

反应堆工程

## 乏燃料燃耗与中子发射强度的关系

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**摘要** 对辐照过的低富集氧化铀燃料的燃耗与中子发射强度间的关系进行分析和研究。计算了不同初始富集度、不同燃耗、不同冷却时间的乏燃料的中子发射强度, 经分析, 证实了燃耗与中子发射强度间存在的幂函数关系, 并对影响幂函数关系的各种因素进行了研究。发现幂函数关系中的系数受初始富集度、冷却时间、燃耗范围的影响; 如果冷却时间大于2 a, 这个关系不受辐照历史的影响; 如果冷却时间小于2 a, 这个关系受辐照历史的影响。

关键词 [乏燃料](#) [燃耗](#) [中子发射强度](#) [幂函数](#)

分类号

## Relationship of Burnup and Neutron Emission Intensity for Spent Fuel

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### Abstract

The relationship between burnup and neutron emission intensity of the irradiated low-enrichment uranium oxide fuel was analyzed and studied. The neutron emission intensities of spent fuel for different initial enrichment and different burnup and different cooling time were calculated, the power function relationship between burnup and neutron emission intensity was decided and verified after analysis, and the factors that affected the power function relationship were studied. It is found that the function relationship is affected by initial enrichment, cooling time and burnup range. The function relationship is also affected by irradiation history while the cooling time is shorter than 2 a.

**Key words** [spent fuel](#) [burnup](#) [neutron emission intensity](#) [power function](#)

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