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## A new stitching soft X-ray interference lithography technique

**Yanqing Wu**

Shanghai Institute of Applied Physics - CAS, P R China

A new stitching soft X-ray interference lithography technique is developed in BL08U1B, SSRF. A special multi-beam grating mask for soft X-ray is employed in this technique, which adopted permalloy as the beam stop layer to improve the service life. An order-sorting aperture (OSA) is necessary to block the 0th order diffraction beams from the mask to realize stitching the exposure area one by one via moving the wafer with a micron precision. And a new in situ monitoring scheme using high harmonics is employed to collimate the mask and OSA. Therefore, the 0th order diffraction beams can be blocked completely and the undesired pattern around the exposed area could be eliminated. In this way, the exposed depth has been increased from less than 100 nm up to 300 nm and the exposed area is no longer decided by the mask and then could be stitched with a micron precision, up to several square centimeters.

### Biography

Yanqing Wu has completed his PhD from Fudan University and Post-doctoral studies from Pohang University of Science and Technology. He is the Team Leader of Soft X-ray Team, Shanghai Synchron Radiation Facility. He has published more than 20 papers in reputed journals.

[wuyanqing@sinap.ac.cn](mailto:wuyanqing@sinap.ac.cn)**Notes:**