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Independent verification of element 114

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Production of numerous superheavy elements (SHE) in ^{48}Ca irradiations of actinide targets was reported by the Dubna Gas Filled Recoil Separator (DGFRS) group in past years [1]. Independent verification of these observations has been of paramount importance, but confirmation experiments failed to produce SHE in ^{48}Ca induced reactions. We report on the first successful independent verification of the production of element 114 in the reaction $^{48}\text{Ca}(^{242}\text{Pu}, 3-4n)^{287,286}\text{114}$ at a center-of-target energy of 244 MeV. Two genetically correlated decay chains were observed during 8-day experiment at the Lawrence Berkeley National Laboratory's (LBNL) 88-Inch Cyclotron. Based on the observed decay properties these decay chains were attributed to decay of $^{287}\text{114}$ and $^{286}\text{114}$ produced in 3n and 4n channel, respectively. Implications of this observation on chemistry and physics of the heaviest elements will be discussed.

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