

论文

Mo/SiO<sub>2</sub>软X射线多层膜反射镜的界面分析

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摘要: 用X射线衍射的动力学理论对磁控溅射法制备的Mo/SiO<sub>2</sub>多层膜低角X射线衍射谱进行拟合,定量分析了膜层的周期结构和界面粗糙度.同时,用Auger电子能谱证实了多层膜成分的周期性以及比较明晰的层界面随样品厚度的增加,界面粗糙度增加.

关键词: Mo/SiO<sub>2</sub>多层膜 磁控溅射 同步辐射 低角X射线衍射 俄歇电子能谱

THE INTERFACIAL ANALYSIS OF MO/SiO<sub>2</sub> MULTILAYERS MIRROR FOR SOFT X-RAY

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Abstract: Groups of Mo/Sio<sub>2</sub> multilayer films were fabricated by magnetron sputter ing in Ar atmosphere. Low angle X-ray diffraction analysis of the multilayers was carried out at the diffusion scattering station of BSRF. The interfacial roughness and periodic structure are investigated through simulation of low angle X-ray diffraction spectra based on the dynamical theory. The periodic structure and composition of Mo/SiO<sub>2</sub> multilayers were also characterized with AES. The results show that very good composition modulation struc ture formed, and no obvious diffusion of St and / or O through Mo layers is observed.

Keywords: Mo/Sio<sub>2</sub> multilayer magnetron sputtering interfacial roughness low angle X-ray diffraction AES

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