

FUNDAMENTAL PARAMETERS ALGORITHM FOR SEICXRF METHOD APPLIED TO BINARY AND TERNARY SAMPLES

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The algorithm based in fundamental parameters corresponding to **SEICXRF** method (**S**elective **E**xcitation and **I**ntegral **C**ount **XRF**) recently developed by Figueroa is applied to several binary and ternary samples for prove its validity. The methodology used in the calculus is similar to Rousseau fundamental parameters method, but the main difference between both is the considerations about the X-ray secondary fluorescence. In the new experimental method, the fluorescence yield by photons corresponding to the absorption edges with energies greater than the absorption edge energy of analyte does not occur. This secondary fluorescence appears as consequence of integral count and it is created by the primary fluorescence yield of the atoms whose absorption edge energies are lesser than the primary fluorescence energy of the analyte.

This algorithm also considers the effect of the decrement of the sample fluorescent background just at the jump, originated by the change of the absorption coefficient at the absorption edge energy of the element of interest. To consider these two effects, including the primary fluorescence in the calculus, allows obtain the net fluorescence originated by the analyte at its own energy edge.

The results obtained confirm that it is possible to apply this algorithm to binary and ternary samples whose elemental concentrations are upper 10% and lower 90%, with good approximation.