News Release

Hitachi High-Tech

FOR IMMEDIATE RELEASE

Launch of the AFM5000II Scanning Probe Microscope Controller and the PS3500DDII Sequential High resolution ICP-OES

TOKYO, August 28, 2014 – Hitachi High-Tech Science Corporation (Hitachi High-Tech Science, President: Toshiyuki Ikeda) announced the release of the AFM5000II, a Scanning Probe Microscope (SPM) controller, and the PS3500DDII, a sequential high resolution ICP Optical Emission Spectrometer.

These instruments will be displayed at the "JASIS 2014," to be held at Makuhari Messe International Exhibition Hall from September 3rd through 5th.

The AFM5000II Scanning Probe Microscope Controller

-Easy nano-imaging via an advanced auto measurement parameter tuning function and a new GUI-

The Scanning Probe Microscope (SPM) is widely used in various fields. It detects various physical quantities such as hardness, viscoelasticity, friction, electric current, magnetism of the sample, and atomic force between the probe and the sample. It also measures topography at the nano level of the sample surface and performs physical property mapping. The new AFM5000II SPM controller is standard equipped with RealTuneII, an auto measurement parameter tuning function, and a new Graphical User Interface (GUI). This allows even inexperienced users to obtain data with high repeatability, even with samples that have not been measured before.

AFM5000II

Main Features

1) RealTuneII, the Advanced Auto Measurement Parameter Tuning Function
   High-repeatability data can be obtained since all the parameters that need to be adjusted prior to the measurement are tuned automatically.

Cantilever frequency and amplitude, along with scan frequency, feedback parameters, and reference force are automatically tuned. Optimized measurement conditions according to the measurement unit, cantilever type, surface shape, and interactions between the probe and the sample are provided.

2) New GUI

Together with RealTuneII, our user-friendly GUI displays selected information clearly and guides you through the operation. After setting the sample and a cantilever, measurement is started with a single click.

Main Specifications

Standard function	RealTuneII (Auto measurement parameter tuning function), tip calibration function, navigation, and one-click auto measurement
Measurement unit	AFM5100N, AFM5300E
Dimension, Weight	W220 x D500 x H385 mm, Approximately 15 kg

The PS3500DDII High Resolution Sequential ICP Optical Emission Spectrometer
-World-class Resolution, Accuracy, and Repeatability-

ICP optical emission spectrometry measures the light emitted from excited elements. There are two types of spectrometers, the sequential type and the simultaneous type. Sequential type spectrometers generally have two to three times better resolution than simultaneous type spectrometers. (ICP: Inductively Coupled Plasma)

Through precision processing of spectroscopic optical grating, optimized optics, and direct drive scanning technology, wavelength resolution (FWHM) is improved from 0.0045 nm on conventional instruments to a world-class level of 0.003 nm (at a scanning resolution of 0.00065 nm). Improved repeatability allows for higher reliability of the measurement results.

PS3500DDII

Main Features

1) High Resolution

Wavelength resolution (FWHM) is improved from 0.0045 nm (compared to conventional instruments) to 0.003 nm, a world-class level of resolution.
Precision control via a high resolution direct motor achieves a scanning step of 0.00065 nm, enabling clear separation from interferences.

2) Accuracy and Repeatability

Introduction stability of an atomized sample is enhanced through an improved sample introduction system. As a result, repeatability is doubled compared to our conventional instruments, which boosts the reliability of the measurement results.

3) Usability and Maintainability

Usability and maintainability are improved through redesigned filters and plasma box piping. An optional ActiveFlow system, which reduces the amount of argon consumption by half, and an internal standard spectrometer are also available.

Main Specifications

Model	PS3520DDII (Standard), PS3520VDDII (Vacuum), PS3520UVDDII (Vacuum Ultraviolet)
Wavelength Resolution (FWHM)	0.003 nm (Hg313 nm)
Scanning resolution	0.00065 nm
Wavelength driving method	Direct drive
Dimension, Weight	W1,325 x D815 x H1,455 mm, Approximately 310 kg

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