

EXPERIMENTAL METHOD TO DETERMINE THE ABSOLUTE EFFICIENCY CURVE OF A WAVELENGTH DISPERSIVE SPECTROMETER

J. C. Trincavelli, S. P. Limandri, A. C. Carreras y R. D. Bonetto.

ABSTRACT: A method for the experimental determination of the absolute efficiency of wavelength dispersive spectrometers was developed, based on the comparison of spectra measured with a wavelength dispersive system and with an energy dispersive spectrometer. The aim of studying this parameter arises because its knowledge is necessary to perform standardless analysis. A simple analytical expression was obtained for the efficiency curve for three crystals (TAP, PET and LiF) of the spectrometer used, within an energy range from 0.77 to 10.83 keV. Although this expression is particular for the system used in this work, the method may be extended to other spectrometers and crystals for electron probe microanalysis and X-ray fluorescence.