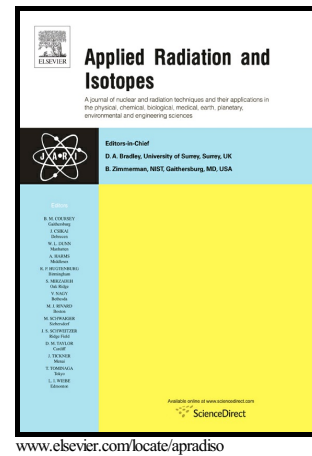


# Author's Accepted Manuscript

## A New Approach in Evaluating the Surface Beta Contamination Using the Direct Method of Measurement

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**Abstract:**

This paper describes a new approach in evaluating the surface beta contamination using the direct method of measurement. It makes use of previous results obtained in numerical modeling of electron transport in planar geometry and is mainly based on the estimation of the efficiency of contamination sources for beta radiation and its standard uncertainty using the available information concerning the component materials of the sources and their main parameters. Experimental results illustrate the appropriateness of the new approach for surface beta contamination measurements.

**Keywords:**

surface contamination, method of measurement, uncertainty of measurement.

**1. Introduction**

Surface contamination measurements are an important tool for radiation protection and for clearing potentially contaminated waste items (ISO, 1996; EU, 1998). Surface contamination is quantified in terms of activity per unit area, the quantity that is normally used to specify “derived limits”, i.e. maximum limits of surface contamination (ISO, 2016).

Surface contamination can be evaluated by direct and indirect methods of measurement. Direct measurements are carried out with surface contamination monitors that respond to both removable and

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