

Abstract Submitted
for the DNP20 Meeting of
The American Physical Society

Spectroscopy of Beta-delayed Neutron Emitters in the ^{78}Ni Region using VANDLE¹ M. SINGH, R. YOKOYAMA, T. KING, R. GRZYWACZ, M. MADURGA, I. COX, A. KEELER, S. NEUPANE, S. NEUPANE, University of Tennessee, Knoxville, N. BREWER, K. RYKACZEWSKI, ORNL, A. FIJALKOWSKA, University of Warsaw, Poland, S. NISHIMURA, Riken Nishina Center, Japan, S. GO, Kyushu University, M. RAJABALI, Tennessee Technological University, USA, VANDLE COLLABORATION — Beta-delayed neutron emission is a prevalent decay process for neutron-rich isotopes involved in the r-process, affecting the abundance patterns of the isotopes involved. An experiment was performed at the RIKEN Nishina Center aiming at the spectroscopy of the delayed neutron precursors around ($27 \geq Z \geq 34$) the doubly-magic ^{78}Ni using VANDLE digital neutron array, and a segmented YSO based implant detector. The YSO detector has high beta-detection ($\sim 80\%$) efficiency, and good position and time resolution needed for the reliable time of flight measurements. The presentation will highlight the first results from the ongoing analysis process for the data about the decays of ($N > 50$) Ga and Cu isotopes. The results will be compared to the predictions of neutron-emission probabilities (Pn) using a shell model for the strength distribution combined with the neutron-emission model as was done previously to explain the neutron-emission branching ratios for $^{86,87}\text{Ga}$ by Yokoyama et al., 2019.

¹This research was sponsored in part by the Office of Nuclear Physics, U.S. Department of Energy under Award No. DE-FG02-96ER40983 and DE-AC05-00OR22725.

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Date submitted: 08 Jul 2020

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