^{258}Db

In the 1981 paper "Identification of element 107 by α correlation chains" Münzenberg at al. described the discovery of ^{258}Db (1981Mu06). A 4.85 MeV/u ^{54}Cr from the GSI UNILAC linear accelerator bombarded ^{209}Bi targets forming ^{262}Bh in the (1n) fusion-evaporation reaction. ^{258}Db was then populated by α-decay. Recoil products were separated with the velocity filter SHIP and implanted in seven position sensitive surface barrier detectors which also measured the subsequent α-decays and spontaneous fission. Four events for the decay of ^{258}Db were measured. In addition, ^{258}Db was also formed in the fusion evaporation reaction ^{209}Bi(^{50}Ti,n) at a beam energy of 4.75 MeV/u: "^{258}105 can be produced in ^{50}Ti on ^{209}Bi irradiations by evaporation of one neutron. At 4.75 MeV/u we observed decays of (9,189±35) keV and (9,066±35) keV with ($4.0^{+1.8}_{-1.6}$) s half-life and (8,468±30) keV with (18^{+19}_{-6}) s half-life corresponding to ^{258}105 and ^{254}Lr respectively in good agreement to the data from ^{262}107 shown in the table." It is interesting to note that four years later the same group published a paper titled "The New Isotopes ^{258}105, ^{207}105, ^{254}Lr and ^{253}Lr" (1985He22) describing the formation and decay of ^{258}Db without discussing the earlier work.

Adapted from reference (2013Th02)

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