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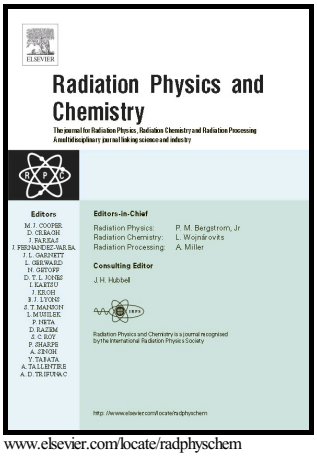

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Measurement of beta-gamma coincidence with a multi-parameter analyzer system

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Abstract

A new version of the Iranian Noble Gas Analyzing System (INGAS) has been improved to facilitate measurement of beta-gamma coincidence events. It employs a new prototype list-mode multi-parameter data analyzer system, MPA4300. In order to test the new version performance, it has used to obtain energy spectra from radioxenon isotopes using the detector assembly of the Iranian Noble Gas Analyzing System. The MPA4300 is able to set the coinciding parameters, extract the corresponding spectrum, and through the use of event by event list file, can replay the measurement in offline mode. A great novelty of this work is the use of internal timing circuit in MPA4300 instead of using standard pick up time modules to identify coincidence events of detectors. A detailed description of the measuring ^{222}Rn and ^{131}mXe is presented.

Keywords: Multi–parameter analyzer, particle -gamma coincidence, list-mode, radio-xenon, Noble Gas Analyzing System