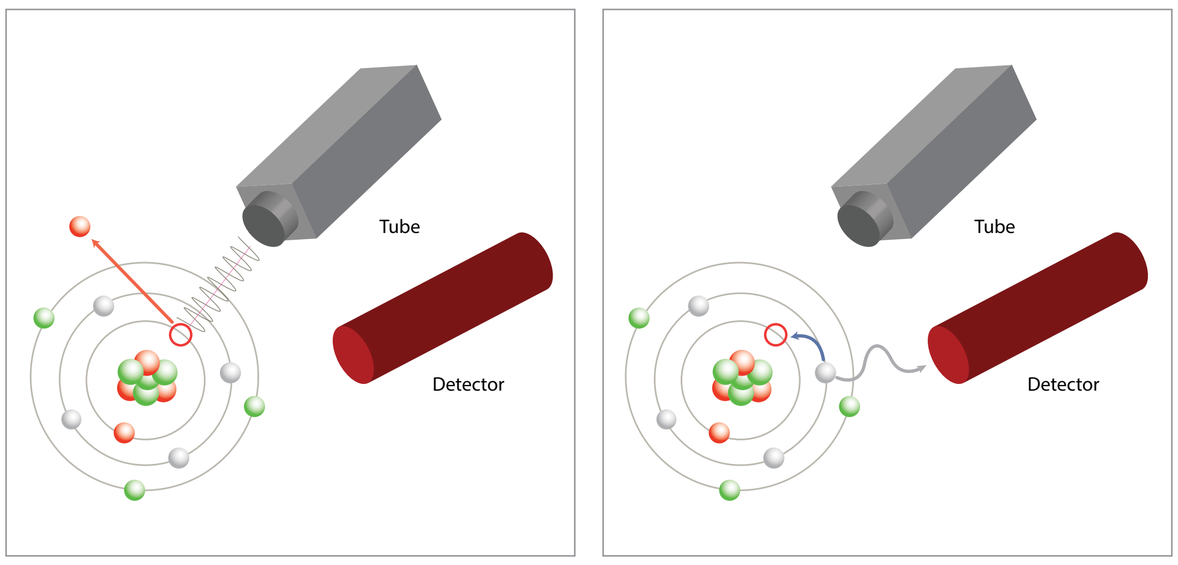
Understanding X-Ray Fluorescence (XRF)

How does X-ray fluorescence work?



Energy dispersive X-ray fluorescence (EDXRF), commonly referred to as XRF, is a fast, nondestructive method to measure the elemental composition of a material. But how does it work?

1

Emission

The analyzer emits X-rays.

2

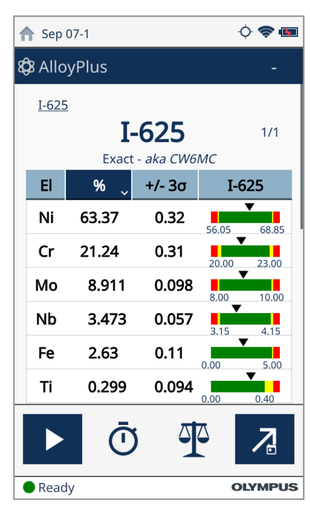
Excitation

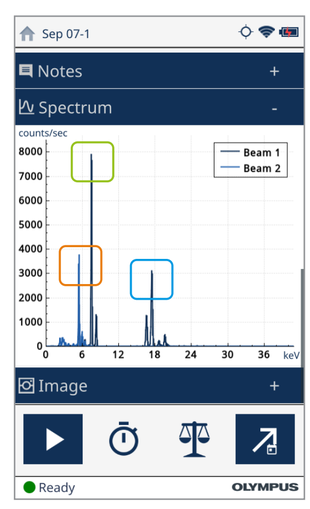
The X-rays hit the sample, causing it to fluoresce and send X-rays back to the analyzer.

3

Measurement

The detector measures the energy spectrum. This tells you which elements are present and the amount of each element present. It's important to note that Olympus XRF can't be used to measure every element in the periodic table. In general, our analyzers can measure from phosphorus to plutonium (P–Pu) on the periodic table of elements.

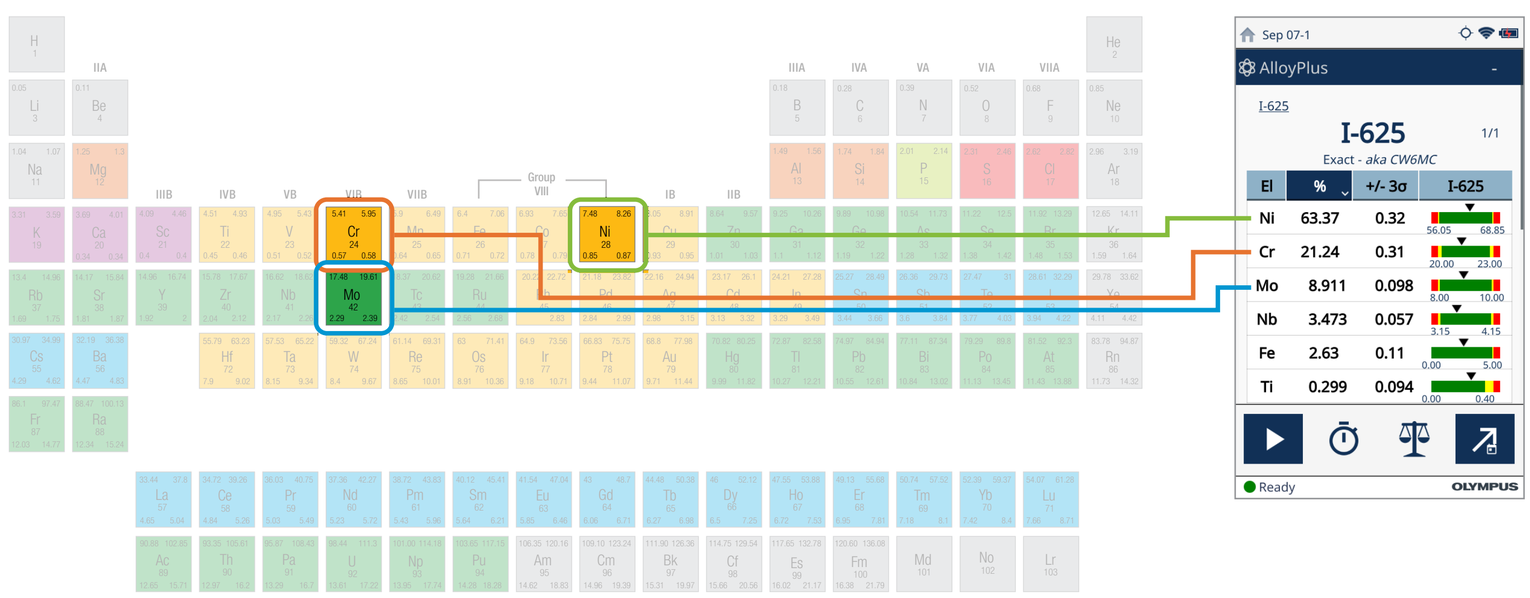




4

Results

Olympus Axon Technology™ processes the energy spectrum and displays the sample's elemental composition. For metals, we match the composition to a particular grade.



Common Applications

Scrap identification

Mining exploration

Positive material identification

Consumer safety testing

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