^{146}Pm

Funk et al. observed ^{146}Pm in 1960 as described in "Radioactive decay of Pm^{143}, Pm^{144}, and Pm^{146}" (1960Fu05). An enriched ^{148}Nd target was irradiated with protons from the Oak Ridge 86-in. cyclotron. ^{146}Pm was produced by (p,3n) reactions and identified by measuring γ-ray and internal conversion electron spectra. "$\gamma-\gamma$ coincidence measurements established that the 453-kev photons coincide with photons of about 745 kev. Coincidences obtained by gating with K x rays and sweeping the gamma-ray spectrum indicated that the 453-kev photons and some of the 745-kev photons coincide strongly with K x rays as shown in [the figure]. The number of K x ray-745-kev gamma ray coincidences was far too large to be accounted for by the Pm^{143} present in the source. On the basis of these coincidence data, it was concluded that levels of 453 and 1198 kev in Nd^{146} are populated by the electron-capture decay of Pm^{146}." A previously reported $\sim$1 y half-life of ^{146}Pm (1952Ki25) was not credited with the discovery because of the incorrect half-life lacking any additional supporting data.

Adapted from reference (2012Ma48)

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