Abstract Submitted
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Implementation of a high-density multichannel data acquisition system at ORNL for nuclear reaction studies[1] S.H. AHN, K.L. JONES, Univ. Tennessee at Knoxville, M. MATOS, Louisiana State Univ., D.W. BARDAYAN, K.Y. CHAE, M.S. SMITH, R.L. VARNER, ORNL, J.M. ELSON, Washington Univ. in St. Louis, M.A. FAMIANO, Western Michigan Univ. — A new detector array comprised of 24 double-sided silicon strip detectors has been under development at ORNL in order to measure nuclear reaction products with lower thresholds and better resolution than current detectors. To utilize this new array, we are implementing $\sim$2000 channels of signal processing electronics based on application-specific integrated circuits (ASICs) designed at Washington University. The ASICs handle pulse shaping, timing, triggering, and digitization of 16 channels all on a single chip. To make up 2048 channels, 128 chips will be combined and integrated into the ORNL data acquisition system. Details of the development status, tests with many types of detectors, and future plans will be presented.

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Sunghoon Ahn
The University of Tennessee at Knoxville

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