^{140}Ba

In the 1939 paper "Nachweis der Entstehung aktiver Bariumisotope aus Uran und Thorium durch Neutronenbestrahlung; Nachweis weiterer aktiver Bruchstücke bei der Uranspaltung" Hahn and Strassmann identified ^{140}Ba for the first time at Berlin-Dahlem in Germany (1939Ha16). ^{140}Ba was produced by irradiating Uranium with neutrons from a Ra-Be-neutron source. Decay curves were measured following chemical separation. A previously reported 300 h activity originally labeled as "Ra IV" (1938Ha01, 1939Ha15) now identified as the fission product "Ba IV" was again observed. Based on the measured half-life of the daughter activity it was tentatively assigned to ^{140}Ba: "Was die anderen Barium isotope aus dem Uran anbelangt, so läßt sich für das Ba IV vielleicht die Hypothese machen, daß es die Muttersubstanz des in der Literatur beschriebenen Radiolanthans von 31-46 Stunden Halbwertszeit mit dem vermutlichen Atomgewicht 140 ist." (Concerning the other from uranium produced barium isotopes, it is hypothesized that Ba IV may be the parent of the radioactive lanthanum which was reported with a half-life of 31-46 hours with the probable atomic weight of 140.) Hahn and Strassmann did not officially assign the 300 h activity to ^{140}Ba in subsequent papers (1939Ha14, 1939Ha20, 1940Ha23, 1940Ha21), although they confirmed the relationship of the activity to ^{140}La (1940Ha21). Subsequently this assignment was specifically made by other authors (1943Bo02, 1943We02) and it was generally adopted in the 1944 Table of Isotopes (1944Se01). The final proof was given by mass-spectroscopic measurements in 1947 (1948Ha25).

Adapted from reference (2010Sh20)

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