

## Press Release

### Process Elemental Analysis By EDXRF Of Chemical Bath For Copper Foil Surface Treatment

**Austin, TX – April 30, 2013.** Applied Rigaku Technologies, Inc. today announced a new method – for the measurement of aqueous chemical bath solutions containing nickel, cobalt, molybdenum, zinc and indium – demonstrating the use of a process energy dispersive X-ray fluorescence (EDXRF) analyzer. Application Note #1306 describes the analysis of concentrations of chemical solutions used in the manufacturing of copper foil and highlights the performance of the [Rigaku NEX OL on-line EDXRF process analyzer](#). The report includes complete information about sample presentation, method calibration and repeatability.

Copper is used in the electronics industry because it is both conductive and reliable. Copper foil has several uses in including the shielding of electronic components. Surface treating is an essential part of copper foil manufacturing for the electronics industry. Surface treatments are used for cleaning the copper foil and for creating resistance to heat and wear. Single or multiple layers of thin film coatings can be used to prevent oxidation or enhance the electro-chemical properties of the copper foil.

To ensure the highest quality surface treatments, the chemical bath solutions must be constantly monitored. For the analysis detailed in the new report, measurements were performed with the NEX OL analyzer, a next-generation process elemental analyzer for liquid stream and fixed position web or coil applications. Designed for a wide range of applications, from heavy industrial to food grade process gauging solutions, the NEX OL is configurable for use in both classified and non-classified areas.

For the described method, aqueous calibration solutions were prepared by mixing powdered reagents with appropriate quantities of water. Empirical calibrations were developed using aqueous samples. The empirical method was also used, taking 10 repeat analyses of deionized water, to determine detection limits in a clean matrix containing no measureable elements.

The Rigaku NEX OL system uses a high resolution semiconductor detector that achieves excellent resolution and sensitivity, enabling adjacent or near-adjacent elements to be measured with little or no peak overlap. The results show that the Rigaku NEX OL EDXRF process analyzer can achieve excellent results in monitoring the concentration of chemical solutions used in the manufacturing of copper foil, given stable samples, proper sample handling and proper calibration technique.

A copy of this application report may be requested on Rigaku's official website.  
[http://www.rigakuedxrf.com/edxrf/app-notes.html?id=1306\\_AppNote](http://www.rigakuedxrf.com/edxrf/app-notes.html?id=1306_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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