

Evaluation of Methods for Determining the Total Efficiency of HPGe Detectors

Friday 1 November 2024 12:45 (15 minutes)

Accurate determination of total efficiency is crucial for correcting the gamma coincidence summing effect in HPGe detectors. Normally, this efficiency curve is calibrated using experimental spectra from mono-peak standard sources, a method known for its high accuracy. However, in many experimental scenarios, suitable standard sources may not always be available. To overcome this limitation, alternative approaches such as theoretical calculations, Monte Carlo simulations, efficiency transfer, and semi-empirical methods have been developed. This study aims to systematically investigate and assess the reliability of these methods, with the goal of identifying the most appropriate technique for determining the total efficiency curve of HPGe detectors in the absence of mono-peak standard sources, particularly for energy ranges extending up to several MeV.

Primary authors: DMITRIEV, A.Yu.; KHIEM, L.H.; NHAT, L.T.M.; THAI, N.T.X.; THANH, P.T.; PHI, T.H.B.; CONG, V.D.

Presenter: THANH, P.T.

Session Classification: Experimental Nuclear Physics

Track Classification: Experimental Nuclear Physics