Press Release

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New Pharmaceutical Analysis Article from Rigaku Demonstrates Bulk Sample Measurement by XRD

Powder X-ray diffractometers can readily measure bulk samples if techniques are devised for sample preparation and measurement conditions are properly set.

June 6, 2017 – The Woodlands, Texas. Rigaku Corporation has published an application report on its global website demonstrating the utility of X-ray diffraction (XRD) in the analysis of bulk samples with curved surfaces. The analysis described highlights the capabilities of the Rigaku MiniFlex general purpose X-ray diffractometer.

Powder X-ray diffractometers can readily measure bulk samples, given appropriate sample preparation techniques and measurement conditions. When measuring samples such as pharmaceutical tablets, which have curved surfaces, various effects are seen due to the curvature. These can include shifting of the diffraction angle and widening of the full width at half maximum. As demonstrated in the report, in cases of samples with these kinds of surfaces, adjustments can be made so that the sample surface is at the same height as the reference surface of the sample plate, reducing the effects of curvature. The effects can be further reduced by performing the measurement while narrowing the divergence slit and the incident height-limiting slit.

Rigaku MiniFlex benchtop X-ray diffraction (XRD) instrument

The example presented in the report shows that it is possible to identify the active ingredients in tablets such as ibuprofen and ethenzamide.

The bulk sample article, along with other pharmaceutical-related XRD analyses, can be seen at https://www.rigaku.com/en/products/xrd/miniflex/apps/11

The newly introduced sixth generation MiniFlex X-ray diffractometer is a multipurpose analytical instrument that can determine phase identification and quantification, percent (%) crystallinity, crystallite size and strain, lattice parameter refinement, Rietveld refinement, and molecular structure.

More information about the new Rigaku MiniFlex benchtop X-ray diffraction (XRD) instrument is available at https://www.rigaku.com/products/xrd/miniflex.

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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