

MINIATURE TUBE AND DETECTOR MODELING OF PORTABLE XRF INSTRUMENTATION

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The goals of XRF tube modeling include predicting the effect of particular target elements and filters on the continuum and characteristic lines of incident x-rays while utilizing specific detector types. Portable XRF is used as an effective tool in the elemental analysis of many materials for multiple markets. The proper selection of tube target types and filters for optimum elemental accuracy prior to the purchase of such portable products is essential. A model on predicting the results of targets and filters in miniature handheld XRF devices will be presented. Additionally, assumptions, methods and geometries of the model will be discussed.