

Abstract Submitted
for the HAW05 Meeting of
The American Physical Society

γ -rays from the decay of the 0.26 s isomer in $^{254}\text{No}^*$ S.K. TANDEL, U. Massachusetts Lowell, T.L. KHOO, D. SEWERYNIAK, Argonne Natl. Lab., P. CHOWDHURY, U.S. TANDEL, U. Massachusetts Lowell, I. AHMAD, B. BACK, M.P. CARPENTER, C.N. DAVIDS, A. HECHT, R.V.F. JANSSENS, F.G. KONDEV, T. LAURITSEN, C.J. LISTER, E.F. MOORE, D. PETERSON, X.F. WANG, S.F. ZHU, Argonne Natl. Lab., G. MUKHERJEE, GANIL, A. HEINZ, Yale U., P. REITER, U. Koln, Germany, P.A. BUTLER, R. HERZBERG, G. JONES, U. Liverpool, UK — The $t_{1/2}=0.26$ s, high-K isomer in ^{254}No , first identified by Ghiorso et al. and further studied by Mukherjee et al. through the detection of electrons, was populated using the $^{208}\text{Pb}(^{48}\text{Ca},2n)$ reaction at a beam energy of 219 MeV, provided by the ATLAS accelerator at Argonne. The evaporation residues were transported through the Fragment Mass Analyzer (FMA), identified by mass and then implanted in a 40x40 mm Double-Sided Silicon Strip Detector (DSSD). Conversion electrons following the de-excitation of the isomer and α -particles from ^{254}No were detected, with the requirement that all signals originate from the same DSSD pixel. The γ -rays from the decay of the isomer were detected using three Ge clover detectors placed around the DSSD. The inferred decay pattern of the isomer, based on the observed γ -rays, including two high-energy transitions observed in earlier prompt studies, indicate that the isomer decays to an excited two-quasiparticle or octupole vibrational band.

Supp. by USDOE Grant DE-FG02-94ER40848 and W-31-109-ENG-38.

S.K. Tandel
U. Massachusetts Lowell

Date submitted: 18 Aug 2005

Electronic form version 1.4