Surface Texture・Contour Measuring Instruments

Nano Profile Scanner

NPS2100A

The NPS2100A has a probe tip diameter that can be measured in the tens of nanometers. Using this probe to scan the workpiece surface enables irregularities to be displayed in three dimensions with nanometer level resolution.
The measuring unit has a self detecting type cantilever and vibration isolation mechanism as standard features. In addition, it is compact enough to be used on a desk and features outstanding operational ease.

Nanometer Level Profile Evaluation

- The NPS2100A performs analysis of minute profiles ranging from less than a nanometer to 10 micrometers.

Unique Self Detecting Cantilever

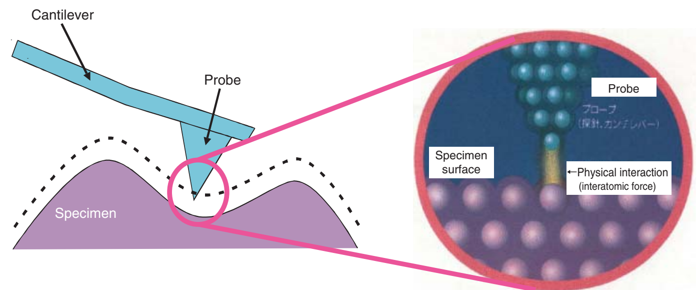
- The cantilever incorporates a unique sensor that detects deflection. It is easy to install and operate. The optical axis does not need to be adjusted since it does not use a laser optical system, and can be taken anywhere for measurements.

Standard Vibration Isolation Mechanism

- The provision of a vibration isolation mechanism that consists of a coil spring and gel damper allows measurements to be performed at virtually any location.

High-Speed Measurement

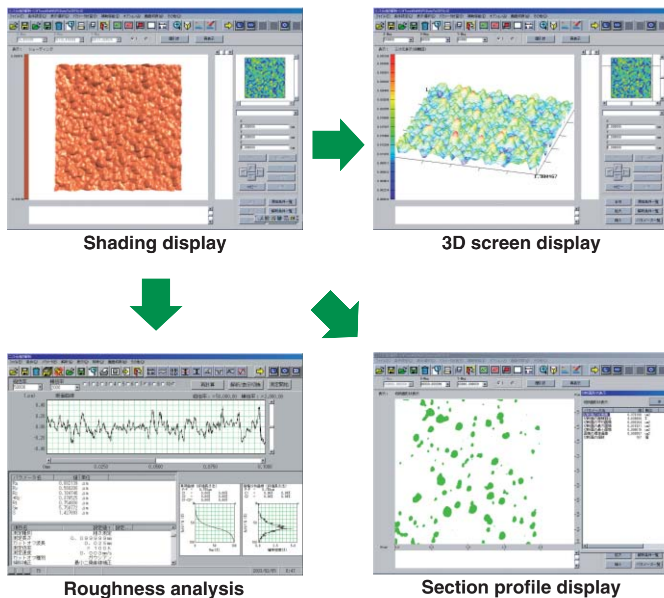
- High efficiency measurement of 12 seconds to 1800 seconds per frame is realized. The scanned profile can be monitored during measurement.



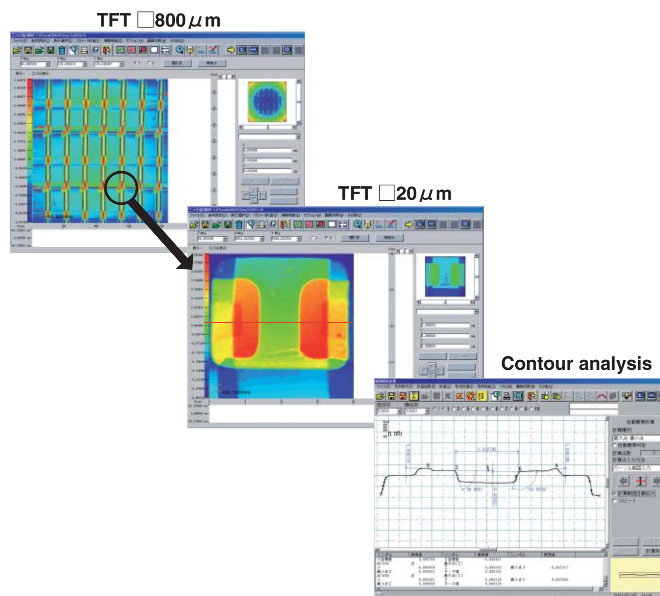
Principle of NPS2100A Sensor

The interaction (interatomic force or repulsion) that acts between the probes and the specimen surface is detected in order to measure the microscopic surface shape.

Analysis with TIMS Integrated Program



Roughness Analysis of Coating Film



Contour Anlysis of LCD Substrate

NPS2100A Applications

Semiconductors
Device pattern profile evaluation, film grain evaluation

Recording Media
Disk surface evaluation, chemical texture/bit profile evaluation, magnetic tape/magnetic head surface evaluation

Liquid Crystal・Other Displays
LCD panel surface evaluation, touch panel gap measurement, ITO film grain evaluation

Crystal Devices
Crystal oscillator/electrode surface roughness evaluation, SAW filter surface film thickness/step measurement

Ceramics・Glass
Surface/section profile evaluation, coating surface film thickness/step measurement, lens/optical filter profile evaluation

Electronic Devices
Surface profile evaluation, roughness/step measurement, plated surface evaluation, defect analysis

Molecular Materials
Polyamide film surface treatment evaluation, proccesed paper surface evaluation, paint film/coating film thickness/step measurement

Machine Tools
Grinding process evaluation, wear surface evaluation

Specifications

Model		NPS2100A
Measuring range	X axis/Y axis	Max. 800 × 800 mm
	Z axis	Max. ±10 μm
Resolution	Z axis	0.3 nm
Workpiece stand	Movement distance	10 mm in X, Y and Z directions
	Workpiece shape	Max. ϕ60mm, Thickness: 8.5 mm
Scanning speed		12 seconds – 1800 seconds / frame
Measuring modes		Contact mode, dumping mode
Evaluation functions		3D display, contour line display, Smeared contour display, contour line density display, section profile display, peak distribution display, airview (hidden line processing, mesh display, height color coding, view-point direction specification), load curve display, amplitude distribution (ADF) display, peak height distribution display
Standard accessories		Self detecting type cantilever (For contact mode: 10 pieces/box, For Dumping mode: 10 pieces/box), pin set for cantilever, standard sample, optical microscope set, instruction manual