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Impact of Realtime Alpha Spectroscopy on the Measurement of Radium and Radon Isotopes in Water

ABSTRACT

The RAD7 Electronic Radon Detector is able to make continuous and/or grab-sample measurements of ^{222}Rn , ^{220}Rn , ^{226}Ra , and ^{224}Ra , in water. Techniques for each of these measurements are briefly described, and some experimental results presented. The success of all the methods is dependent on the ability of the RAD7 to make a high-resolution, realtime analysis of the energy spectra of alpha decays occurring within the measurement chamber. For each application, the necessity of the spectral analysis is explained and the consequences considered of failure to make the analysis.