

In this thesis, the influence of metal contacts, prepared on CdZnTe-based semiconductor material by electroless deposition using aqueous or alcohol based solution, on the detection quality of Gamma and X-ray detectors. The quality of metal contacts is also affected by surface treatments. From single crystal of CdZnTe the testing detector was made. Electrical, spectroscopic and optical characterization techniques were used and their results were compared for two mentioned types of contacts. The aim was to show the possibility of preparing high quality metal contacts prepared from alcohol based solution of Gold(III) chloride. Alcohol based contacts are new method for preparing chemical contacts and promise different properties from standard chemical contacts prepared from aqueous based solution of Gold(III) chloride.