Advanced MicroBeam

Advantages

Due to the small size of the electron beam, Electron Microprobe Analysis is frequently used to examine the quality of hardness and corrosion coatings, weld diffusion zones, vapor deposition coatings, rare earth glasses, and other critical analyses. High resolution wavelength spectrometers provide better peak identification and reduce the need for overlap corrections (Figure 1 and 2). In addition, wavelength spectrometers can detect from 10 PPM to 300 PPM when analyzing trace elements which enables the analyst to accept a larger number of analytical projects that cannot be performed by Energy Dispersive spectroscopy.

High Takeoff angle: Samples can sometimes have pits and crevices that contain contaminants or other compounds that can be useful during failure analysis. The ability to detect deeper into pits and crevices is provided by the high take-off angle of our spectrometers.

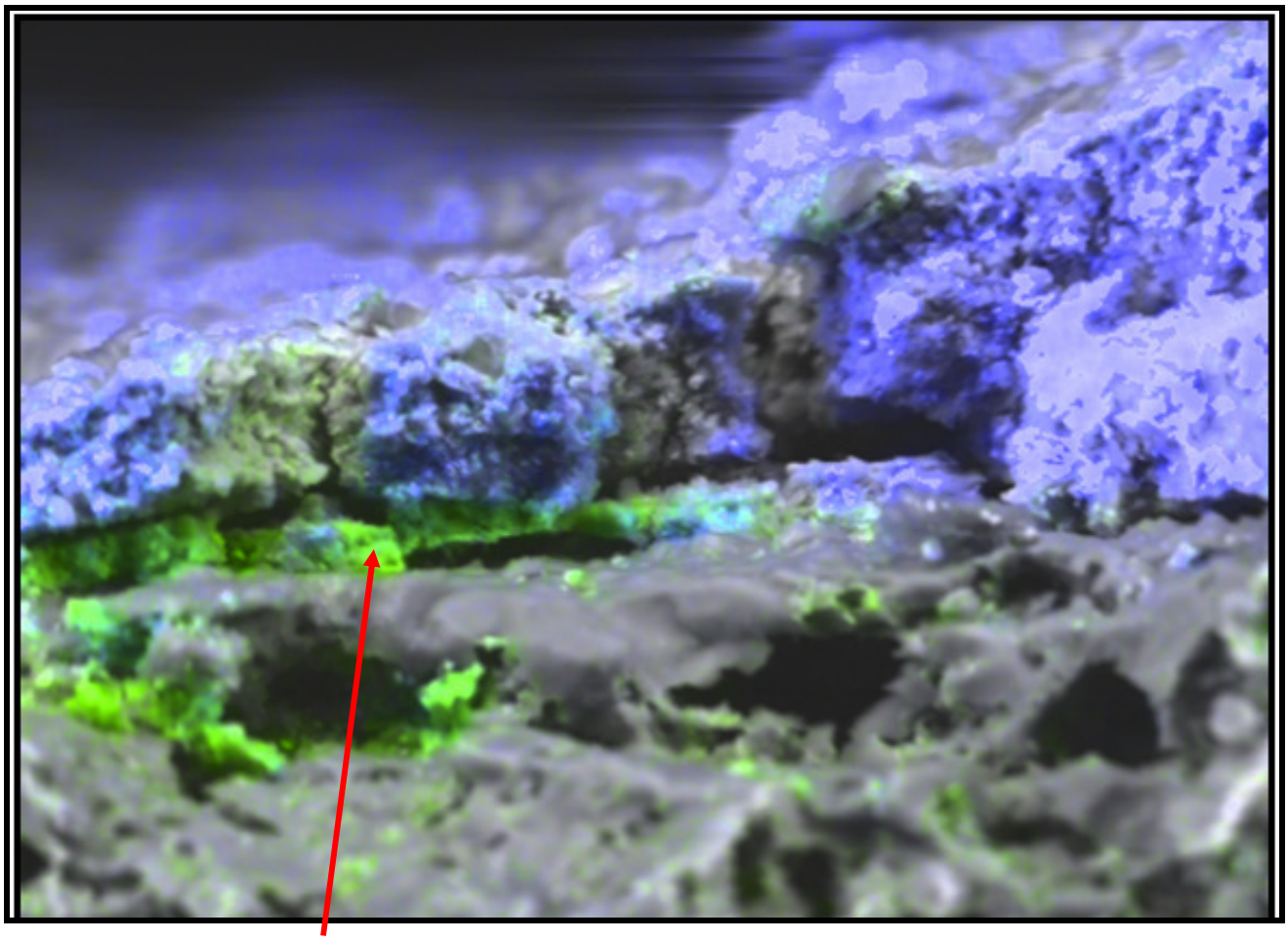

Figure 1: Detecting Cerium in the washcoat of a catalytic converter.

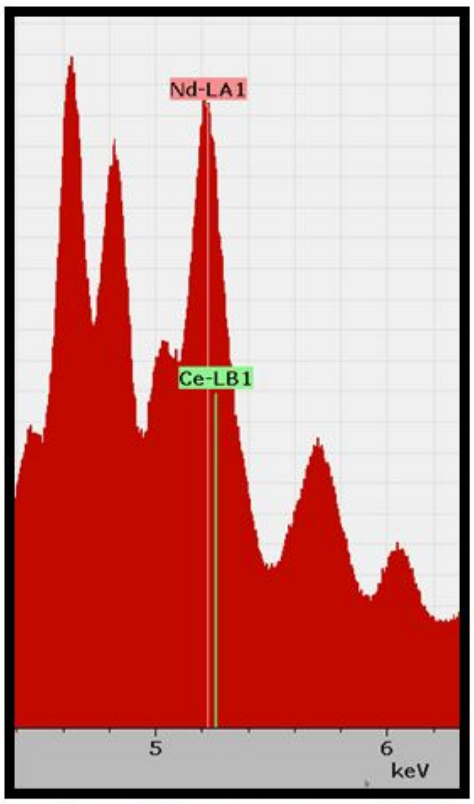

Figure 7: Ce-LB1 and Nd-LA1 Overlap on EDS Spectrometer

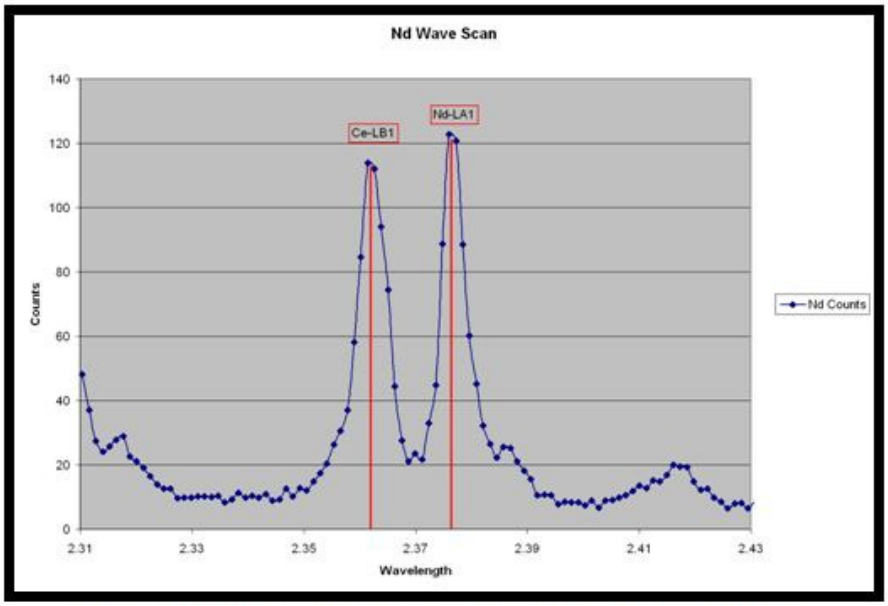

Figure 8: WDS Spectrometers Can Resolve Ce-LB1 and Nd-LA1

Figure 2: Comparing Elemental Resolution – EDS vs WDS