

Abstract Submitted
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Evidence for High Spin States in ^{70}Ga C.L. TAN, R.A. HARING-KAYE, K.D. JONES, K.Q. LE, Ohio Wesleyan University, J. DÖRING, Bundesamt für Strahlenschutz, B. ABROMEIT, R. DUNGAN, R. LUBNA, S.L. TABOR, P.-L. TAI, V. TRIPATHI, J.M. VONMOSS, Florida State University, S.I. MORROW, Houghton College — High-spin states in the odd-odd ^{70}Ga nucleus were populated at Florida State University using the $^{62}\text{Ni}(^{14}\text{C}, \alpha\text{pn})$ fusion-evaporation reaction at a beam energy of 50 MeV. Gamma rays that depopulated the ^{70}Ga excited states were recorded in coincidence with a Compton-suppressed Ge array consisting of three clover detectors and seven single-crystal detectors. The existing ^{70}Ga level scheme was modified, enhanced, and extended to higher spin with the addition of eight new transitions based on the analysis of double- and triple-coincidence γ -ray spectra. Five of these transitions are associated with a new rotational band that may be based on the occupation of the $g_{9/2}$ orbital by the unpaired proton and neutron. The normalized energy differences between adjacent spin states in this new band indicate a signature-splitting pattern that is characteristic of other such bands in neighboring odd-odd nuclei. Similarly, the kinematic moments of inertia deduced for this decay sequence evolve with angular frequency in a manner typical of analogous bands in other odd-odd nuclei in this mass region.

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