

⁶³Co

Morinaga et al. discovered ⁶³Co in 1960 at Tohoku University in Sendai, Japan, which was reported in “Three new isotopes, ⁶³Co, ⁷⁵Ga, ⁸¹As” (1960Mo01). Nickel was bombarded with 25 MeV bremsstrahlung in the betatron and produced via the reaction ⁶⁴Ni(γ ,p). “After a 1.5 minutes bombardment with 25-MeV bremsstrahlung, an activity with a half-life of an order of one minute was observed. Since this activity could not be assigned to any known isotope to be produced by photoreactions on nickel and was too strong for being assigned to any impurity, it was suspected that this might belong to Co⁶³.” Chemical separations were performed to confirm the activity was due to cobalt. Additional measurements at lower energy ruled out ⁶²Co and the extracted β -end point energy of 3.6(2) MeV agreed with β -decay systematics for ⁶³Co. The measured half-life of 52(5) s is somewhat larger than the correct value of 27.4(5) s (2001Ba27), however, this discrepancy was later explained to be caused by a contamination from the 10.5 m isomer of ^{60m}Co produced in the reaction ⁶¹Ni(γ ,p) (1969Wa15). We credit Morinaga et al. with the discovery of ⁶³Co because of this explanation for the discrepancy of the half-life and because the correct determination of the β -endpoint energy. Two months prior to the submission of Morinaga et al., Preiss and Fink had assigned an incorrect half-life of 1.40(5) h to ⁶³Co (1960Pr05).

Adapted from reference (2010Sz02)

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