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Measurement of gaseous fission products on an electron-photon coincidence detector system

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Gaseous fission products have been produced via neutron irradiation of a uranium target and extracted using a custom gas processing system for measurement on a high-resolution beta-gamma coincidence detection system. The gas was extracted and measured in two stages in order to measure the prompt and delayed fission products. This poster presents an overview of the system used to extract gaseous products, and the results of the advanced coincidence techniques used to identify and quantify the radionuclides present. This work demonstrates the capability to produce gaseous radionuclides for quality assurance and calibration purposes in Radionuclide Laboratories supporting the Comprehensive Nuclear-Test-Ban Treaty (CTBT) as well as for the calibration of equipment used for criticality monitoring.

Promotional text

Fission product gases have been produced, processed and measured on a high-resolution beta-gamma coincidence spectrometry system. Results from the measurements are presented.

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