

Abstract: This diploma thesis deals with particle detectors and their use. In the introduction the reader becomes familiar with concepts of radioactivity and radiation. Next part tells the reader how nuclear radiation penetrates through matter and how this is used for particle detection. Next part presents utilizing radiation in nuclear medicine and medical imaging. The main part of this work concentrates on the design and preparation of an original high school experiment. Here the aim of this experiment is described and its design and implementation is documented. Last part brings the description of technical solutions used, steering computer program developed for this experiment and results of tests.