Development of a Less Expensive Method for Radon Measurements

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The project consists in the elaboration of a measurer of radon gas through the conditioning of a Geiger-Müller counter, with the purpose of making a portable, less expensive and more precise prototype that gives immediate data for the equipment to be universal, i. e., being capable of using it in any place of the world at a low cost and giving useful results. As well as the detection of radon in my school. The development of the equipment consists mainly in a Polyvinyl Chloride structure, better known as PVC, that counts with the radiation detector in its interior, in this case the Geiger-Müller counter, an activated carbon packaged bed, and a data output, in order to facilitate readings directly on the computer. The prototype of this project was compared with a calibrated thermoluminescence dosimeter, having a linear correlation coefficient of 0.9997 in the radiation measurements inside the educational institution, which demonstrate the equipment efficiency. At the same time, it is worth mentioning the radon values obtained, where the maximum was 202.9 Bq / m3, which exceeds what is recommended by the World Health Organization, so another objective of the project is to raise awareness among the general population about the hazards that can cause being in a closed environment with high amounts of this harmful gas.

Awards Won:

Fourth Award of $500