Press Release

Rigaku Publishes New Method for Analysis of Metals in Nickel Ore

Austin, TX— January 16, 2014. Applied Rigaku Technologies, Inc. is pleased to publish a new application report that details the analysis of important metal oxides in nickel ore using the Rigaku NEX QC+ energy dispersive X-ray fluorescence (EDXRF) analyzer. The report includes complete information about sample preparation, method calibration and repeatability.

Determination of concentrations of various metals in nickel ores is an essential part of site characterization and preparation for smelting. While nickel (II) oxide **(**NiO**)** and ferric oxide **(**Fe_2O_3**)** are the most significant metal oxides, titanium dioxide / titanium(IV) oxide **(**TiO_2**)**, dichromium trioxide / chromium (III) oxide **(**Cr_2O_3**)** and manganese oxide **(**MnO**)** are also often present in significant quantities. Characterizing the ore is necessary for determining potential yield, and is an important step during extraction and smelting. EDXRF is an effective tool for mine site exploration and characterization, and can be used throughout processing, extraction and smelting to measure the ore material, concentrate, matte, filter cakes and slags.

Rigaku NEX QC+ energy dispersive X-ray fluorescence analyzer

As detailed in the published report, 20 site-specific standards were supplied as pressed pellets for empirical calibration. Analytical precision was demonstrated by 10 consecutive measurements of calibration standards with low, medium and high NiO concentrations. Ten repeat analyses of a blank sample were taken in static position to determine the standard deviation.

The results of this study establish that, given stable samples, proper sample handling and proper calibration technique, the Rigaku NEX QC+ EDXRF analyzer can achieve excellent results for the measurement of the key metal oxides NiO, Fe_2O_3, TiO_2, Cr_2O_3 and MnO in nickel ores, and is shown to be a simple yet powerful and versatile system for quantifying elemental composition.

A copy of this application report may be requested at
http://www.rigakuedxrf.com/edxrf/app-notes.html?id=1366_AppNote

About Rigaku

Since its inception in Japan in 1951, Rigaku has been at the forefront of analytical and industrial instrumentation technology. Rigaku and its subsidiaries form a global group focused on life sciences and general purpose analytical instrumentation. With hundreds of major innovations to its credit, Rigaku and its subsidiary companies are world leaders in the fields of small molecule and protein crystallography, X-ray spectrometry and diffraction, X-ray optics, as well as semiconductor metrology. Rigaku employs over 1,100 people globally and its products are in use in more than 70 countries – supporting research, development, production control and quality assurance activities. Throughout the world, Rigaku continuously promotes partnerships, dialog, and innovation within the global scientific and industrial community.

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