

Abstract Submitted
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A comparative analysis of deposition methods for nickel contacts onto CZT¹ JONATHAN LASSITER, SAMUEL UBA, MAXX JACKSON, SATILMIS BUDAK, Alabama A&M Univ, CLAUDIU MUNTELE, Cygnus Scientific Services, STEPHEN BABALOLA, TRENT MONTGOMERY, Alabama A&M Univ — Our studies have demonstrated quality of material surface, interface and interface contacts must be considered in fabrication of an optimally functioning radiation detector. Dangling bonds, poor surface processing, contaminants on the surface and the quality of the contacts negatively contribute to detector energy resolution, and increased leakage currents. A Cadmium Zinc Telluride (CZT) crystal had nickel contacts deposited and characterized for these three cases: a) PVD, b) sputter cleaned plus PVD, and c) Ion Beam Assisted Deposition. In each of these cases the materials were characterized through use of current voltage (IV) measurements, Gamma Ray response and Scanning Electron Microscopy. The IV curves, resistivities, gamma responses, and surface features of the sample have been analyzed and compared. These results elucidate the influence of surface processing on quality of contacts and interfaces in optimizing the fabrication of a functioning radiation detector.

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