

Covalent Metrology and Rigaku Extend Partnership with Installation of Advanced X-Ray Characterization Tools at New Facility

Collaboration between Rigaku and Covalent expands metrology capabilities for semiconductor and electronics markets with installation of new WDXRF and micro-CT systems

November 05, 2019 – Sunnyvale, CA. [Rigaku Corporation](#), the world's leading supplier of X-ray metrology technology, is pleased to announce the installation of two of its newest analytical instruments in the recently-expanded Sunnyvale, CA service lab of [Covalent Metrology](#), a leading provider of analytical services to advanced materials innovation companies.

The delivery of the new systems furthers the pioneering collaboration agreement designed to support American high-tech industries with advanced metrology capabilities. The agreement provides Covalent with exceptional analytical service capabilities and provides Rigaku a North American demonstration facility located in Silicon Valley. The new systems will be available for demonstrations and for Covalent's analytical service customers.

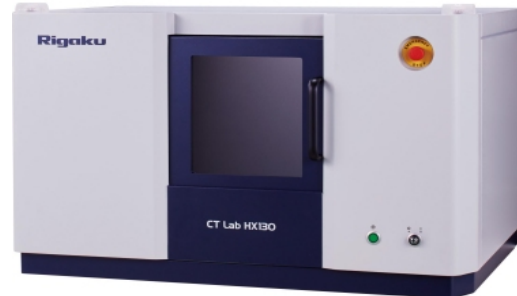


The Rigaku AZX400 Sequential WDXRF spectrometer

Among the newly installed instrumentation is the [Rigaku AZX400](#) sequential wavelength dispersive X-ray fluorescence (WDXRF) spectrometer. The system, specifically designed to accommodate large or heavy samples, will be used for precise film and materials compositional analysis and uniformity assessment. The AZX400 system accepts samples up to 400mm in diameter and features an automatic loader to accommodate 200mm cassettes and 300mm front-opening unified pods (FOUPs).

As an optimal R&D system, the AZX 400 spectrometer is a foundational instrument for companies developing next-generation semiconductors, sensors, batteries, solar cells and advanced materials. It is designed to maximize analytical flexibility, covering a broad range of elements, with spot sizes down to 0.5mm diameter for spatially resolved measurements.

Also now installed at Covalent is the [Rigaku CT Lab HX](#) high-performance benchtop X-ray Micro-CT system, for 3D and 4D imaging of micro-scale morphologies. Computed tomography (CT) reveals, at high-speed, the high-resolution, three-dimensional structure of an object by means of computer-processed combinations of numerous X-ray images taken from different angles.



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

The CT Lab HX system is a compact yet powerful micro-CT system that can provide three-dimensional X-ray images of a wide variety of samples. It features the largest field of view (FOV) and the most powerful X-ray source in its class (130 kV, 39W), enabling high-speed image acquisition as fast as 18 seconds/scan. The system will be broadly employed for the development and non-destructive failure analysis of advanced materials, packaged and fabricated devices and complex components.

Craig Hunter, CEO of Covalent stated, "We are delighted to add two outstanding analytical instruments from Rigaku to our in-house service offering. The AZX-400 WDXRF system offers superb resolution and the auto-loader feature provides a cost-effective capability to process fab wafers for tool qualifications and yield optimization. The GT Lab HX is a relatively new entrant to the growing micro-CT market and we believe it offers highly competitive speed and resolution for a wide variety of sample types. We are excited to continue building the Rigaku partnership and to help them extend their already powerful market position."

The Rigaku Semiconductor Metrology Division designs and manufactures X-ray characterization tools to solve semiconductor manufacturing challenges. More information about semiconductor tools from Rigaku is available at rigaku.com/products/semi.

Covalent Metrology provides imaging and characterization services to support R&D, defect analysis, and quality control for companies in semiconductors, solar, medical devices, MEMS and other industries. More information on characterization services offered by Covalent Metrology is available at covalentmetrology.com.

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.

For further information, contact:

Michael Nelson
Rigaku Global Marketing Group
tel: +1 512-225-1796
michael.nelson@rigaku.com

About Covalent Metrology

Covalent Metrology was founded in 2016 and is based in Sunnyvale, California. Its mission is to help companies who use advanced materials to get better data and insight about key research, development and production programs faster, more easily and less expensively. Covalent is dramatically changing the characterization and imaging landscape by combining innovative business models, a solutions-oriented metrology and characterization platform and top-notch customer service with world-class scientists, state-of-art tools, and strategic partnerships. Covalent has already worked with more than 250 customers from 20+ industries and is growing at more than 30% each quarter.

Warren Wong
Covalent Metrology Operations
tel: +1 408-498-4611
warren@covalentmetrology.com

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