

Abstract Submitted  
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**Half-life and Branching ratio measurements of  $T = 1/2$  Mirror Nuclei** P.D. SHIDLING, D. MELCONIAN, S. BEHLING, B. FENKER, J.C. HARDY, V. HORVAT, V.E. IACOB, E. MCCLESKEY, M. MCCLESKEY, M. MEHLMAN, H.I. PARK, B. ROEDER, Cyclotron Institute, Texas A&M University, College Station TX, 77843-3366 — The  $\beta$ -decay transitions between  $T=1/2$  isospin doublets in mirror nuclei requires the measurement of decay rate and angular correlation to measure the comparative half-life. The motivation for improving the precision of the  $ft$  value is to determine the standard-model prediction for the correlation parameters with better precision. We have measured the half-life of  $^{21}\text{Na}$  and  $^{37}\text{K}$ , and the ground-state branching ratio of  $^{37}\text{K}$  to improve the precision of the  $ft$  value. For  $^{37}\text{K}$ , the  $ft$  value was limited by 0.6% uncertainty in the half-life and 0.14% uncertainty in the ground-state branching ratio. The precision of the present half-life measurement is nearly an order of magnitude improvement over the previously accepted world average. In case of  $^{21}\text{Na}$ , the  $ft$  value was limited by 0.13% uncertainty in the half-life. Another motivation for the half-life measurement comes from the fact that the half-life has only been measured thrice nearly 40 years ago. The measurements were carried out at the Cyclotron Institute, Texas A&M University. An overview of both experiments and results will be presented.

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