

Rigaku Features X-Ray Analytical Instrumentation at 2019 Ceramics Expo



Leading With Innovation

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Rigaku is presenting its latest analytical X-ray solutions for the ceramics industry at the 2019 Ceramics Expo in Cleveland

April 30, 2019 – Cleveland, OH. [Rigaku Corporation](#) is pleased to announce its attendance at [Ceramics Expo 2019](#), taking place Tuesday, April 30 to Wednesday, May 1, 2019 at the [I-X Center](#) in Cleveland, Ohio. Rigaku is presenting its current line of analytical X-ray instrumentation at booth # 838.

The leading annual event for the advanced ceramics and glass supply chain, Ceramics Expo brings together engineers, decision makers and buyers from the entire advanced ceramics and glass supply chain and end user OEMs to source new materials, components and technologies, network with like-minded professionals, and discuss the challenges and opportunities in the ceramics industry.

Now in its fifth year, Ceramics Expo will host more than 300 leading global manufacturers and suppliers from across the supply chain. Running concurrent to the exhibition is the Ceramics Expo Conference, where industry leaders will share their technical expertise in ceramics and provide real-world case studies, new technologies and materials, along with information on industry trends.

X-ray analytical equipment is routinely used in the production and testing of ceramic materials and components. X-ray spectroscopy is used in the ceramic industry to non-destructively analyze raw materials and finishes. Applications for X-ray analytical techniques exist across a range of ceramic disciplines, from basic research and process development to QC/QA analyses for materials production.

Rigaku offers a full portfolio of advanced analytical X-ray systems for analysis of ceramics. Materials analysis technologies from Rigaku include X-ray diffraction ([XRD](#)), X-ray fluorescence ([XRF](#)), X-ray microscopy ([XRM](#)) and small angle X-ray scattering ([SAXS](#)).

Among the analytical instrumentation to be represented at the event is the [Rigaku SmartLab](#) X-ray diffraction system. An X-ray diffractometer is an instrument that measures the intensity of scattered X-rays as a function of position relative to the sample. In the ceramic industry, X-ray scattering is used routinely to determine the structure of materials and examine the phase composition of bulk materials and the residual stress and texture of composites.



Rigaku SmartLab intelligent multipurpose X-ray diffractometer

XRD can be employed to identify different types of clays and determine their elemental composition. Designed for the structural analysis of advanced materials and thin films, the SmartLab system combines flexible instrument geometry with a comprehensive knowledge-based software platform. The unit uses Cross Beam Optics (CBO) as the foundation of a fully automated flexible optical system, enabling operation in both parallel beam and focusing geometries without reconfiguring the diffractometer system. It offers a complete range of X-ray diffraction measurements in one fully automated tool suitable for use by non-specialists. With its simplified automated operation, the system can address a full range of samples, including bulk solids, liquids, powders and thin films.



Rigaku ZSX Primus IV high power, tube above, sequential WDXRF spectrometer

X-ray fluorescence spectrometry is one of the common instrumental analysis techniques for routine quality control. This is due to high precision and easy sample preparation compared to other instrumental analytical methods. For elemental composition analysis, the new [Rigaku ZSX Primus IV](#) WDXRF spectrometer is a high-performance tube-above sequential wavelength dispersive X-ray fluorescence spectrometer that delivers rapid quantitative determination of major and minor atomic elements in a wide variety of sample types—with minimal standards.

The system incorporates “ZSX Guidance” software that can be used with ease even by a beginner in XRF. The newly developed hardware also provides advanced performance in sensitivity, precision, and throughput, making the ZSX Primus IV spectrometer the optimal system not only for process control but also for R&D. The system features an innovative optics-above configuration to avoid concerns over a contaminated beam path or downtime due to sample chamber maintenance, eliminating cleaning worries and increasing uptime.

X-ray computed tomography (CT) enables the study of the three dimensional structure of an object. For 3D and 4D imaging of micro-scale morphologies, Rigaku offers the [Rigaku CT Lab HX](#) high-performance benchtop X-ray micro CT system. The CT Lab HX system features the most powerful X-ray source in its class (130 kV, 39W). This compact yet powerful micro CT system can provide three dimensional X-ray images of a wide variety of samples including ceramics.

The CT Lab HX system features a combination of a high power X-ray source and the largest field of view (FOV) in its class. Built for easy operation, the compact yet powerful micro CT system offers a large FOV of up to 200 mm ϕ , and can provide three dimensional X-ray images of a wide variety of samples. Preset scans, programed for typical conditions, require only a few steps to run. The high-power 130 kV, 39 W X-ray source facilitates high-speed image acquisition in as fast as 18 seconds/scan.



The Rigaku CT Lab HX benchtop X-ray micro CT system

More information about materials analysis technologies from Rigaku is available at <https://www.rigaku.com/en/industry/materialsscience>

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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