

Abstract Submitted  
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**CZT Detector Development for Hard X-ray Astronomy** A.B. GARSON III, Washington University in St. Louis, Q. LI, M. BEILICKE, R. BOSE, A. BURGER, P. DOWKONNT, M. GROZA, G. SIMBURGER, H. KRAWCZYNSKI — Cadmium Zinc Telluride (CZT) has proven itself as an excellent material for detection of hard X-rays. Advances in crystal growth have increased the quality and size of available single CZT crystals. We report on our ongoing development and characterization of CZT detector systems. With our dedicated class-100 cleanroom, we fabricate detectors using CZT crystals from different manufactures. Using photolithography and e-beam evaporation, we can produce detectors with different contact designs (pixellated, strip, monolithic, steering grid), contact dimensions (down to 50 microns), and contact materials (In, Ti, Au, etc.) . In addition, we develop ASIC readouts for various CZT detector applications, including our characterization of the detectors. We measure I-V and C-V curves for the detectors as well as their spectroscopic performance. We compare measured results with those from detailed modelling and simulations. The CZT detector systems can then be optimized for applications such as X-ray imaging and polarimetry with satellite or balloon-borne instruments.

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