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Decay Study of ^{257}Rf J. QIAN, A. HEINZ, R. WINKLER, Yale Univ., R.V.F. JANSSENS, T.L. KHOO, D. SEWERYNIAK, B.B. BACK, M.P. CARPENTER, A.A. HECHT, C.L. JIANG, F.G. KONDEV, T. LAURITSEN, C.J. LISTER, D. PETERSON, A. ROBINSON, G. SAVARD, X. WANG, S. ZHU, ANL, A.B. GANSWORTHY, Surrey Univ., M. ASAI, Japan Atomic Energy Agency — Excited states in heavy odd-even nuclei allow for the measurement of single-particle energies of orbitals playing a major role in the shell stabilization of superheavy nuclei. In this work we report on decay spectroscopy of ^{257}Rf. The excited states of ^{257}Rf and its daughter ^{253}No can provide information on the single-particle structure near the deformed neutron shell N=152. ^{257}Rf was produced in the fusion-evaporation reaction ^{50}Ti + ^{208}Pb at the Argonne Tandem Linac Accelerator System, using the Fragment Mass Analyzer. The mass/charge ratio of the recoils was used for the identification of the evaporation residues. The α decays and internal conversion electrons from ^{257}Rf or its decay products were recorded in a Double-sided Silicon Strip Detector and the gamma rays coincident with the charged particles were detected in four HPGe detectors. The results are compared with those of N=153 isotones and analyzed in a theoretical Macroscopic- Microscopic framework using the universal Woods-Saxon single- particle potential. These data can test the validity of this potential for superheavy nuclei. This work was supported by the U.S. DOE under contract No. DE-AC02-06CH11357 and DE-FG02- 91ER40609.

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