

Abstract Submitted  
for the APR06 Meeting of  
The American Physical Society

**Development of Multiplexed Analog Shaper Electronics for use with Highly Segmented Silicon Arrays**<sup>1</sup> CARL METELKO, SYLVIE HUDAN, ROMUALDO DESOUZA, Dept. of Chemistry, Indiana University/IUCF, ANDREW ALEXANDER, JOHN POEHLMAN, Dept. of Chemistry, Indiana University, MATTHEW HODEK, Bowling Green State Univ. — We report on an electronic system, MASE (Multiplexed Analog Shaper Electronics), designed to simplify the analog processing and readout from a highly segmented silicon detector array. This system focuses on providing good energy resolution and adequate timing information for up to 1024 channels. It consists of 16-channel boards which can be either used independently or as part of a larger system. The analog portion of each channel has low and high gain shapers with associated leading edge discriminators and peak hold circuits. The logic for readout of the analog signals is performed by two FPGA chips located on each board. Readout of MASE channels is multiplexed. Logical signals are transferred via LVDS while the analog signals are sequenced into a multisampling ADC. Signals are also multiplexed for inspection purposes. Shaper gains and discriminator thresholds are adjustable through DACs via a USB interface. Performance characteristics of the prototype module will be described.

<sup>1</sup>Supported by the U.S Dept. of Energy Grant No. DE.FG02-88ER.40404

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Date submitted: 12 Jan 2006

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