



Product Catalog

July 2017



Rigaku

Leading With Innovation



Discover the Invisible World

Rigaku's cutting-edge X-ray analysis products are synonymous with the company name.

We also offer thermal analysis instruments and Raman spectrometers.

From large systems to benchtop units and handheld devices, from R&D to on-site inspection, the world invisible to the eye comes clearly into view through Rigaku equipment.

Please explore this visualization of Rigaku's technical capabilities.

X-ray

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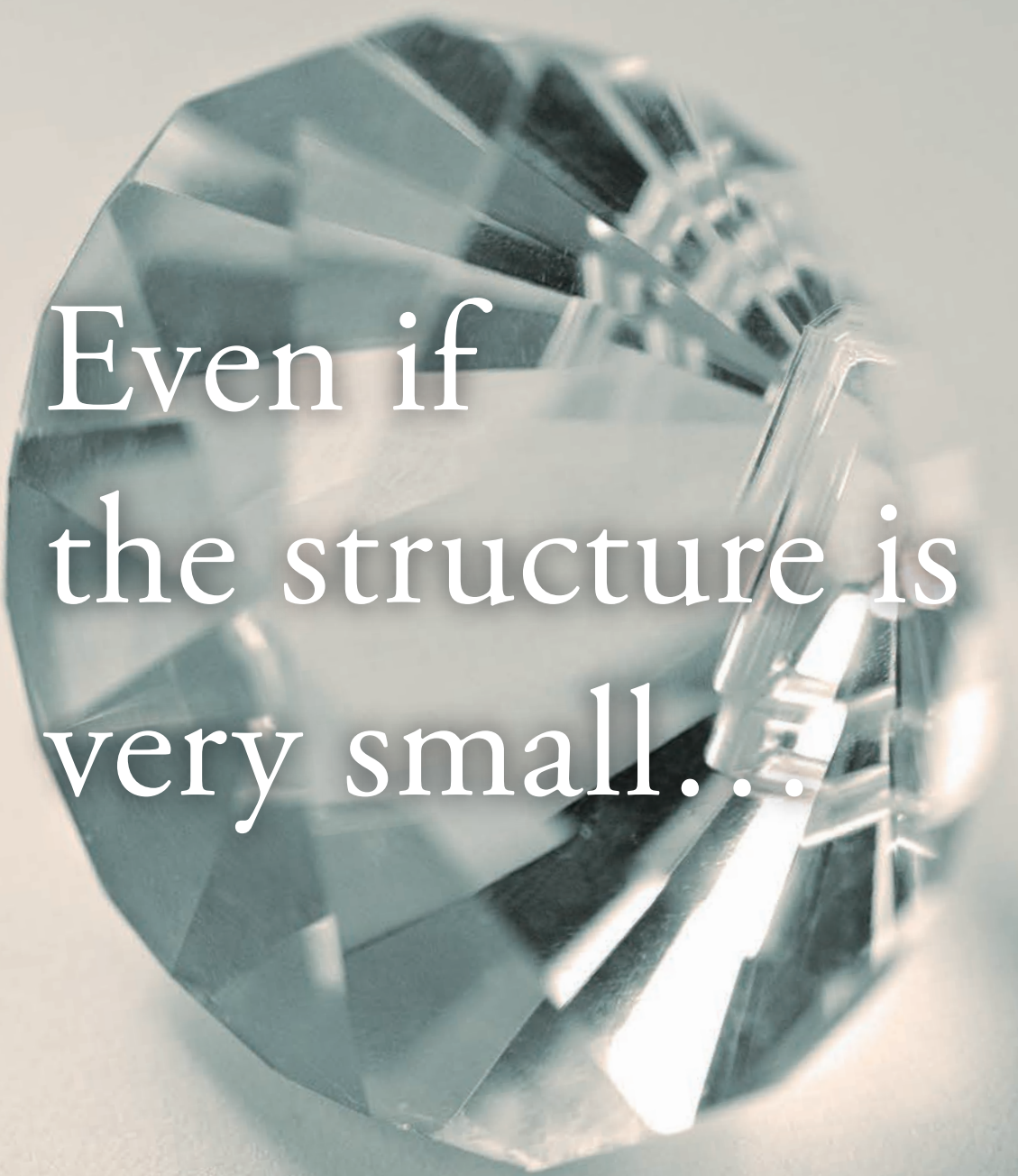
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Even if
the structure is
very small....

X-ray diffractometers for powder/thin film samples

Rigaku's powder/thin film X-ray diffractometers come in both general purpose types with an extensive range of variations to suit different purposes, and easy-to-move benchtop types. These products meet diverse measurement needs with the in-plane optical systems that have broadened the world of thin film measurement, various optical systems, attachments, and convenient software.



SmartLab

Advanced state-of-the-art high-resolution XRD system powered by Guidance expert system software.



SmartLab SE

Highly versatile multipurpose XRD system with built-in intelligent guidance.



Ultima IV

High-performance, multi-purpose XRD system for applications ranging from R&D to quality control.



D/MAX RAPID II

Curved imaging plate (IP) XRD system features an extremely large aperture.



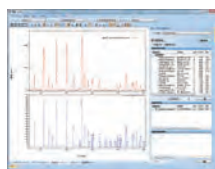
SuperLab

XRD system dedicated for high precision X-ray thin film analysis.



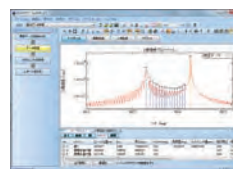
MiniFlex

General purpose benchtop XRD system for phase identification and quantification.



PDXL

Integrated powder diffraction analysis software.



GlobalFit

Integrated Thin Film Analysis Software.



SmartLab Studio II

Plugin-based software suite for measurement and analysis.

X-ray stress measurement systems

Rigaku's X-ray stress analyzers range from small, lightweight portable types to types for laboratory use, and include optimal products for various measurement subjects and environments. They enable speedy, high-precision on-site analysis of structures and large components such as bridges and pipes, residual stress measurement of micro parts, and similar tasks.



AutoMATE II

Laboratory micro-spot XRD residual stress analysis with both iso- and side-inclination methods.



SSD-MSF-3M/MSF-3M/PSF-3M

X-ray stress analyzers with configurations available for any sample size.



SmartSite RS

Very small and light portable stress analyzer that is especially designed for field analysis.

Single crystal X-ray diffraction systems

Rigaku's single crystal X-ray diffractometers realize optimal systems for each purpose through diverse combinations of X-ray source, optics and detector. These products quickly measure data of the highest quality in the laboratory, and then a highly reliable 3D structure of a molecule is obtained with advanced, highly automated analysis software.



XtaLAB SynergyCustom

Customizable Synergy platform for high-end SCX systems.



XtaLAB P1M

High speed system for structural biology with the PILATUS 1M large area detector.

XtaLAB Synergy

Highest flux microfocus sealed tube source and fastest goniometer for small molecule crystallography.



PX Scanner

Imaging and X-ray diffraction collection for crystals directly from crystallization plates.



Element Analyzer

X-ray fluorescence attachment.



XtaLAB mini II

A compact benchtop system makes routine self-service crystallography possible for the synthetic chemist.



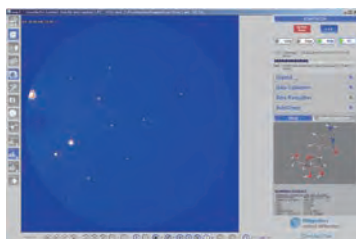
PlateMate

Goniometer adapter for diffraction screening of samples in crystallization plates.



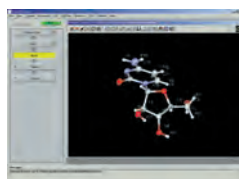
XtalCheck

Automated tool for performing in situ crystallography.



CRYALIS Pro

User-inspired data collection and data processing software for small molecule and protein crystallography.



CrystalStructure

Structure analysis program package.

Small angle X-ray scattering measurement systems

Rigaku's small angle X-ray scattering instrument systems have both high small-angle resolution and ease-of-use, and are accelerating R&D on nanoscale structures. With small angle scattering measurement, it is possible to obtain information important for materials research and structural biology, such as nanoparticle and pore size distributions, and the structure of proteins in solution.



NANOPIX

Small and wide angle X-ray scattering instrument designed for nano-structure analyses.



BioSAXS-2000

Small angle X-ray scattering Kratky camera system for protein solution structure determination.

X-ray topography systems

Rigaku's X-ray topography imaging systems can non-destructively detect crystal defects in single crystal materials, defects in epitaxial layers, and similar characteristics. By using 3D section topography, defects can be observed as 3D images. Tasks such as dislocation identification and dislocation density analysis can be done using software for automated analysis of crystal defects.



XRTmicron

Extremely fast measurement with automated dislocation analysis with automated wafer loading and alignment.



XRT-100/200XTOP

X-ray Topography Imaging System with XTOP camera.

Single crystal orientation measurement systems

Rigaku's X-ray diffraction system for single crystal orientation provides powerful support for processing and quality control of single crystal materials from ingots to wafers. With this system, any analyst can accurately determine the cutting orientation of single-crystal materials such as Si, Ge, GaAs, SiC, quartz and fluorite, and measure the orientation after cutting.



2291F2/2991G2

Manual operation systems provide easy setup and operation.



FSAS III

Automatic measurement of ingot and wafer.



FSAS II

Automatic measurement wafer.

Fluorescence

even if
the amount is
limited...

X-ray fluorescence spectrometers

Rigaku's X-ray fluorescence spectrometers come in two types, wavelength dispersive and energy dispersive, and the product line includes benchtop, special-purpose, general-purpose, and simultaneous multi-element models. These products meet diverse needs for element analysis including: solids/powders/liquids, light/heavy elements, and acceptance inspection/process management/R&D.

Wavelength dispersive



ZSX Primus IV

High power, tube above, sequential WDXRF spectrometer with ZSX Guidance software.



ZSX Primus

Optimized for liquid sample analysis, tube below, sequential WDXRF spectrometer.



ZSX Primus III+

High power, tube above, sequential WDXRF spectrometer.



Simultix 15

High throughput tube above multi-channel simultaneous WDXRF spectrometer analyzes Be through U.



Supermini200

High-power benchtop sequential WDXRF spectrometer analyzes O through U.



Primini Biofuel

Benchtop WDXRF optimized for P, S and Cl in petroleum products.



Micro-Z ULS

Dedicated ultra-low sulfur analyzer for petroleum fuels.



Mini-Z series

Single element WDXRF analyzer for quality control applications.

Energy dispersive



NEX CG

High performance EDXRF. Monochromatic secondary target with Cartesian-geometry for highest sensitivity.



NEX DE

60 kV EDXRF with integrated camera and variable small spot analysis.



NEX QC

Low cost EDXRF elemental analyzer. Intuitive software with touch screen interface.



NEX QC+ QuantEZ

NEX QC+ combined with Personal Computer. Cost-effective performance in a compact package.

Total reflection X-ray fluorescence



NANO HUNTER II

Benchtop total reflection XRF Spectrometer for elemental analysis of liquids to ppb levels.

On-line



Coating Weight Gauge Series

On-line, non-contact systems for measuring coating weight on rolled steel sheets.

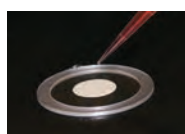
Sample preprocessing



Sample preprocessing Devices

Bead Sampler, sample crusher, mills and other sample preprocessing devices.

Accessories



XRF analysis supporting accessories

Sample cups, briquetting accessories, thin-films, filters, setup samples, etc.



Application package

The CRM standard samples and analysis conditions.



Pre-calibration package

Pre-installed calibration curves.



Master matching library

The sensitivities optimized for the specific application.

even if
the object is
out of reach....



X-ray imaging systems

Rigaku's X-ray imaging systems include high-resolution X-ray microscopes enabling observation at the submicron level, and CT for compact, high-speed industrial applications. These systems can quickly and clearly capture 3D images of the inside of tablets, advanced materials and industrial components.



nano3DX

Sub-micron computed tomography for material science at high resolution.



CT Lab GX90/130

Stationary sample, high-speed X-ray CT scanner for materials science.

Non-destructive testing products

Rigaku's non destructive X-ray testing instruments include: portable X-ray systems for industrial applications enabling outdoor inspection, such as internal inspection of concrete structures, and X-ray TV testing instruments enabling inspection for defects in plastic, light metal or cast parts and checking for foreign matter in clothing, general merchandise and shoes, using fluoroscopic images on a TV monitor.



RF-3530-2522CP

Inverter-controlled industrial portable X-ray system.



RF-300-250-200EGM

Microcomputerized directional industrial X-ray system.



RF-200SPS

Small, light weight non-destructive testing X-ray generator.



RF-100GS-B

Low-power directional X-ray inspection system.



DR-Lab

Digital X-ray inspection system.



FXG-DR series

Digital imaging X-ray inspection system.



CR-1012

Compact and lightweight IP scanner for images exposed by industrial X-ray equipments.



RV series

Metals checks in shoes, bags, general merchandise and apparel products by X-ray.

Semiconductor metrology systems

Rigaku's semiconductor metrology systems bring together Rigaku's X-ray analysis technologies, such as total reflection X-ray fluorescence, X-ray diffraction, and reflectivity measurement. In this way, they meet a variety of needs in semiconductor processes and R&D. These products can perform tasks such as sample film thickness and composition analysis, surface contamination analysis, and thin film structural evaluation. They also support automation.



MFM 310

Micro XRR, XRF, and XRD in-line metrology for pattern wafer; up to 300 mm wafers.



WaferX 310

In-line, simultaneous WDXRF spectrometer for wafer metal film metrology; up to 300 mm wafers.



WAFER/DISK ANALYZER 3650

Simultaneous WDXRF spectrometer for wafer metal film metrology; up to 200 mm wafers.



AZX400

Sequential WDXRF spectrometer for elemental analysis and thin-film metrology of large and/or heavy samples.



TXRF-V310

Ultra-trace elemental surface contamination metrology by TXRF with VPD capability; up to 300 mm wafers.



TXRF-310 Fab

Trace elemental surface contamination metrology by TXRF; up to 300 mm wafers.



TXRF 3760/3800e

Trace elemental surface contamination metrology by TXRF; up to 200 mm wafers.



SmartLab HTP

X-ray diffractometer with auto sample loader for 50-150 mm wafers.



CD-SAXS

Measurement of critical dimension using small angle X-ray scattering metrology for pattern wafer.

Handheld

Handheld analyzers

Rigaku's handheld analyzers quickly display measurement results on the spot, at the location of the samples you want to measure. Raman spectrometers verify pharmaceutical raw materials, explosives and similar dangerous substances. LIBS primarily identifies alloys.

Raman spectrometers



Progeny

Handheld Raman analyzer designed to be customizable and flexible for seamless integration into any work environment.



Progeny LT

Handheld Raman analyzer designed to be customizable and flexible for seamless integration into any work environment.



Progeny ResQ

The industry's most comprehensive chemical detection range in a fast and simple handheld form.

LIBS



KT-100

Handheld laser induced breakdown spectrometer designed for on-the-spot identification of alloys.

Thermal
&
Evolved Gas
Analysis

it becomes
visible with
our technology.

Thermal analysis instruments

Rigaku's thermal analysis instruments are user-friendly, and with high-sensitivity and high-precision they promise highly reliable data. A full range of attachments is available for high extendibility, and to meet a diverse range of thermal analysis needs, such as automatic sample change, measurement in a humidity controlled atmosphere, or sample visual observation.



Thermo plus EV02 TG-DTA8122

Thermogravimetric differential thermal analyzer.



Thermo plus EV02 TG-DTA8122 Smart Loader

Thermogravimetric differential thermal analyzer with auto sample changer.



Thermo plus EV02 Sample Observation TG-DTA8122

Thermogravimetric differential thermal analyzer with sample observation attachment.



Thermo plus EV02 TG-DTA/HUM-1

Humidity Controlled TG-DTA.



Thermo plus EV02 DSC8231

High-sensitive differential scanning calorimeter.



Thermo plus EV02 DSC8231 Smart Loader

High-sensitive differential scanning calorimeter with auto sample changer.



Thermo plus EV02 Sample Observation DSC8231

High-sensitive differential scanning calorimeter with sample observation attachment.



Thermo plus EV02 DSC8271

High-temperature and high-sensitive DSC.



Thermo plus EV02 TMA8311

Thermomechanical analyzer.



Thermo plus EV02 TMA/HUM-1

Humidity controlled TMA.



Thermo plus EV02 TDL8411

Thermal dilatometer.



Thermo plus EV02 TDL8411 Smart Loader

Thermal dilatometer with auto sample changer.



Thermo plus EV02 DTA8611

Macro type of differential thermal analyzer.



TS-POLAR

Thermally stimulated current measurement system.



TS-FETT

Thermally stimulated femtoampere electrom trap tracer.

Evolved gas analytical systems

Rigaku's evolved gas analytical systems perform evolved gas analysis simultaneously with thermal analysis. Systems are available to enable measurement of samples under various environments, such as interface systems connecting GC-MS from major manufacturers with TG-DTA, and all-in-one design instrument of TG-MS enabling higher precision measurement.



ThermoMass Photo

Simultaneous measurement instrument of TG-DTA & photoionization mass spectrometer.



TG-DTA/GC-MS

Combination system of TG-DTA & gas chromatograph-mass spectrometer.



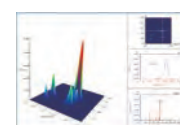
TPD type V

Temperature programmed desorption analysis system.



TPD typer Photo

Temperature programmed desorption - photoionization mass spectrometer.



3D Display & Analysis Software for Evolved Gas Analysis

Rigaku's Component Technologies

X-ray generators

In 1952, Rigaku was the first in the world to commercialize a rotating anode X-ray generator. Today, Rigaku's product line ranges in output from 50 to 9000 W, and at our Yamanashi Factory and US facilities we develop and produce everything from high-brightness, high-output types, to sealed tube microfocus X-ray generators. In the area of high-voltage generation power supplies, we develop and produce molded types more compact and stable than previous systems.



MultiMax-9
Multi-purpose rotating anode X-ray generator



MicroMax-007HF
Microfocus Rotating Anode X-ray Generator



MicroMax-003
Microfocus sealed tube X-ray generator



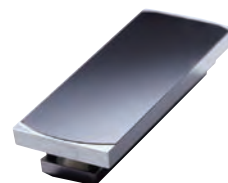
FR-X
Ultra high-intensity microfocus rotating anode X-ray generator

X-ray optics

At Rigaku Innovative Technologies, which became part of our group in 2000, we are developing and manufacturing X-ray spectroscopy and focusing elements. A key part of high-precision, high-sensitivity X-ray analysis is focusing X-rays and making them monochromatic or parallel by using optic elements fabricated with sophisticated technology for artificial multilayer stacked films. At our Osaka Factory, we develop and manufacture analyzing crystals for wavelength dispersive X-ray fluorescence spectrometers. The CBO (Cross Beam Optics) series which facilitates optical system switching also broadens the possibilities of X-ray analysis.



Confocal Mirror
Multilayer optics



RX series
Multilayer optics



CBO series
Cross beam optic units



K α 1 optics

X-ray detectors

Among Rigaku's X-ray detectors, the mainstay systems are direct-detection type semiconductor detectors such as the 1-dimensional D/teX series and 2-dimensional HyPix series which combine high-speed, low-noise, high-resolution and other features. Our Yamanashi Factory is equipped with a cleanroom, a semiconductor process line, and bonding equipment, and we produce detectors in-house. At Rigaku Innovative Technologies Europe s.r.o., established in 2008, we are also developing devices such as ultra-high-resolution CCDs. We are continuing our detector innovation in pursuit of greater convenience, such as simple switching between 0, 1 and 2 dimensions.



HyPix-6000/6000HE
Hybrid Pixel Array Detector



HyPix-3000
Hybrid Pixel Array Detector



HyPix-400
Hybrid Pixel Array Detector



D/teX Ultra250/250HE
High resolution and high speed
1D silicon strip detector



XTOP
High sensitivity X-ray camera



HR-XTOP
High sensitivity, high resolution
X-ray camera



XRM
High resolution camera



Corporate Profile

Rigaku Corporation

Business	Manufacturing and sales of scientific instruments
Location	Head Office, Tokyo Plant, X-ray Research Laboratory 3-9-12, Matsubara-cho, Akishima-shi, Tokyo 196-8666, Japan Tel. 81-42-545-8111 Fax. 81-42-544-9795 Sales Office 4-14-4, Sendagaya, Shibuya-ku, Tokyo 151-0051, Japan Tel. 81-3-3479-0618 Fax. 81-3-3479-6112 rinttyo@rigaku.co.jp Osaka Plant 14-8, Akaoji-cho, Takatsuki-shi, Osaka 569-1146, Japan Yamanashi Plant 4495-8, Wakamiko, Sutama-cho, Hokuto-shi, Yamanashi 408-0112, Japan
CEO	Hikaru Shimura
Established	December 6, 1951
Capital	JPY 100 million
Employees	Over 1,400 worldwide
Annual sales	37 Billion JPY (FYE 2017 Consolidated Sales)



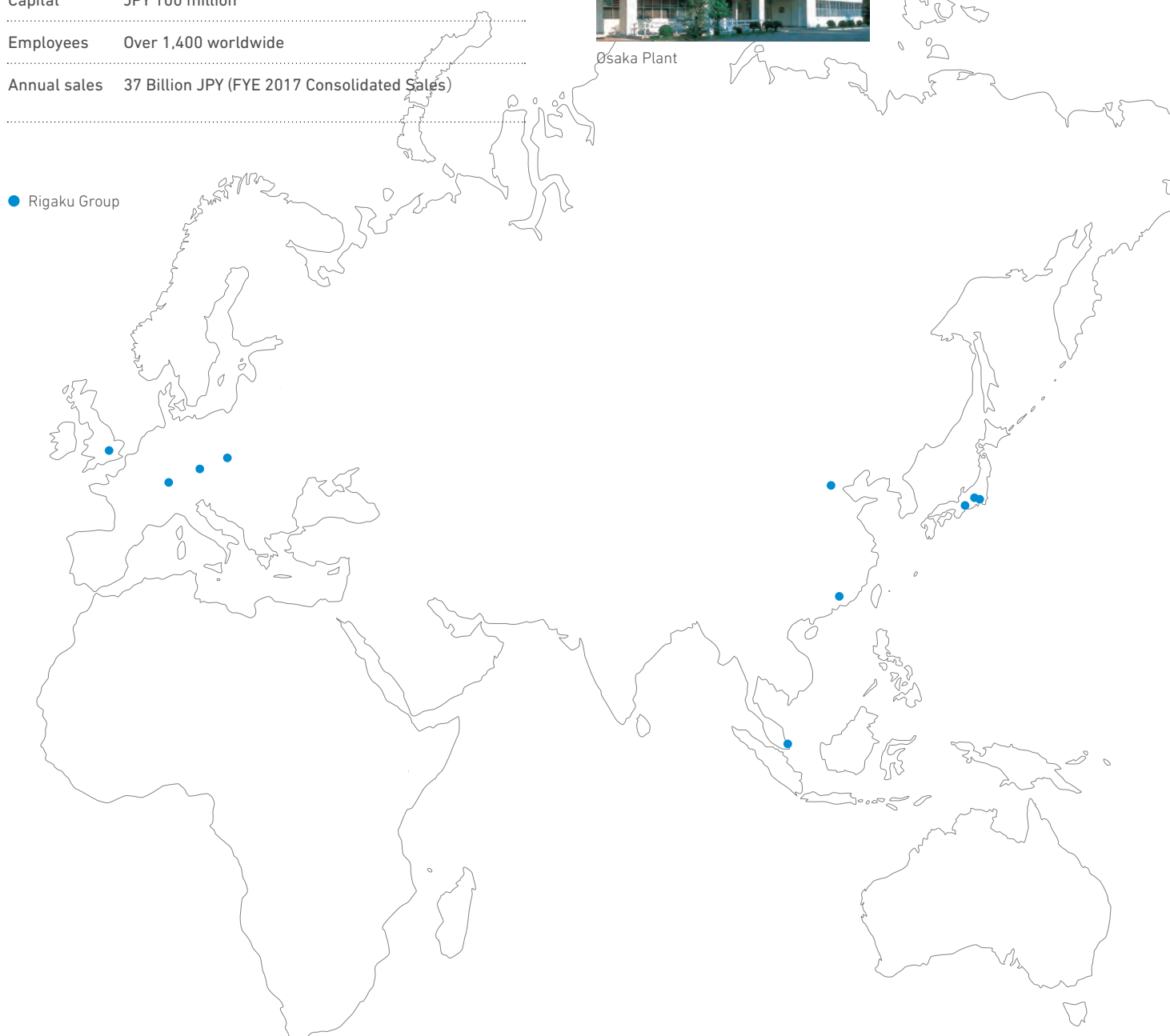
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Osaka Plant



Yamanashi Plant



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Applied Rigaku Technologies, Inc.
(Energy dispersive X-ray fluorescence)
9825 Spectrum Drive, Bldg. 4, Suite 475, Austin, Texas 78717, U.S.A.

Rigaku Innovative Technologies, Inc. (X-ray optics)
1900 Taylor Road, Auburn Hills, Michigan 48326, U.S.A.

Newton Scientific, Inc. (Miniature X-ray sources)
255 Bent Street, Cambridge, Massachusetts 02141, U.S.A.

Rigaku Analytical Devices, Inc.
(Handheld and portable spectroscopic analyzers)
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Specifications and appearance are subject to change without notice.

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