

PORTABLE XRF WITH A VACUUM BEAM PATH ALLOWS DETECTION OF LIGHTER ELEMENTS

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A handheld XRF instrument with an evacuated beam path provides a tool for quantification of P, Si, Al, and Mg in the field. The challenges posed by measurements of alloy and soil samples require sophisticated measurement and analysis methods. These methods include x-ray source spectra tailored to the application and a Fundamental Parameters method to handle information acquired from multiple spectra. We discuss the engineering solutions for maintaining sufficient vacuum in a handheld instrument. We describe their implementation in a new vacuum material analysis mode that makes these measurements easily and reliably, and show the analytical performance of the instrument in several measurement situations.