

结构材料及核材料性能

Mo-Re合金薄膜的辐照效应研究

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摘要 使用离子注入技术, 将200 keV氙离子注入到Mo-Re合金薄膜中, 实现对薄膜的表面选区辐照改性。该薄膜的合金成分用X射线荧光光谱(XRF)测出。利用白光干涉表面形貌仪, 测量了辐照区的溅射刻蚀深度和表面粗糙度, 评价了合金成分对薄膜辐照行为的影响。结果表明: 适量Re的加入能够显著提高合金薄膜的抗溅射能力。

关键词 [Mo-Re合金](#); [Re效应](#); [辐照损伤](#); [溅射深度](#)

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Irradiation Effect of Molybdenum-Rhenium Alloy

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Abstract Using ion implantation technology, the selective surface modification was carried out on Mo-Re alloy films after the irradiation by Xe ions of 200 keV. The different alloy components of these films were analyzed by X-ray fluorescence spectrum (XRF). On the other hand, white-light interferometric profilometer was applied to measure the etching depth and surface roughness of the irradiated area, in order to investigate the relationship between alloy components and irradiation properties. The results show that the addition of Re could improve the anti-sputtering property of the Mo alloy films.

Key words [molybdenum-rhenium alloy](#) _ [rhenium effect](#) _ [irradiation damage](#) _ [surface sputtering depth](#)

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