

Replication of Multilayers for X-ray Optics

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The application of multilayers (MLs) in the grazing incidence X-ray optics allows the X-ray mirrors to be used with harder X-rays up to 100 keV. This type of X-ray mirrors (like X-ray micromirrors and small-aperture grazing incidence mirrors mostly for laboratory and microscopic applications) has in some cases quite small diameter and deposition of MLs is difficult, or even impossible. We refer on the ongoing project of MLs replication, in which the MLs are deposited on the mandrel (of a negative shape) and then replicated onto the final X-ray mirror. So far, replication experiments have been carried out with flat samples and on small aperture micromirrors. Metrology method and preliminary experimental results are presented and discussed.