Gamma-Ray Spectroscopy of Nuclei Along the Z=115 Decay Chain

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During the past decade correlated α-decay chains have been observed in several independent experiments using ^{48}Ca-induced fusion-evaporation reactions on actinide targets [1]. These are interpreted to originate from the production of isotopes with proton numbers Z = 113-118. In a recent experiment at the GSI Helmholtzzentrum für Schwerionenforschung GmbH in Darmstadt, Germany, using the reaction ^{48}Ca+ ^{243}Am and high-resolution charged particle and X-ray and gamma-ray coincidence spectroscopy the atomic number were measured directly in one of the isotopes in the Z = 115 decay chain [2]. The experiment used the TASISpec set-up [3] coupled to the gas-filled separator TASCA [4]. The present paper will discuss gamma-ray spectroscopy of nuclei populated along the Z = 115 decay chain.

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[2] D. Rudolph *et al.*, Phys. Rev. Lett. 111, 112502 (2013).
[3] L.-L. Andersson *et al.*, Nucl. Instrum. Meth. A 622, 164 (2010).
[4] A. Semchenkov *et al.*, Nucl. Instrum. Meth. B 266, 4153 (2008).