

物理

⁸⁷Kr γ 射线发射几率的重新测定

解峰; 何小兵; 张小林; 姜文刚; 包敏; 李雪松; 刘杰; 师全林

西北核技术研究所, 陕西 西安710024

收稿日期 修回日期 网络版发布日期:

摘要 在以往⁸⁷Kr的测量实验中, 壁效应校正和HPGe探测器效率刻度结果不确定度均较大。本工作针对存在的问题, 改进了实验装置, 准确进行了壁效应校正, 用长度补偿法测得了放射性活度浓度为 100.87 (1±0.86%) Bq/mL; 重新设计加工了能准确标定HPGe探测器效率的源盒, 测得⁸⁷Kr 402.6 keV γ 射线的发射几率为49.46% (1±1.9%)。

关键词 [⁸⁷Kr](#) [长度补偿法](#) [活度浓度](#) [发射几率](#) [内充气正比计数管](#) [HPGe探测器](#)

分类号

Redetermination of γ Emission Probability for ⁸⁷Kr

XIE Feng; HE Xiao-bing; ZHANG Xiao-lin; JIANG Wen-gang; BAO Min, LI Xue-song; LIU Jie; SHI Quan-lin

Northwest Institute of Nuclear Technology, Xi'an 710024, China

Abstract

Uncertainty of result for wall effect correction and efficiency calibration was bigger in our previous experiment about ⁸⁷Kr. In order to solve the problem, the experiment equipment was improved, and wall effect was exactly corrected in present work. Radioactive concentration of ⁸⁷Kr was measured by internal gas proportional counters, the result is 100.87 (1±0.86%) Bq/mL. The source box which can exactly calibrated the efficiency of HPGe detector was designed again. Emission probability of ⁸⁷Kr 402.6 keV γ -ray was determined to be 49.46% (1±1.9%) .

Key words [⁸⁷Kr](#) [length-compensated method](#) [radioactive concentration](#) [emission probability](#) [internal gas proportional counter](#) [HPGe detector](#)

DOI

通讯作者

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [\[PDF全文\]\(1087KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [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“⁸⁷Kr”的 相关文章](#)
- ▶ [本文作者相关文章](#)

- [解峰](#)
- [何小兵](#)
- [张小林](#)
- [姜文刚](#)
- [包敏](#)
- [李雪松](#)
- [刘杰](#)
- [师全林](#)