

Abstract Submitted  
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**Beta-decay measurement of  $^{46}\text{Cr}$**  Y. WAKABAYASHI, JAEA, H. YAMAGUCHI, T. HASHIMOTO, S. HAYAKAWA, Y. KURIHARA, D.N. BINH, D. KAHL, S. KUBONO, CNS, University of Tokyo, S. NISHIMURA, Y. GONO, RIKEN, M. SUGA, Y. FUJITA, Osaka University — For the rapid proton capture process (*rp*-process) in X-ray bursts and the core-collapse stage of supernovae, proton-rich *pf*-shell nuclei far from the line of stability play important roles. Studies of the feeding ratios and half-lives of the  $\beta$  and electron capture decays of these proton-rich *pf*-shell nuclei are of great astrophysical interest not only for nucleosynthesis but also for Fermi and Gamow-Teller transition study. The experiment to measure the half life of  $\beta$  decay of  $^{46}\text{Cr}$  was performed using the low-energy RI beam separator (CRIB) of the Center for Nuclear Study (CNS), University of Tokyo. The  $^{46}\text{Cr}$  particles were produced by the  $^{36}\text{Ar} + ^{12}\text{C}$  fusion reaction. A natural C foil of  $0.56\text{ mg/cm}^2$  was installed as the primary target. The  $^{36}\text{Ar}$  primary beam was accelerated up to  $3.6\text{ MeV/nucleon}$  by the RIKEN AVF cyclotron. A double sided Si strip detector (DSSD) of  $500\text{-}\mu\text{m}$  thickness was used as a  $\beta$ -ray detector. A Si detector of  $1.5\text{-mm}$  thickness was placed just behind the DSSD for a  $\beta$ -ray detector. To measure  $\beta$ -delayed  $\gamma$  rays, 3 clover and 1 coaxial Ge detectors were set around the target chamber. The beam was pulsed to measure the half life of the  $\beta$  decay of  $^{46}\text{Cr}$ . The  $\beta$ -delayed  $\gamma$  ray of  $^{46}\text{Cr}$  was observed in this experiment. The experimental result will be discussed.

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