

Reevaluation of atomic-bomb neutron fluence through purification of europium separated from samples exposed to atom-bombing

メタデータ	言語: jpn 出版者: 公開日: 2022-05-19 キーワード (Ja): キーワード (En): 作成者: Nakanishi, Takashi メールアドレス: 所属:
URL	https://doi.org/10.24517/00057079

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2006 Fiscal Year Final Research Report Summary

Reevaluation of atomic-bomb neutron fluence through purification of europium separated from samples exposed to atom-bombing

Research Project

Project/Area Number

15310035

Research Category

Grant-in-Aid for Scientific Research (B)

Allocation Type

Single-year Grants

Section

一般

Research Field

Risk sciences of radiation/Chemicals

Research Institution

Kanazawa University

Principal Investigator

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Project Period (FY)

2003 – 2006

Keywords

samples exposed to atom-bombing / atomic-bomb neutrons / neutron-induced radioactivity / Eu-152 / Ac-227 / fluorescent X-ray of Sm

Research Abstract

The current dosimetry system (DS) to calculate neutron dose received by the survivor of atom-bombing in Hiroshima and Nagasaki must be proved its validity by reproducing specific radioactivity of neutron-induced radionuclides in samples exposed to atomic bomb in Hiroshima or Nagasaki. But, for the samples exposed to atomic-bomb neutrons at positions beyond 1170 m from the explosion point of Nagasaki atomic bomb, no data have been obtained for specific radioactivity of radionuclides induced with atomic-bomb neutrons.

In the present research started in 2003, highly accurate value of specific radioactivity of europium (Eu)-152 (half-life 13.542 y) was aimed to obtain for a sample exposed to atomic-bomb explosion at position 1595 m from the explosion point of Nagasaki atomic bomb.

About 19 kg of the exposed sample was subjected for the chemical separation of Eu, and crude specimen enriched in Eu thus obtained was measured with a gamma-ray spectrometer. As a result of the measurement, it beca ...▼ More

Research Products (7 results)

All 2006 2005 2004

All Journal Article (6 results) Book (1 results)

[Journal Article] Obstruction due to Sm-X-rays to the determination of ultra-low-level ¹⁵²Eu separated from a sample exposed to Nagasaki atomic-bomb 2006 ▼

[Journal Article] and T. Nakanishi, Obstruction due to Sm-X-rays to the determination of ultra-low-level ¹⁵²Eu separated from a sample exposed to Nagasaki atomic-bomb 2006 ▼

[Journal Article] ¹⁵²Eu measurements in Japan 2005 ▼

[Journal Article] ¹⁵²Eu measurements in Japan 2005 ▼

[Journal Article] Purification of europium for the determination of the specific radioactivity of ultra low-level Eu-152 in a sample exposed to atomic-bomb neutrons in Nagasaki 2004 ▼

[Journal Article] Purification of europium for the determination of the specific radioactivity of ultra low-level Eu-152 in a sample exposed to atomic-bomb neutrons in Nagasaki 2004 ▼

[Book] 放射化学用語辞典 2006 ▼

URL: https://kaken.nii.ac.jp/report/KAKENHI-PROJECT-15310035/153100352006kenkyu_seika_hokoku

Published: 2008-05-26