

ANALYSIS OF ORES AND CONCENTRATES BY USING BENCHTOP WDXRF

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The demands of rare metals and base metals have risen by the recent rapid growth of developing countries and the requirement of rapid and precise analysis of ores and concentrates such as for copper and zinc and iron ore has increased. In the analysis of the ores and concentrates, wavelength dispersive spectrometers, which give high spectral resolution and high light element sensitivity, are commonly used to obtain high precision analysis of target element and the analysis of light elements.

High power spectrometers have generally been used in WDXRF for the purpose of these analyses. However, compact spectrometer is requested in the analysis at mining site and satellite laboratory for easier installation requirement.

We have developed a bench-top WDXRF spectrometer. The spectrometer is equipped with a new air cooled 200W x-ray tube and the analyzable element range is from F to U.

We have measured several ores and concentrates such as iron ore and zinc ore and could obtain accurate results for both heavy and light elements and the result demonstrated that this spectrometer can also be used as backup system in a main laboratory.

The spectrometer configuration and some examples of analyzed results will be presented.