SECONDARY EXCITATION OBSERVED IN LATERAL SCAN USING CONFOCAL MICRO-XRF

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It is well known that matrix effect has to be considered for quantitative XRF analysis. The primary x-rays and fluorescent x-rays are absorbed in the sample. In addition, secondary exitation will occur and influence quantitative XRF analysis. All of these effects depend on the chemical composition of the specimen. In this poster presentation, we will discuss secondary excitation in confocal micro-XRF arrangement, which enables 3D elemental mapping of solid samples. Secondary excitation in confocal depth analysis is previously reported for layered sample [1].

The border of Cu and Fe sheets was measured by confocal micro-XRF method. A lateral scan near the border was performed at different depths by confocal micro-XRF method. Characteristic secondary excitation was observed in the intensity profile at 40 µm in depth, while it was not observed by lateral scan near the surface. In addition, we simulated the XRF intensity as the confocal position changed to explain the lateral scan profiles. The simulated results roughly agreed with experimental profiles.

Reference