

Abstract Submitted
for the HAW05 Meeting of
The American Physical Society

Alpha-gamma decay studies of ^{261}Rf and ^{257}No M. ASAI, K. TSUKADA, T. ISHII, Y. NAGAME, I. NISHINAKA, K. AKIYAMA, A. TOYOSHIMA, S. ICHIKAWA, T. ICHIKAWA, Japan Atomic Energy Research Institute, M. SAKAMA, Univ. of Tokushima, H. HABA, RIKEN, K. SUEKI, Univ. of Tsukuba, M. SHIBATA, Nagoya Univ., Y. KOJIMA, Hiroshima Univ., Y. OURA, Tokyo Metropolitan Univ. — Alpha-gamma and alpha-electron coincidence measurements were performed for the α decay of ^{261}Rf and ^{257}No to establish Nilsson single-particle states in odd-mass superheavy nuclei. The neutron single-particle configuration of $3/2[622]$ has been assigned to the ground state of ^{257}No as well as to the 124.1 keV level in ^{253}Fm . It was found that the ground state configuration of ^{257}No is different from that of the lighter $N = 155$ isotones ^{255}Fm and ^{253}Cf . Measured excitation energy in ^{257}No populated by the α decay of ^{261}Rf ($T_{1/2} = 67$ s) revealed that another α -decaying state in ^{261}Rf with $T_{1/2} = 4.2$ s reported in the α -decay chain of $^{277}\text{112}$ is not the ground state but an isomeric state. The ground state configuration of ^{261}Rf is discussed on the basis of the α - γ coincidence results.

Masato Asai
Japan Atomic Energy Research Institute

Date submitted: 12 May 2005

Electronic form version 1.4