

A XRF METHOD BASED ON SELECTIVE EXCITATION AND INTEGRAL COUNTING OF THE SAMPLE EMISSION PHOTON ^(*)

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ABSTRACT

This work presents a spectrometric method for x-ray fluorescence, based on selective excitation and integral counting of the emitted photons from the sample (SEICXRF). The selective excitation consists in a quasi-monochromatic scanning of the incident beam. This beam can be extracted from a continuous spectrum of the x-ray source (synchrotron or x-ray tube). All emitted fluorescent radiation can be detected with or without energy resolution through a proportional counter or a centiliter detector. The characteristic spectrum looks like an absorption coefficient spectrum, with intensity jumps in the absorption edges of the detected elements. There exist a continuo diminishing of the intensity between jumps. This paper shows the general characteristics of the method, the acquisition of the spectra, the spectrometer, the algorithms of quantification, limitations and scopes.

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