

Rigaku announces 6th Generation MiniFlex benchtop XRD system



Leading With Innovation

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The 6th generation Rigaku MiniFlex X-ray diffraction system is designed for enhanced performance and flexibility

June 1, 2017 – Tokyo, Japan. X-ray scientific, analytical and industrial instrumentation manufacturer [Rigaku Corporation](#) has announced the new 6th generation [Rigaku MiniFlex](#) benchtop X-ray diffraction (XRD) instrument. The new 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. It is widely used in research field especially in material science and chemistry, as well as in industry for research and quality control. It is the newest addition to MiniFlex series of benchtop X-ray diffraction analyzers from Rigaku, which began with the introduction of the original MiniFlex system decades ago.

The Rigaku MiniFlex diffractometer is historically significant in that it was the first commercial benchtop (tabletop) X-ray diffraction instrument. When introduced in 1973, the original Miniflex™ instrument was about one-tenth the size, and dramatically less expensive, than conventional X-ray diffraction equipment of the period. The original instrument (Gen 1), and its successor that was introduced in 1976 (Gen 2), employed a horizontal goniometer with data output provided by an internal strip chart recorder. The third generation (Gen 3) instrument, introduced in 1995, was called Miniflex+. It provided a dramatic advance in X-ray power to 450 watts (by operating at 30kV and 15mA) and Windows® PC computer control. Both the Miniflex+ and the succeeding generation products employ a vertical goniometer and allow the use of an automatic sample changer. The fourth generation (Gen 4) Miniflex II instrument was introduced in 2006 and offered the advance of a monochromatic X-ray source and a D/teX Ultra 1D silicon strip detector. The fifth generation (Gen 5) MiniFlex600 system, introduced in 2012, built upon this legacy with 600W of available power and new PDXL powder diffraction software.

The new MiniFlex system delivers speed and sensitivity through innovative technology advances, including the HyPix-400 MF 2D hybrid pixel array detector (HPAD) together with an available 600W X-ray source and new 8-position automatic sample changer. This new direct photon counting detector enables high speed, low noise data collection and may be operated in 0D and 1D modes for conventional XRD analysis and 2D mode for samples with coarse grain size and/or preferred orientation. A variety of X-ray tube anodes – along with a range of sample rotation and positioning accessories, together with a variety of temperature attachments – are offered to ensure that the MiniFlex system is versatile enough to perform challenging qualitative and quantitative analyses of a broad range of samples, whether performing research or routine quality control. The new (Gen 6) MiniFlex system embodies the Rigaku philosophy of “Leading with Innovation” by offering the world’s most advanced benchtop XRD.

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 70 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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