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BOOK OF ABSTRACTS

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May 27 - 30, 2014 | Faculty of Electronic Engineering | Niš | Serbia

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COMPARISON OF TWO METHODS FOR HPGE DETECTOR EFFICIENCY CALIBRATION FOR CHARCOAL CANISTER RADON MEASUREMENT

Jelena Nikolić, Gordana Pantelić, Miloš Živanović, Milica Rajačić, Dragana Todorović

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The charcoal canister method of radon concentration estimation according to US EPA protocol 520/5-87-005, is the most widely used method of screening. This method is based on radon adsorption on coal and measurement of gamma radiation of radon daughters. For the purpose of gamma spectrometry, appropriate efficiency calibration of the measuring system must be performed. The most usual method of calibration is using standard canister, a sealed canister with the same matrix and geometry as the canisters used for measurements, but with the known activity of radon. In absence of standard canister, a different method of efficiency calibration has to be implemented.

This paper presents the results of efficiency calibration using EFTRAN efficiency transfer software. Efficiency was calculated using soil matrix cylindrical secondary reference material as a starting point. Calculated efficiency is then compared to the one obtained using standard canister and applied to a realistic measurement in order to evaluate the results of the efficiency transfer.