

技术及应用

PBS法测量Ti膜中H同位素深度分布

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摘要 在Mo底衬上制备了约5 mm的3个TiD_xTy样品, 用质子背散射(PBS)法分析了D、T在Ti膜中的深度分布, 其中, T的分析能得出较为准确的结果, 而D的分析结果受质子在Mo底衬中多次散射信号的影响偏差较大。分析结果表明, PBS法测量的T含量和浓度与样品制备过程中测量的结果一致, 且T在Ti膜中分布均匀。这证明PBS法可用于对材料中T浓度与分布的分析。

关键词 [质子背散射](#) [钛膜](#) [氢同位素](#)

分类号

Measurement of H Isotope Profile in Ti Film With PBS Method

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Abstract Three TiD_xTy films made on Mo substrates with about 5 mm thickness were analyzed by using proton backscattering (PBS) method. The spectra show that the tritium profile can get an accurate analysis result, and the deuterium profile has a big bias due to the interference of the signal coming from the proton multi-scattered from the Mo substrate. The analysis results show that the T content and concentration measured by PBS method are coincident with the measurement results got in the samples during preparing process, and the tritium has an even distribution in Ti film. It is proved that the PBS method can be applied in T content and concentration analysis in materials.

Key words [proton](#) [backscattering](#) [titanium](#) [film](#) [hydrogen](#) [isotope](#)

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