Abstract Submitted
for the SES13 Meeting of
The American Physical Society

Electrical Bulk Resistivity Measurement of CdZnTe-based Radiation Detectors SAM UBA, MADHU GOUNDLA, CHARLES PAYTON, STEPHEN BABALOLA, Alabama A&M University, CLAUDIU MUNTELE, Cygnus, TRENT MONTGOMERY, Alabama A&M University — CdZnTe crystal works as ideal radiation detector device because of its attractive properties, especially its high band gap energy that enables it to operate at room temperature. In this research we studied the surface leakage current of CdZnTe-based detectors. We obtained current-voltage measurements of three CZT detectors and analyzed the surface leakage current as a function of surface defects and processing. The bulk resistivity of the CZT detectors were calculated from the current voltage measurements, and for each surface preparation technique we determine the surface leakage. We then compared the results and the leakage currents were correlated with surface processing during the device fabrication of the CZT crystals. Acknowledgments: Universities-Laboratories Consortium for radioisotope detection and analysis (ULCORDA), funded by DOE NNSA under the Minority Serving Institutions Partnership Program (MSIPP). This work is also supported by AAMU HBCU-UP project grant #0928 904

Sam Uba
Alabama A&M University

Date submitted: 04 Oct 2013 Electronic form version 1.4