

Press Release

Rigaku publishes new application report on analysis of sulfur and ultra-low chlorine in crude oil

Austin, TX— December 17, 2014. [Applied Rigaku Technologies, Inc.](http://www.rigakuedxrf.com) is pleased to announce the publication of a new application report that details the simultaneous analysis of sulfur (S) and chlorine (Cl) in oil by energy dispersive X-ray fluorescence (EDXRF). The report includes complete information about sample preparation, method calibration and repeatability, and demonstrates the multi-element capabilities of the [Rigaku NEX CG](http://www.rigakuedxrf.com) Cartesian-geometry EDXRF spectrometer.

EDXRF is a commonly used technique for sulfur measurement within the petroleum industry. It is also used for measuring other elements present in oils and fuels. Chlorine, for example, is often present in crude oils and, left unmeasured, can bias sulfur measurement during the blending of crude oil, or cause corrosion during the refining process. The analysis method described in the new report provides a fast, simple technique for screening and monitoring the chlorine content of crude at the well site and at other pre-refining stages, e.g. along pipelines, during blending. For the analysis described in the report, eight certified oil standards were used to develop empirical calibrations for sulfur and chlorine. The empirical method was used to determine the detection limits for both elements.



The Rigaku NEX CG Cartesian-geometry EDXRF spectrometer

Measurements shown in the report were carried out on the Rigaku NEX CG spectrometer, which was engineered with a unique close-coupled Cartesian Geometry (CG) optical kernel that significantly improves signal-to-noise levels. The results demonstrate that the Rigaku NEX CG analyzer, using indirect excitation and polarizations, delivers a simple means of measuring sulfur and chlorine concurrently while offering the lowest chlorine detection limits by EDXRF. They also demonstrate that compact benchtop instrumentation employing semiconductor detectors can easily resolve and measure sulfur, chlorine and other elements present in oil.

A copy of this application report may be requested at http://www.rigakuedxrf.com/edxrf/app-notes.html?id=1432_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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