GEANT4 SIMULATION OF A THERMAL NEUTRON DETECTOR WITH A BORON CONVERTER

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This paper presents the results of evaluating the theoretical efficiency of a single-layer thermal neutron detector with a solid-state converter, depending on the B4C deposition thickness. The software package Geant4 was used as a tool for numerical simulation by the Monte Carlo method. Various materials are considered as a substrate for deposition in order to reduce the influence of processes occurring in the detector in addition to the $n+^{10}B$ reactions. The simulation results are compared with experimental measurements.