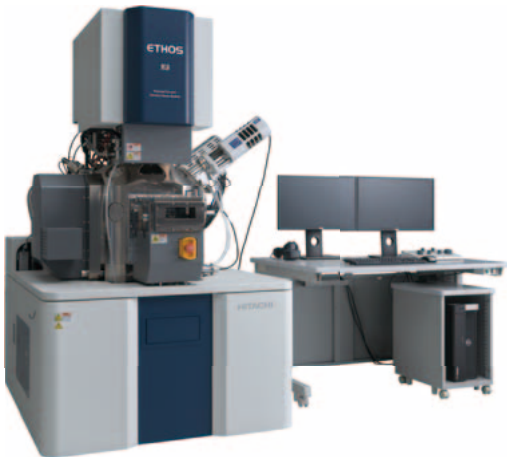
Measuring & Analytical Instruments

1 NX5200: FIB-SEM System Enabling High-precision, High-throughput Analysis of Cutting-edge Devices

The use of three-dimensional (3D) structures and new materials in cutting-edge devices has recently been gaining ground along with increasing miniaturization. As a result, detailed physical analysis is becoming increasingly important in addition to in-line inspection and measurement. When analyzing specific locations in cutting-edge devices, it is essential to use a focused ion beam and scanning electron microscope (FIB-SEM) system to prepare the sample and use a transmission electron microscope (TEM) for the observation and measurement.

Designed in response to user feedback on previous models, the NX5200 analysis system greatly reduces TEM sample preparation time and saves labor by automated processing. Processing endpoints can be checked with the same high-resolution observation provided by previous models. The improved low-acceleration voltage FIB observation performance makes it easy to set processing positions when preparing TEM samples. Navigation functions used to identify locations have been enhanced to enable rapid processing settings, ensuring analysis is highly accurate while maintaining high throughput. User requests for further reductions in labor and manpower will be met by raising the automation rate, increasing speed, and improving the success rate and accuracy of automated functions.
(Hitachi High-Tech Corporation)



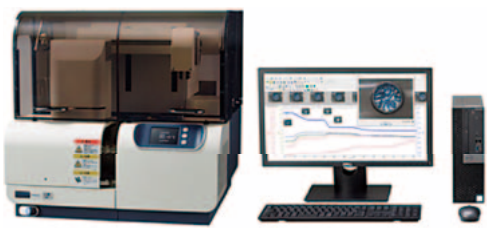
1 NX5200 FIB-SEM system

2 NEXTA STA Series of Simultaneous Measurement Systems for Thermogravimetry-Differential Scanning Calorimetry (TG-DSC)

The ability to analyze trace samples or minute additive quantities is in high demand for the cutting-edge materials that have recently become increasingly widespread in sectors such as vehicles and electronics. This demand has created the need for thermal analysis systems providing high signal stability and more accurate quantitative analysis.

NEXTA STA is a series of simultaneous measurement systems for thermogravimetry (TG) and differential scanning calorimetry (DSC). NEXTA STA models greatly improve TG measurement performance, analyzing minute quantities with microgram-order accuracy. A new mechanism has been developed that keeps the weight-measuring balance at a constant temperature. NEXTA STA models use this mechanism to minimize thermal effects and attain TG signal variation performance of no more than 10 μg in the measurement range from room temperature to 1,000°C. They also come with a number of other functions that enable complex analysis of thermophysical properties. For example, the DSC function can quantify reaction heat values and specific heat capacities. There is also a sample observation function enabling camera observations of sample changes in real time, and an autosampler enabling consecutive automatic measurements of up to 50 samples.

The NEXTA STA series will meet a number of analysis needs over the coming years by quantifying components of cutting-edge and composite materials, and quantifying trace water content.
(Hitachi High-Tech Science Corporation)



2 NEXTA STA series simultaneous measurement systems for TG-DSC providing high thermogravimetric measurement performance