Energy-Dispersive X-Ray Fluorescence Spectrometry with Synchrotron Radiation

Carlos A. Pérez
Grupo de Fluorescencia e Absorção de Raios-X
Laboratorio Nacional de Luz Sincrotrón (LNLS)
Campinas – São Paulo - Brasil

PROGRAM

1. Introduction
1.1. The Interaction of X-ray with Matter.
1.2. Derivation of the Primary Fluorescence Intensity.
1.3. Interelement effects (Absorption-Enhancement).
1.4. Properties of Synchrotron Radiation for the X-Ray Fluorescence Analysis.
2. Quantification by X-Ray Fluorescence Analysis
2.1. X-Ray Fluorescence Spectrum Evaluation
2.2. Concept of Minimum Detection Limits (MDL) in ED-XRF.
2.3. Introduction to Main Methods and Models.
3. Applications of Synchrotron Radiation X-Ray Fluorescence
3.1. Variants of the bulk techniques:
3.1.1. Grazing-incidence and emission X-Ray Fluorescence (GI-XRF, GE-XRF)

3.1.2. Micro X-Ray Fluorescence (m-XRF)

3.1.3. X-Ray Fluorescence Micro Tomography (XRF-mT)
3.2. Some examples of applications to Environmental, Biological and Geological sciences.

Recommended Bibliography:

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Â· T. Shiraiwa and N. Fujino, *Japanese Journal of Applied Physic*, vol. 5 (10), 886-899 (1966).

Â· Z. Li-Xing, *X-Ray Spectrometry*, 13(2), 52-54 (1984).

Â· *Quantitative X-Ray Spectrometry*, Ed. R. Jenkins, R.W. Gould and Dale Gedcke, Practical Spectroscopy Serie, vol 20, Marce Dekker Inc., ISBN 0-8247-9554-7.

Â· *Handbook of X-Ray Spectrometry*, Ed. R. Van Grieken and A. Markowick, Practical Spectroscopy series, vol 14, Marcel Dekker Inc., ISBN 0-8247-8483-9.

Â· P. Van Espen, K. Janssens, and J. Nobels, *Chemmometrics and Intelligent Laboratory Systems*, 1 109-114, (1986).