

New Rigaku NANOPIX mini benchtop small angle X-ray scattering (SAXS) system

New instrument enables non-destructive evaluation of the distribution of nanoparticles or nanopores by size

August 1, 2017 – Tokyo, Japan. X-ray scientific, analytical and industrial instrumentation manufacturer [Rigaku Corporation](#), has announced the [NANOPIX mini](#), the world's first benchtop small angle X-ray scattering (SAXS) system that delivers automatic nanoparticle size distribution analysis for both quality control (QC) and research and development (R&D) applications. Nanoparticle size, size distribution, and particle shape are the key pieces of information obtained from SAXS. Samples may range from solutions, suspensions or slurries to solid plastics, rubbers or polymers.

Nanomaterials are part of a variety of emerging nanoscale technologies that can be used in a broad array of applications and products. Nanomaterials – materials where 50% or more by number of the constituent particles have one or more external dimensions in the size range 1–100 nm (2011/696/EU) – can exhibit vastly different chemical or physical properties, or biological effects compared to their larger-scale counterparts. These effects may derive from altered chemical, biological, or magnetic properties, altered electrical or optical activity, increased structural integrity, or other unique characteristics of materials in the nanoscale range (including acute toxicity) not normally observed or expected in larger-scale materials with the same chemical composition.

Nanomaterials offer technical and commercial opportunities, but may pose risks to the environment and raise health and safety concerns for humans and animals. As such, countries around the world have enacted increasingly stringent laws concerning the manufacture and distribution of nanomaterials. The Rigaku NANOPIX mini SAXS instrument offers unique analytical capabilities, relative to other particle measurement techniques – including the ability to measure opaque and solid samples – that offer superior data quality for regulation-driven nanoparticle characterization in consumer and industrial products.

NANOPIX mini offers unique capabilities

Rigaku NANOPIX mini is the first benchtop small angle X-ray scattering system dedicated to the characterization of nanoparticles in both research and production environments. With a revolutionarily small footprint and performance



Rigaku NANOPIX mini
benchtop SAXS system

superior to traditional “big iron” systems, this compact instrument offers enhanced angular resolution through its line-focus X-ray source and superior combination of high figure-of-merit optics.

- SAXS measurement in the ultra-small angle X-ray scattering (USAXS) range
- Engineered for both quality control and research & development applications
- Non-technical operation for routine particle size distribution determinations
- Delivers nanoparticle characterization needed for regulatory compliance
- Perfect for opaque suspensions not easily addressable with other techniques
- Suitable for use with solids – like plastics, rubbers and polymers
- Compact benchtop design with a small countertop footprint
- Innovative design using proven components for low cost of ownership
- Automatic sample changer for higher throughput
- New easy-to-use SmartLab Studio II SAXS software
- Touchscreen graphical user interface operation
- Compact Bonse-Hart USAXS camera design

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.

For further information, contact:

Robert C. Tisdale, Ph.D.
SVP, Global Marketing Group
Rigaku Corporation
Phone: +1 512-225-1796 x1017
Robert.Tisdale@Rigaku.com

Yurika Takumi
Office of the President
Rigaku Corporation
Phone: +81 42-545-8190

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