

Press Release

Rigaku Publishes Method for Analysis of Titanium Coating on Aluminum

Austin, TX— September 22, 2016. [Applied Rigaku Technologies, Inc.](http://www.rigakuedxrf.com) has published a new application report detailing the measurement of titanium (Ti) conversion coating on aluminum (Al).

Rigaku Application Note #1619 describes a method using energy dispersive X-ray fluorescence (EDXRF) for the measurement of titanium conversion coating, and demonstrates the effectiveness of the [Rigaku NEX QC+](http://www.rigakuedxrf.com) high-resolution benchtop EDXRF analyzer in the quality control (QC) process during the production of coated product. Information regarding sample preparation, calibration and repeatability is presented in the application note.

Aluminum is often coated with a protective coating to prevent oxidation and corrosion. Such conversion coatings include chromium (Cr), titanium, vanadium (V), manganese (Mn), nickel (Ni), and zirconium (Zr). These coatings are often used on aircraft parts, aluminum window frames and in other industries where the aluminum is exposed to weathering. Conversion coatings also help in the retention of paint on finished products.

The method described in the application note presents EDXRF spectrometry as an affordable means of optimizing quality while minimizing costs and reducing waste. For the analysis detailed in the report, a test coupon is placed flat in the sample chamber with the coated side facing the X-ray beam. An empirical calibration was built using a set of standards assayed by a careful weigh-strip-weigh process. The bare, uncoated aluminum sample was measured to generate a special background correction that automatically compensates for the specific amount of background signal in each sample measured.

Measurements were performed using the Rigaku NEX QC+ EDXRF analyzer. The results shown in the report demonstrate that the instrument provides excellent sensitivity and performance for the measurement of titanium conversion coatings on aluminum.

A copy of this report may be requested at:

http://www.rigakuedxrf.com/edxrf/app-notes.html?id=1619_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 1,400 people globally and its products are in use in more than 90 countries – supporting research, development, and 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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*The Rigaku NEX QC+
high-resolution benchtop
EDXRF analyzer*