

Press Release

Rigaku Publishes New Article on Elemental Analysis of Pharmaceuticals by WDXRF

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The March edition of Tablets and Capsules magazine features an article from Rigaku on elemental analysis of finished pharmaceuticals by wavelength dispersive X-ray fluorescence

March 28, 2017 – The Woodlands, Texas. [Rigaku Corporation](#) has published a new article examining how wavelength dispersive X-ray fluorescence ([WDXRF](#)) can be used to detect and quantify elemental impurities in pharmaceuticals, in compliance with new guidelines from the International Conference on Harmonization ([ICH](#)). The guidelines enumerated in the document, ICH Q3D, “Elemental Impurities,” call for the pharmaceutical industry to test its products for elemental impurities, outline the impurity limits, and suggest analytical procedures.

The article, entitled “Elemental Analysis by WDXRF: A Simplified Approach,” appears in the March 2017 edition of [Tablets and Capsules](#) and was authored by Glenn Williams, PhD, Thanh Nguyen, PhD and Nicole McNulty of Rigaku. It describes how WDXRF can be used to detect and quantify elemental impurities in compliance with ICH Q3D. It also discusses how WDXRF—a direct technique that eliminates sample digestion—can analyze final products as unadulterated tablets in a nondestructive way. In basic terms, WDXRF entails excitation of atoms in a solid or liquid sample to produce characteristic X-rays that are separated by wavelength dispersion and detected.

An overview of X-ray fluorescence technology, standard and sample preparation procedures, analysis methodology, and detailed results are presented. All quantitative analyses were performed using a [Rigaku ZSX Primus IV](#) sequential WDXRF spectrometer. The unit operates at a maximum power of 4 kilowatts and features an optics-above configuration.

Laboratories that use inductively coupled plasma (ICP) techniques typically focus their control strategy on raw materials and processes, and avoid routine testing of final dosage forms. The results reported in the new article demonstrate the huge potential that the WDXRF technique has for analyzing finished pharmaceutical dosage forms. Implementing WDXRF—an easy-to-operate, nondestructive, and direct analysis technique—enables lab personnel to conduct testing that ensures finished products meet needed safety requirements.



*Rigaku ZSX Primus IV sequential
WDXRF spectrometer with advanced
Guidance system*

The article, in the March edition of *Tablets and Capsules*, is available in print or online at <http://www.e-digitalitions.com/i/793410-tc0317/27>



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 general-purpose analytical instrumentation and the life sciences. With hundreds of major innovations to their credit, Rigaku companies are world leaders in X-ray spectrometry, diffraction, and optics, as well as small molecule and protein crystallography and semiconductor metrology. Today, Rigaku employs over 1,400 people in the manufacturing and support of its analytical equipment, which is used in more than 90 countries around the world supporting research, development, and quality assurance activities. Throughout the world, Rigaku continuously promotes partnerships, dialog, and innovation within the global scientific and industrial communities.

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