

Scientific supervisor	
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Department	Department of Experimental Computer Physics
Laboratory	Low-level radioactivity laboratory
Group webpage	
Proposed research topic	
<i>Stationary and field high-sensitivity gamma ray spectrometry.</i>	
Short description (< 1000 characters)	
<p>Gamma ray spectrometry is a widely used analytical technique, which allows to investigate qualitatively and quantitatively content of radio-isotopes in various samples (environmental, medical etc.).</p> <p>Students will learn the construction and working principles of gamma-ray spectrometers based on high-purity germanium (HPGe) detectors. These detectors are characterized by high detection efficiency (which allows detection of even very weak radioactivity) and high energy resolution, which makes it possible to easily identify isotopes as being sources of registered radiation.</p> <p>Students will have a chance to perform themselves measurements of contents of radio-isotopes in selected samples. Two stationary high-sensitivity spectrometers operated in the Department of Experimental Computer Physics will be available for the tests.</p> <p>The laboratory is also equipped with mobile HPGe spectrometers, which can be used to register the level of natural radioactivity indoors and outdoors. Analysis of acquired spectra will allow to identify radio-isotopes contributing at most to the radioactivity level at a certain location.</p>	
Main research tool	
High sensitivity gamma ray spectrometers.	
Additional requirements to the candidate	
Basic knowledge about natural radioactivity and dosimetry	
Possibility to continue student internship in the form of:	
Diploma thesis (master's or bachelor's degree)	X
PhD study	X