

Abstract Submitted  
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**Testing Novel, Position-Sensitive Detectors with Alpha-Gamma Angular Correlations**<sup>1</sup> S. LAKSHMI, P. CHOWDHURY, S.K. TANDEL, C.M. WILSON, University of Massachusetts Lowell, S. GROS, C.J. LISTER, Argonne National Laboratory, R. FARREL, M. MCCLISH, K.S. SHAH, Radiation Monitoring Devices Inc. — We report on our tests of novel, position-sensitive particle and gamma detectors for applications in nuclear physics experiments. We measure the angular correlation between the alpha particle decay of  $^{224}\text{Ra}$  to an excited state in  $^{220}\text{Rn}$ , and the subsequent gamma decay to the ground state in  $^{220}\text{Rn}$  using a  $25\text{ mm}^2$ , <200 micron thick position-sensitive avalanche photo-diode (PSAPD) for detecting the alpha particles and a 20 mm thick, 14x14 planar germanium double-sided strip detector (GeDSSD) for detecting the gamma rays. A large solid angle can be covered in a single, fixed geometry, given the excellent position resolution of the PSAPD (400 microns) and the GeDSSD (5 mm) by positioning the detectors close to the source. Improved distortion correction algorithms for the PSAPD, pixel efficiencies, method of angle reconstruction and the measured angular correlation will be presented.

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