

Key Strengths

technology for ground-breaking nanoscale analytics applications



Market-Leading Technology

Revolutionizes your nanoscale experience with innovations developed by pioneers in tip-enhanced technology.



Unprecedented Upgrade Potential

neaSCOPE modular design guarantees a tailored start for your applications and accommodates your future needs.



Reliability & Ease of Use

Integrated proprietary hardware and intuitive control software provide efficient start and guarantee performance.



No 1 Choice at Renowned Labs

neaSCOPE functionality & performance is proven by unmatched publication record and scientific impact.



Product Line
neaspec

Additional Services



Evaluate the capabilities of our technology & products.



Successful test results could significantly increase the approval chance of your grant application.



Monthly reviews of neaspec publications.



Keep you up to date in the field of nanoscale analytics and help you discover new neaSCOPE applications.

neaSCOPE

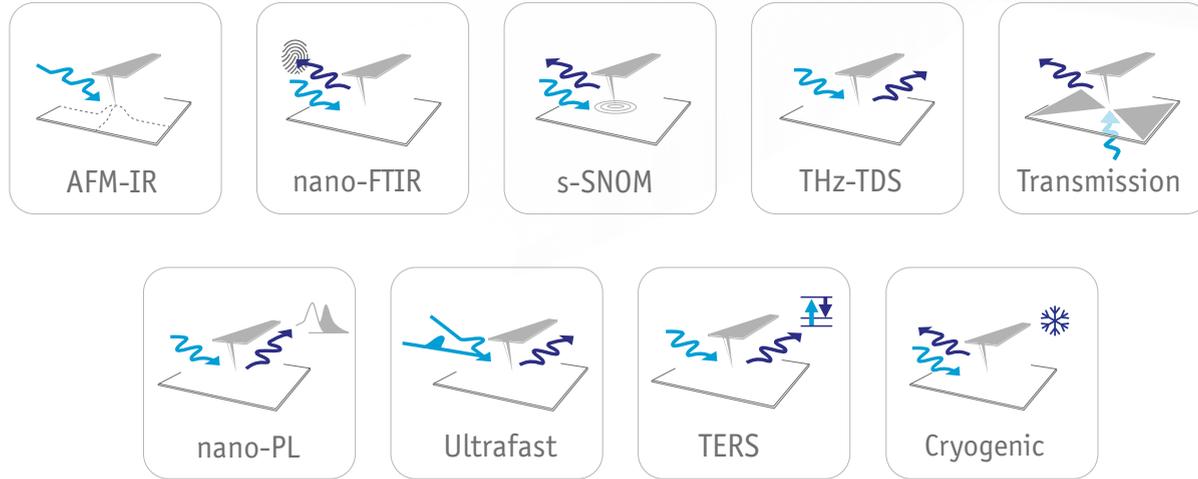
nanoscale optical imaging & spectroscopy

Choose technologies that suit your application

highest configuration flexibility for nanoscale imaging & spectroscopy

neaSCOPE is an application-driven product line for tip-enhanced nanoscale imaging and spectroscopy, serving customer needs in diverse fields of science, engineering and industrial research,

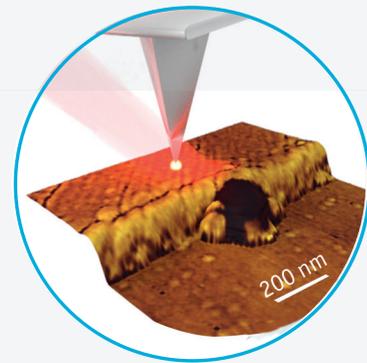
which include 2D materials, plasmonics, polymers, materials & life sciences, semiconductor research, cryogenic & ultrafast studies.



Technologies

neaspec neaSCOPE incorporates the largest number of AFM-based tip-enhanced technologies for nanoscale optical analysis of samples at sub-10 nm spatial resolution across the entire optical spectrum from Visible to mid-IR to THz frequencies.

- focused IR laser beam illuminates a standard metalized AFM tip
- tip generates a greatly enhanced nano-focus at its apex that locally probes the sample
- sample optical properties are probed at the nanoscale via detection of:
 - elastically scattered light (nano-FTIR & s-SNOM)
 - thermal expansion using AFM (AFM-IR)
 - inelastic light scattering (photoluminescence & Raman)
- nanoscale optical images & spectra are recorded simultaneously with topographic information
- comprehensive suite of AFM modes for correlative nanomechanical, electrical, electro-optical and thermal analysis (Tip Force, Piezo-response, KPFM, c-AFM, Photocurrent, nano-TA, etc.)



Applications

Optical spectral region and particularly “mid-IR fingerprint region”, allows for investigation of chemical, structural and electronic properties of materials. neaspec brings conventional optical techniques to the nanoscale and enables nanoscale analysis on all classes of materials in virtually all fields of science and technology.



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| <h3>Polymer Sciences</h3> <p>Chemical nanocomposition M. Goikoetxea et al., Macromol. 54, 995 (2021)</p> | <h3>Semiconductors</h3> <p>Free carrier profiling A. J. Huber et al., Nano Lett. 8, 3766 (2008)</p> | <h3>Life Sciences</h3> <p>DNA & Amide band signature G. Ajaezi et al., Analyst 143, 5925 (2018)</p> | <h3>Surface Polaritons</h3> <p>Mapping of optical modes J. Duan et al., Nature Comm. 12, 4325 (2021)</p> |
| <h3>Time-Resolved</h3> <p>Nanoscale carrier dynamics M. Eisele et al., Nature Phot. 8, 841 (2014)</p> | <h3>Plasmonic Field Mapping</h3> <p>Complex optical field mapping T. Habteyes, J. Phys Chem C 118, 9119 (2014)</p> | <h3>Photovoltaics</h3> <p>Functionality of perovskites A. Buyruk et al., ACS Appl.Mater. Interf. 13, 32894 (2021)</p> | <h3>Mineralogy</h3> <p>Carbonyl compounds in meteorites M. Yesiltas et al., scientific rep. 11, 11656 (2021)</p> |