The benefits of small spot mapping analysis in production process troubleshooting using an XRF spectrometer containing WD and ED cores.
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Sample homogeneity is an aspect that significantly affects several physical properties – strength, robustness, and lifetime - of a particular product. Often, the in homogeneity can be traced back to an error in the development process of a product. By knowing the sample homogeneity, manufacturers can trace back and optimize their process in order to create better and high quality products.

In this study, small spot analysis (at 0.5mm FWHM) and elemental distribution mapping was conducted using a Zetium spectrometer incorporating SumXcore technology which allows bulk (with a WD and ED core run simultaneously) and small spot mapping analysis (using an ED core) in the same instrument. Elemental compositions and mapped illustrations (qualitative, quantitative and standardless) were investigated on a wide range of applications to help optimize production environments. An example that will be discussed includes looking at the homogeneity of a steel sample where understanding inclusions in a sample helps optimize the production process. The discussion will include some of the practical aspects of the measurement including the time needed to conduct such measurements.

In summary study small spot mapping analysis when combined with a bulk XRF spectrometer incorporating SumXcore technology will be shown to be a fast and excellent solution in obtaining information for production process troubleshooting.