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Characterization of deposited nickel contacts for CZT^1 JONATHAN LASSITER, SAMUEL UBA, MAXX JACKSON, SATILMIS BU-DAK, Alabama A&M Univ, CLAUDIU MUNTELE, Cygnus Scientific Services, STEPHEN BABALOLA, TRENT MONTGOMERY, Alabama A&M Univ — Cadmium Zinc Telluride (CZT), a material used in room temperature radiation detectors, has many surface features which contribute to suboptimal functioning as a radiation detector. Dangling bonds, quality of polished surface, and the contacts are contributing factors to reduced detector energy resolution, and increased leakage currents. Nickel contacts were deposited, characterized and compared to the gold chloride electroless contact, and deposited gold. We took current voltage (IV) characteristics of CZT-based detectors and obtained their Gamma response spectra. These measurements enabled us to determine an optimal metal contact deposition process and material with improved detector performance as measured by leakage current and charge collection efficiency. The work functions of the contacts were chosen to work well with CZT. Quality surfaces, and contacts may serve as a means to improve the functioning of CZT in detector applications.

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Jonathan Lassiter Alabama A&M Univ

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