Probe Software

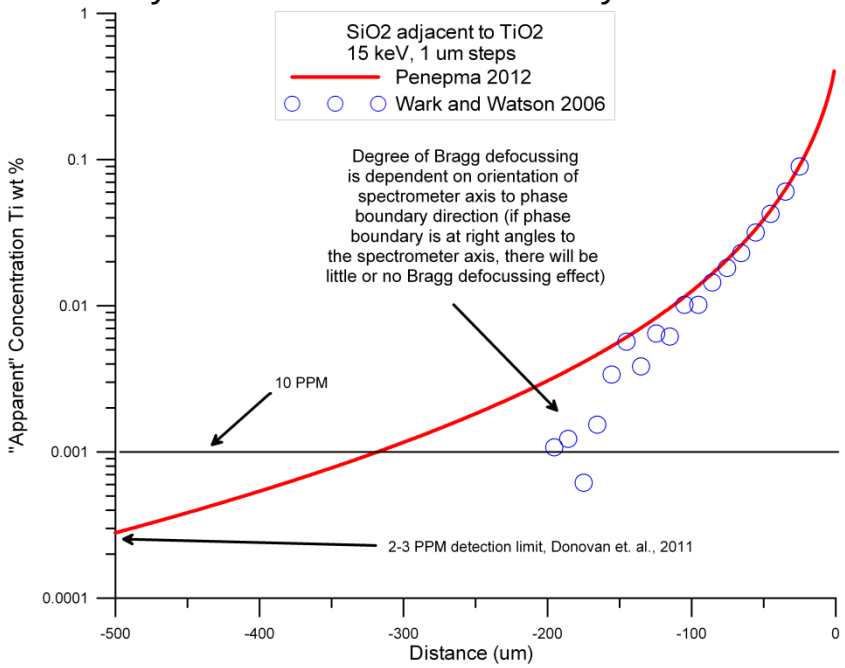
Software for MicroAnalysis

Probe Software, Inc.
885 Crest Drive
Eugene, OR 97405 USA
(541) 343-3400
sales@probesoftware.com
www.probesoftware.com

Probe for EPMA

Probe Image

Correction for Secondary Boundary Fluorescence from Nearby Phases



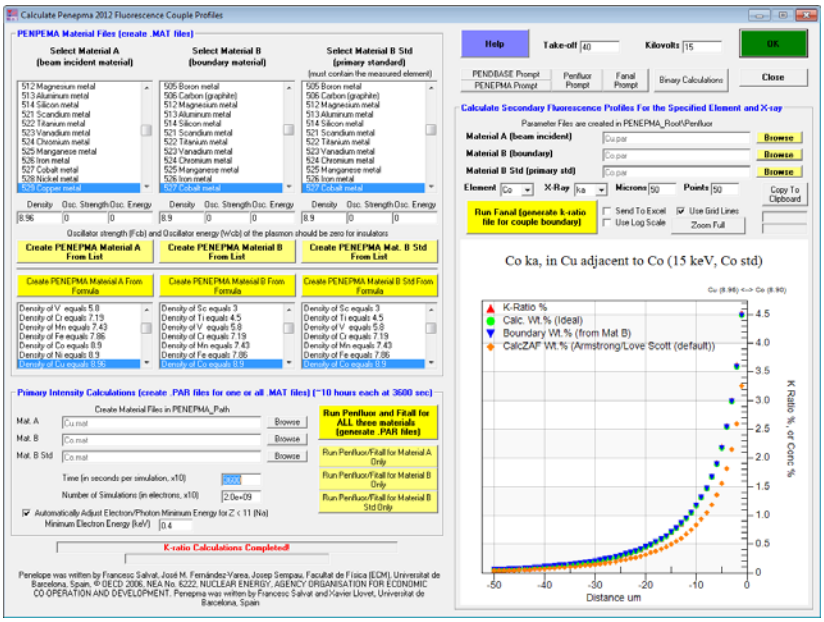
Probe Software announces a new feature for the correction of secondary fluorescence boundary effects from nearby phases containing the element of interest that is detected by WDS or EDS spectrometers.

This boundary fluorescence effect is generally of concern for trace element analysis, but at distances less than tens of microns from phase boundaries, it can be a percent level artifact for some element couples, such as Cu-Co, Ni-Fe, Cr-W, etc.

Correction of these boundary fluorescence effects is possible through recent efforts by Francesco Salvat and Xavier Llovet at the University of Barcelona, Spain.

Starting with the development of sophisticated monte-carlo models for electron-photon fluorescence effects, followed by new work implementing these insights into analytical expressions, means that these once time consuming and tedious operations can now be performed in a fraction of the time previously required for high precision quantitative calculations.

Probe Software has implemented these newly developed boundary fluorescence calculations in our CalcZAF acquisition and analysis software for the automatic correction of boundary effects in real-time based on the actual spatial distances and analyzed compositions.



Further corrections for Bragg defocussing effects which can vary from negligible to significant depending on the analyzing crystal resolution and orientation of the WDS spectrometer and direction of the fluorescing phase boundary are currently being implemented.

These secondary boundary fluorescence artifacts can also be modeled and corrected “off-line”, using our new Penepma 2012 GUI feature in CalcZAF which can be downloaded for free from our web site.

http://www.probesoftware.com/Technical.htm