. These patterns etched in Si substrates are suitable for use as nano-imprint stamps or for direct deposition experiments. Two patterns are now on offer (a) a **45 nm / 50 nm half-pitch array** and (b) a **35 nm / 37.5 nm half-pitch array**. The two dimensions denote the half-pitch along the two orthogonal directions of the rectangular grid. Please visit our [products page](#) for more information including current prices.



Large area nano-gratings delivered



Whether you are investigating magnetic properties of novel materials on nanometer scale or wanting to observe how cells behave when they are forced to live on a surface with nanometer scale corrugations the bottleneck is often producing high-resolution patterns over sufficiently large areas. Accomplishing this task with conventional tools such as e-beam lithography quickly becomes unaffordable when areas larger than a mere square-millimeter are needed. Eulitha's unique EUV-IL technology provides the solution thanks to its high throughput. Our engineers have recently demonstrated this capability by step-and-repeat exposures to cover large areas according to customer specifications (see image). This nano-grating pattern would have taken up to 10 hours to write with a state-of-the-art e-beam tool. The successful exposures also proved the reproducibility of the exposure process. Armed with the newly upgraded EUV-IL tool Eulitha is looking forward to fulfill customers' requests for even larger area nano-patterns.

Optical microscope image of a large area nano-grating sample. The image was taken in a polarized light mode where linear nano-gratings appear bright and colorful. Each rectangle in the image is a 1.2 mm x 0.5 mm linear grating with 35 nm half-pitch. The total patterned area is 12.6 mm². The diagonal lines in the figure are due to the stitching of multiple microscope images.

Upgraded EUV interference lithography tool in production

Since its inception in 2003 the EUV-IL beamline at the Paul Scherrer Institute has been breaking new ground in nano-patterning. After about five years of operation on a part-time basis as a side branch of a spectroscopy station the EUV-IL beamline underwent a major upgrade within the last year. A dedicated undulator was installed as the EUV light source and a complete set of new beamline optics designed specifically for IL application was introduced. A fully equipped process cleanroom was also added to the beamline for photoresist processing. The upgrade will enable fulltime and more stable operation as well as larger exposure areas. The new beamline has already yielded its first successful lithographic results, including production of the nanohole arrays that we have now added to our product portfolio.

