

## Laterally Graded Multilayers For X-Ray Applications

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Standard laboratory x-ray sources as well as third generation synchrotron sources require x-ray optical devices in order to provide maximum flux at the samples under study. For both collimating and focusing cases there exist solutions consisting of bending dynamically a flat multilayer-coated mirror. Because of the large demagnification factors, the multilayer d-spacing must vary across the mirror. Large gradients ( $d/d$ ) in excess of 60 % or even non-linear thickness distributions are sometimes needed.

The ESRF multilayer laboratory has developed a technique for coating large mirrors up to 30 cm in length with the desired thickness profile. Hereby, sputter targets are scanned below the substrate with a specific velocity function which is modelled in advance, and which can be verified by test depositions.

We would like to present the latest progress on the installation of a parabolic collimator for laboratory Cu tubes as well as further projects on focussing devices for beamline applications. They contain the study of materials combinations with respect to their suitability for particular needs of the users.