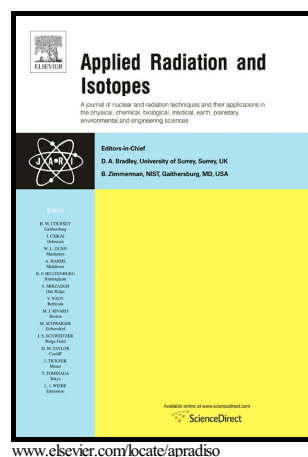


A low-energy set-up for gamma-ray spectrometry of NORM tailored to the needs of a secondary smelting facility

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A low-energy set-up for gamma-ray spectrometry of NORM tailored to the needs of a secondary smelting facility

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ABSTRACT

A measurement station dedicated for quantitative radiological characterisation of naturally occurring radionuclides in a metallurgical company and based on gamma-ray spectrometry was developed. The station is intended for performing quality control of final non-ferrous metal products and for radiological checks of incoming materials. A low-background point-contact HPGe-detector was used and the signal was split in two branches to enable collecting simultaneously spectra with high amplification (for gamma-ray energies below 250 keV) and low amplification.

Keywords: ²¹⁰Pb; ²¹⁰Po; metallurgy; industry; gamma-ray spectrometry; naturally occurring radionuclides

1. Introduction

In the context of striving for a sustainable society, industrial residue is increasingly used as input-material for certain industries. Many metals can for example be extracted and recycled in this way. In the frame of the European project "MetroNORM" (Metrology for processing materials with high natural radioactivity) several European NMIs (National Metrological

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