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Theoretical & Experimental Design & Optimization of Multilayer Mirrors for Soft X-Ray Reflection BAKARI HASSAN, FRANCK DELMOTTE, EVGUENI MELTCHAKOV, None — The reflection of soft X-rays is relevant for the development of ultra fast attosecond cameras, X-ray lithography, and the study of solar storms. Soft X-rays are typically absorbed, as opposed to reflected, due to all materials' absorptive nature. Co/C-am multilayers composed of 40 layers were deposited on Si & SiO2 substrates by Magneton Sputtering technique and were characterized by grazing-incidence diffraction. Theoretical interfacial roughness and layer thicknesses were simulated using the commercial software IMD, while experimental values were estimated by fitting the reflectivity data. Low reflectivity values were observed at the locations of Bragg peaks. However, through deposition optimization, reflectivity values could potentially reach values above 60%.

Bakari Hassan
None

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