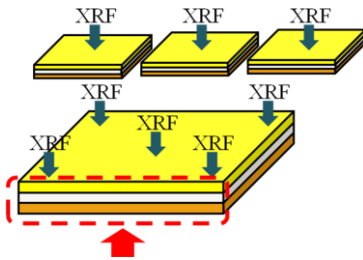


Plating Analysis - Collaboration of SEM and XRF - ElementEye JSX-1000S



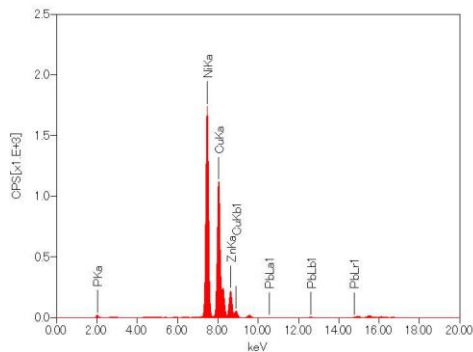
SEM Cross Section Observation

Both SEM and XRF analysis can provide complementary information on plated samples. SEM will provide direct observation of film layers and allow measurement of film thickness. However, the samples require cross sectioning and sample preparation can be time consuming. Though XRF can't provide direct observation of each layer, it can be used as a fast and nondestructive method for measuring film thickness. Large numbers of samples or areas can be screened quickly. Using SEM along with XRF will allow for fast, efficient quality control.

Analysis Example : Cross Check Analysis of Ni Plating

Electroless nickel plating is frequently used in electronic parts. A cross check was conducted by cross section observation with a scanning electron microscope (SEM) and film thickness analysis by an X-ray fluorescence spectrometer (XRF).

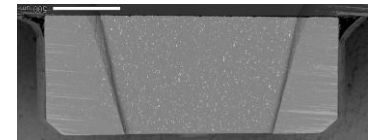
Film Thickness Measurement by XRF



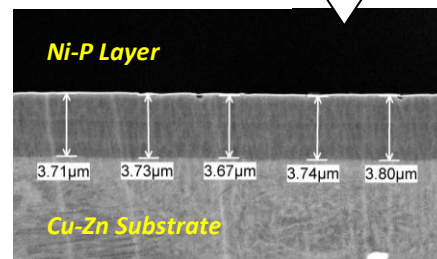
Analysis result: 3.74 μm
 Quantitative Result: P : 8.3 mass
 Ni: 91.7 mass

Fast analysis with no sample preparation required. Moreover, the composition of Ni • P layer can be determined at the same time.

Cross Section Observation by SEM



Cross Section Preparation by CP



Film Thickness Length Measurement
 Result: Average 3.73 μm

Measurement of Ni-P layer in cross section with SEM. Attachment of optional EDS enables elemental analysis of the plating layer.