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论文

Mo原子溅射能量对**Mo/Si**薄膜晶相的影响

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摘要　用磁控溅射法制备了Mo/Si薄膜，用AFM和XRD分别研究了Mo原子的溅射能量不同时，Mo/Si薄膜表面形貌和晶相的变化。通过比较发现，随着Mo原子溅射能量的增大，Mo/Si薄膜表面粗糙度增加，Mo和Si的特征X射线衍射峰也越来越强，并且Mo膜层和Si膜层之间生成了MoSi2。Mo原子的溅射能量是诱导非晶Si结晶和MoSi2生成的主要原因。

关键词　Mo/Si　MoSi2　溅射能量

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Influence of sputtering energy of Mo atoms on microstructure of Mo/Si thin film

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Abstract Mo/Si bilayer thin films were prepared by sputtering Mo onto amorphous Si film grown on Si substrates. For different sputtering energies of Mo atoms, surface morphology and crystal phases of Mo/Si film were studied by AFM and XRD. As sputtering energy of Mo atoms increasing, surface roughness of Mo/Si film is increasing, characteristic diffraction peaks of Mo and Si species beome stronger and stronger, furthermore, the peak of $MoSi_2$ which may be formed between Mo layer and Si layer appears. Sputtering energy of Mo atoms is attributed to be the main cause for crystallization of amorphous Si and formation of $MoSi_2$.

Key words　Mo/Si　MoSi2　sputtering energy

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