Exhibition

ITEM2004 in Yokohama

Innovations for Advanced Imaging-Advancement of Key Technology

The International Technical Exhibition of Medical Imaging 2004 (ITEM2004) is Japan's largest medical imaging system exhibition. This year the exhibition was held from April 8th to 10th at the Pacifico Yokohama Exhibition Hall (Yokohama, Japan) together with the Japan Radiology Congress (JRC).

Shimadzu Corporation was an anchor exhibitor with one of the largest booths. With the theme of "Innovations for Advanced Imaging – Advancement of Key Technology," Shimadzu exhibited digital X-ray systems equipped with a new-generation direct-conversion flat-panel detector (FPD) and a new PET system. A record number of visitors visited the Shimadzu booth and the exhibition was a success.

The Cardiac & Vascular Imaging System "DIGITEX Safire" with direct-conversion FPD (9″x9″), released last October in Japan, created waves because of its outstanding image quality. The booth was filled with interested visitors and interventional radiologists keenly listened to explanations about the system. Many customers and other vendors visited the booth to learn about the large-area FPD (17″x17″) that is scheduled to be released soon. The Shimadzu booth was one of the most popular at the exhibition, reaffirming Shimadzu's strong presence and outstanding reputation as an FPD manufacturer.

There were many international visitors, some of which came with the specific purpose of asking Shimadzu's top management to release FPD-equipped systems overseas as soon as possible.

PITTCON2004 in Chicago

Shimadzu Introduces its Latest Technology to the World

PITTCON2004 was held in Chicago, Illinois from March 7th to 12th. This year there were about 25,000 visitors, a ten percent increase from last year's total (22,628). One reason for the increase was that the event was held in the North after being held in the South for several consecutive years. This was a very special PITTCON for Shimadzu. On the 8th, Shimadzu's Fellow Koichi Tanaka and Prof. Kurt Wüthrich of Switzerland, 2002 Nobel Prize laureate in chemistry, gave special lectures. Mr. Tanaka's lecture was titled "The Origin and the Future of Macromolecule Ionization by Laser Irradiation." Presented in the main lecture hall, the lecture was well received by many visitors. Shimadzu's Chairman Hidetoshi Yajima also paid a formal visit to the event as chairperson of the Japan Analytical Instruments Manufacturers Association (JAIMA) to discuss strengthening the cooperative relationship between the analytical instrument industries of the United States and Japan. In the exhibition held from March 8th to 11th, Shimadzu exhibited many new products such as the state-of-the-art spectrophotometer Solidspec-3700; Accuspot, a microfractionation spotter for MALDI-TOF/MS used in life science; and CHIP-1000 Chemical Printer for sample preparation in proteomics analysis. Shimadzu's new products impressed visitors with their excellence. "Laboratory Informatics" was the key topic of this year's exhibition, which epitomized the ongoing evolution of software in the analytical instrument industry in the era of information technology.

New Products

High-resolution Images Support Cardiac Examination and Treatment

X-ray Cardiac & Vascular System Featuring Direct-conversion FPD

Shimadzu has launched the DIGITEX Safire Cardiac & Vascular System featuring a direct-conversion flat panel detector (FPD) (an extremely high-sensitivity and high-resolution X-ray sensor) mounted to the C-arm. The X-ray cardiac and vascular system is a high-tech medical instrument that supports cardiac diagnosis and treatment. It comprises a C-arm equipped with an X-ray tube and an FPD, a table, an image-processor, and image-display monitors. There are two versions available: the HC model with ceiling-suspended C-arm and HF model with floor-mounted C-arm. (See article on pages 6 - 9 of this issue.)

▲DIGITEX Safire HF

▲DIGITEX Safire HC

Quick, Positive Positioning Supports Surgery

OPESCOPE ACTIVO Surgical Mobile C-arm Imaging System

Shimadzu has launched the OPESCOPE ACTIVO Surgical Mobile C-arm Imaging System. To maintain cleanliness and ensure easy positioning, no cables protrude from the C-arm that handles X-ray irradiation. This state-of-the-art design ensures sterility and caters for smooth and efficient surgical operation. The fully balanced positioning system ensures quick and accurate C-arm positioning operations. The high-capacity X-ray tube permits continuous fluoroscopy over extended periods. Users can store up to eight fluoroscopic images as standard. Pulsed fluoroscopy and a compensation filter reduce total X-ray dose without compromising image quality.

New Handle Design and Illumination Functions Enhance Workflow

X-ray Tube Support and High Frequency Inverter Generator

Shimadzu has launched a ceiling-suspended X-ray tube support and high frequency inverter generator to improve workflow in general radiography rooms and contribute to increased productivity. The new rounded handle shape simplifies positioning at all angles, including the complex angles required for radiography in orthopedic cases. The handle significantly enhances positioning operability. This equipment provides a powerful tool for X-ray radiography in not only normal examinations, but also in emergency situations where the patient cannot be moved.

▲CH-200M X-ray Tube Support and UD150B-40/L-40 Generator

Non-destructive Testing of Large Specimens for Electrical/Optical Applications

SolidSpec-3700/3700DUV UV-VIS Spectrophotometer

Shimadzu has launched the SolidSpec-3700 (standard model) and 3700DUV (deep-UV model) UV-VIS spectrophotometers best suited for the testing of electrical and optical components. They permit measurements of spectra across a wide wavelength range from deep UV to near IR, by switching between three detectors. They also have a large sample compartment to analyze large specimens without cutting.

The SolidSpec-3700 can measure highly accurate spectra across a wide wavelength range for full-surface measurements on 12-inch wafers, non-destructive testing of increasingly large FPD materials, and measurements for the evaluation and quality control of optical materials used in exposure equipment for semiconductor manufacturing.

LCMS-IT-TOF Liquid Chromatograph Mass Spectrometer

World First! Accurate MS^n mass measurements by rapid, simultaneous measurements of positive and negative ions

Shimadzu has launched the world's first liquid chromatograph mass spectrometer combining a high-performance liquid chromatograph that can separate a variety of chemical compounds, an ion trap (IT) mass spectrometer able to fragment molecules, and a time-of-flight (TOF) mass spectrometer permitting high-resolution and high-accuracy mass measurements. It takes full advantage of the features of the two mass spectrometers (IT and TOF) to achieve sensitive and accurate measurements of detailed molecular structures.

In addition to the easy-to-use, high-throughput MALDI-TOF mass spectrometer AXIMA Series, Shimadzu now offers easily automated LCMS-IT-TOF Liquid Chromatograph Mass Spectrometer that provides more diverse information. This powerful combination will contribute to reduced analysis times and higher reliability in life sciences and pharmaceuticals research.

High-throughput Proteome Analysis

AccuSpot LC Microfractionation Spotter for MALDI Plates

Shimadzu has launched the AccuSpot LC Microfractionation Spotter for MALDI plates. AccuSpot automatically spots eluates separated by HPLC onto target plates for MALDI-TOF mass spectrometers such as Shimadzu AXIMA Series. It enhances the work efficiency of MALDI-TOFMS analysis by automating sample spotting procedures.

AccuSpot allows Shimadzu to offer a total analysis system for all stages from separation by HPLC to analysis by MALDI-TOFMS.

To speed up the development of the life sciences, this product is sold in combination with 2D micro-HPLC, another effective tool for proteome analysis.

Micro-scale On-membrane Digestion for Protein Analysis

CHIP-1000 Chemical Printer

During pretreatment of protein samples for analysis by a MALDI-TOF mass spectrometer, proteins are separated by 2D electrophoresis and dispensed as spots (approx. 1 mm diameter) onto a membrane. The CHIP-1000 Chemical Printer delivers picoliter volumes of reagent to specific locations within the protein spot of interest.

Thanks to technologies for accurate positioning on the membrane and for dispensing minute samples (similar to the technology used for inkjet printers), the CHIP-1000 Chemical Printer is the first instrument in the world to allow microanalysis within protein spots. Shimadzu jointly developed the CHIP-1000 with Proteome Systems Ltd. (PSL), an Australian bio-venture.

New Reagents Launched for Protein Analysis by MS

Contributing to Protein Research for Medicine and Drug Discovery

Shimadzu has launched a Stable Isotope Labeling Kit for the quantitative comparison and analysis of protein expression by mass spectrometry. The reagent kit is ideal for the comprehensive and quantitative analysis of protein expression unique to specific diseases in biosamples, including blood, cells, or tissue. It is highly effective for the identification of diseases and the development of effective new drug for the treatment.

The reagents work on the tryptophan in the proteins, making the analysis results of mass spectra clear and simplifying analysis. Analysis costs can be reduced by combining the reagents in this kit with a simple concentration method.

(See article on pages 17 - 18 of this issue.)

Distortion-free Images even from Tilted Angles by Using Flat-panel Detector

SMX-1000 Digital Microfocus Industrial X-ray TV System

Shimadzu has launched the SMX-1000 Digital Microfocus X-ray TV System for use in industrial applications. It adopts a flat-panel detector (FPD) that detects X-ray images of the specimen as digital image data to ensure clear distortion-free images. The equipment displays a fluoroscopic image of a specimen by passing X-rays generated from an extremely small X-ray source through the specimen. This type of non-destructive test instrument is widely used in the electronics and other industries. Software for image processing and instrument control makes operation simple and easy.

Accurate Control and Measurement of Micro Displacements and Micro Test Forces Micro Strength Tester for Electronic Components

MST-I Micro Autograph

Shimadzu has launched the MST-I Micro Autograph to conduct accurate strength testing through the control and measurement of micro-range displacements (0.02 µm min.) and test forces (2 mN), targeting testing of electronic chip components. A servomotor and precision ballscrew apply loads to samples at 5-nanometer control resolution. Forces in the specimen are controlled and measured by a load cell, while deflections are controlled and measured by a linear scale. The optional TRAPEZIUM 2 data-processing software offers additional functions including ultra-high-speed sampling, voice navigation, network compatibility, and storing of various testing parameters.

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