

SENresearch 4.0

Spectroscopic Ellipsometer
with application specific configuration

- Widest spectral range and highest spectral resolution
- No moving parts with SSA principle
- Full Mueller matrix by innovative 2C design
- SpectraRay/4 comprehensive ellipsometry software



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Erfolg durch Leistung

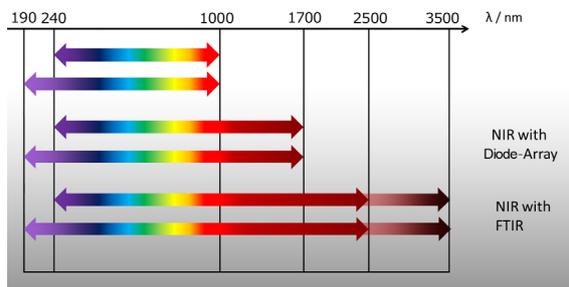
Highlights

The SENTECH SENresearch 4.0 Spectroscopic Ellipsometer covers the widest spectral range from 190 nm to 3,500 nm and the highest spectral resolution in the NIR by FTIR ellipsometry.

The Step Scan Analyser (SSA) principle is a unique feature of the tool. The field upgradeable 2C design allows full Mueller matrix measurement.

The SENTECH SENresearch 4.0 comes with Spectra-Ray/4 – our comprehensive software for ellipsometry data acquisition and analysis. Every individual SENTECH SENresearch 4.0 spectroscopic ellipsometer is a customer-specific configuration of spectral range, options and field upgradeable accessories.

Configuration



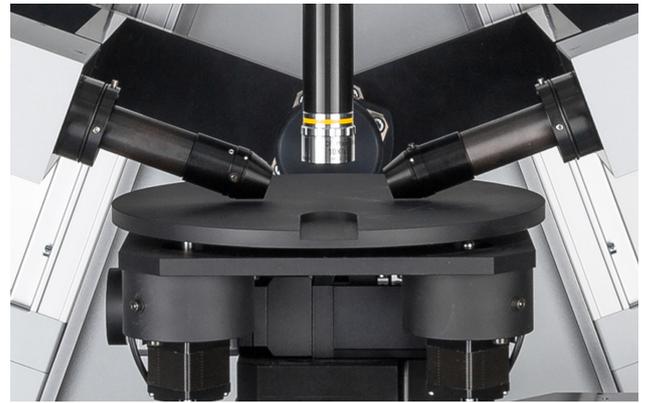
The SENTECH SENresearch 4.0 spectral ranges

Options

- Motorised pyramid goniometer (20° – 100°)
- Reflectometer (450 nm - 920 nm spectral range)
- Cryostat

Field upgradeable accessories

- Mapping
- Turntable for anisotropic samples
- 2C design for full Mueller matrix measurement
- Auto height and tilt adjustment
- Micro spots
- Liquid cells
- Heating and cooling stages
- Holder for transmission measurements



The SENTECH SENresearch 4.0 Spectroscopic Ellipsometer with automated height and tilt adjustment and micro spot option

Specifications

Ellipsometer operation principle	Step Scan Analyser (SSA) PSCA setup Highly-stabilised compensators
Light source	Computer controlled dual light source comprising Deuterium and Halogen-Tungsten lamp
Detector/ Spectrometer	UV-VIS: <i>linear CCD array</i> NIR (up to 1,700 nm): <i>linear InGaAs diode array</i> NIR (up to 2,500 nm/3,500 nm): <i>FTIR spectrometer, InGaAs/InAs photodiode</i>
Accuracy	Ψ (Psi): 45 deg \pm 0.03 deg Δ (Delta): 0 deg \pm 0.06 deg
Precision of Thickness (1σ)	0.015 nm, SENTECH standard wafer 100 nm SiO ₂ /Si
Precision of Refractive index (1σ)	0.0002 SENTECH standard wafer 100 nm SiO ₂ /Si
Spot size	1.5 mm – 3 mm 200 μ m with standard micro spot (smaller on request)
Incident angle	20° – 100°, 0.001° precision (Motorised pyramid goniometer) 40° – 90°, set in 5° steps, 0.02° precision (manual goniometer)
Measurement time	UV-VIS: 5 s NIR: 10 s (with FTIR) Fast mode (UV-VIS): 200 ms
Sample platform	150 mm – 300 mm diameter
Power requirements	115/230 VAC, 50 Hz – 60 Hz, 600 W

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