

Abstract Submitted
for the DNP06 Meeting of
The American Physical Society

Alpha-Gamma Coincidence Spectroscopy using a Si PSAPD and Ge DSSD combination¹ C.M. WILSON, P. CHOWDHURY, R. GRAMER, S.K. TANDEL, U. Massachusetts Lowell, N.J. HAMMOND, C.J. LISTER, S.M. FISCHER, E.F. MOORE, K.M. TEH, Argonne Nat. Lab., M. MCCLISH, K.S. SHAH, R. FARRELL, Rad. Monitoring Devices, Inc. — A 14mm x 14mm position-sensitive silicon avalanche photodiode [1] was tested for use as a charged particle detector, using alpha particles from ²⁴⁹Cf and ²²⁸Th sources. To determine the position of interaction event-by-event, an algorithm was developed to correct for the “pin-cushion” distortion characteristic of four-corner charge-fractionation devices. The detector was then tested in alpha-gamma coincidence spectroscopy, in conjunction with a double-sided germanium strip detector made up of 16 vertical and 16 horizontal 5mm wide contact strips on opposite sides [2]. The goal was to achieve high solid-angle geometry in a single set-up, with the position-sensing capabilities of both detectors yielding angular correlation information between the coincident radiation. Limitations and improvements in using such detectors will be discussed in light of the experience gained with these initial measurements. [1] K.S. Shah, et al, IEEE Trans. Nucl. Sci. 49(4),1687(2002). [2]G.D. Jones et al., Proc. Conf. *Nuclei at the Limits*, Argonne, AIP Conf. Proc. **764**, 348 (2005).

¹Supported by USDOE Grants DE-FG02-94ER40848 and W-31-109-ENG-38

Sujit Tandel

Date submitted: 05 Jul 2006

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