

The influence of working gas pressure on interlayer mixing in magnetron-deposited Mo/Si multilayers

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The influence of Ar gas pressure (1-4 mTorr) on the growth of amorphous interfaces in Mo/Si multilayers deposited by magnetron sputtering was investigated by the methods of cross-sectional transmission electron microscopy and small-angle x-ray scattering ($\lambda = 0.154$ nm). An increase of the Ar pressure was found to result in reduction of the thicknesses of amorphous inter-layers, with composition of the layers being enriched with molybdenum. The indicated interface modification improves the EUV reflectance of Mo/Si multilayer mirrors. This work was supported by the US Department of Energy under contract number DE-AC02-05CH11231.

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