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中子辐照后~6Li-Al合金靶片中氚的测量方法研究

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摘要 建立了流气式系统捕集和化学转移法测量6Li Al合金靶片在中子辐照过程中的渗漏氚和辐照后靶片中总氚量的方法。渗漏氚的捕集方法是在流气式系统中,用含少量氢的惰性载气将渗漏氚载带出来,经高温催化氧化后被乙二醇鼓泡器捕集;靶片中的氚转移法是用NaOH溶液将合金靶片溶解,气相中的氚采用渗漏氚的捕集方法捕集,液相中的氚则蒸馏到馏分中。最后用液体闪烁计数器分别测量乙二醇鼓泡器和馏分中的氚量。测量结果与理论氚产量基本相符。

关键词 [中子辐照](#) [产氚靶件](#) [6LiAl合金](#) [氚测量](#)

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Study on Tritium Measurement Method for Irradiated ~6Li-Al Alloy Target by Neutron

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Abstract The method of tritium measurement for irradiated~6Li-Al alloy target by neutron is studied. The measurement is concerned in both the leakage tritium during neutron irradiation and the produced total tritium in the target. The procedure of the leakage tritium measurement is that tritium in the tritium target sample is carried by a mixture of inert gas and hydrogen, then tritium is captured by ethanediol in two catchpots, and the tritium activity in the ethanediol is measured by scintillation counter. The measurement procedure of total tritium in the target is that the alloy target is dissolved in NaOH solution, the tritium in gaseous phase is measured by the means of the measurement of the leakage tritium simultaneously, and then the tritium in liquid phase is distilled triply and measured by the scintillation counter. The measured tritium activities is close to the theoretical value.

Key words [neutron irradiation](#) [tritium target](#) [~6Li-Al alloy](#) [tritium measurement](#)

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