

技术及应用

直流磁控溅射钛及钛合金薄膜的性能研究

张文峰, 刘实, 王隆保, 戎利建

中国科学院 金属研究所, 辽宁 沈阳 110016

收稿日期 2007-10-18 修回日期 2007-11-18 网络版发布日期: 2008-10-20

摘要 用直流磁控溅射的方法在Si及Mo基片上制取Ti及其Ti合金薄膜。研究了基片温度等镀膜工艺参数对薄膜性能的影响,并用XPS、XRD、SEM分析薄膜的化学组成和结构特征,对薄膜的生长模式进行分析。结果表明,合金的加入降低了晶粒尺寸;升高温度可增大薄膜晶粒尺寸,改善薄膜结合能力;合金膜的成分与靶材基本一致。

关键词 [钛; 薄膜制备; 磁控溅射](#)

分类号 [O484.1](#)

Properties of Ti and Ti-Alloy Film Deposited by Direct Current Magnetron Sputtering

ZHANG Wen-feng, LIU Shi, WANG Long-bao, RONG Li-jian

Institute of Metal Research, Chinese Academy of Sciences, Shenyang 110016, China

Abstract Ti and Ti-alloy films were deposited on Si (100) and Mo substrate by direct current(DC) magnetron sputtering method. The influences of substrate temperature and others on the film properties were discussed. The composition properties of the films were studied by XPS technique. The structures of the films were obtained using XRD and SEM techniques, and the growth model was also investigated. It is found that the grain size of the Ti-alloy films is smaller than that of pure Ti films; with increase in temperature, the grain size and adhesion of films are both increased; the composition of the films is uniform from the target.

Key words [titanium](#) _ [thin film](#) [preparation](#) _ [magnetron sputtering](#)

DOI

通讯作者

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [\[PDF全文\]\(597KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [参考文献](#)

服务与反馈

- ▶ [把本文推荐给朋友](#)
- ▶ [文章反馈](#)
- ▶ [浏览反馈信息](#)

相关信息

- ▶ [本刊中 包含“钛; 薄膜制备; 磁控溅射”的 相关文章](#)
- ▶ [本文作者相关文章](#)

- [张文峰](#)
- [刘实](#)
- [王隆保](#)
- [戎利建](#)