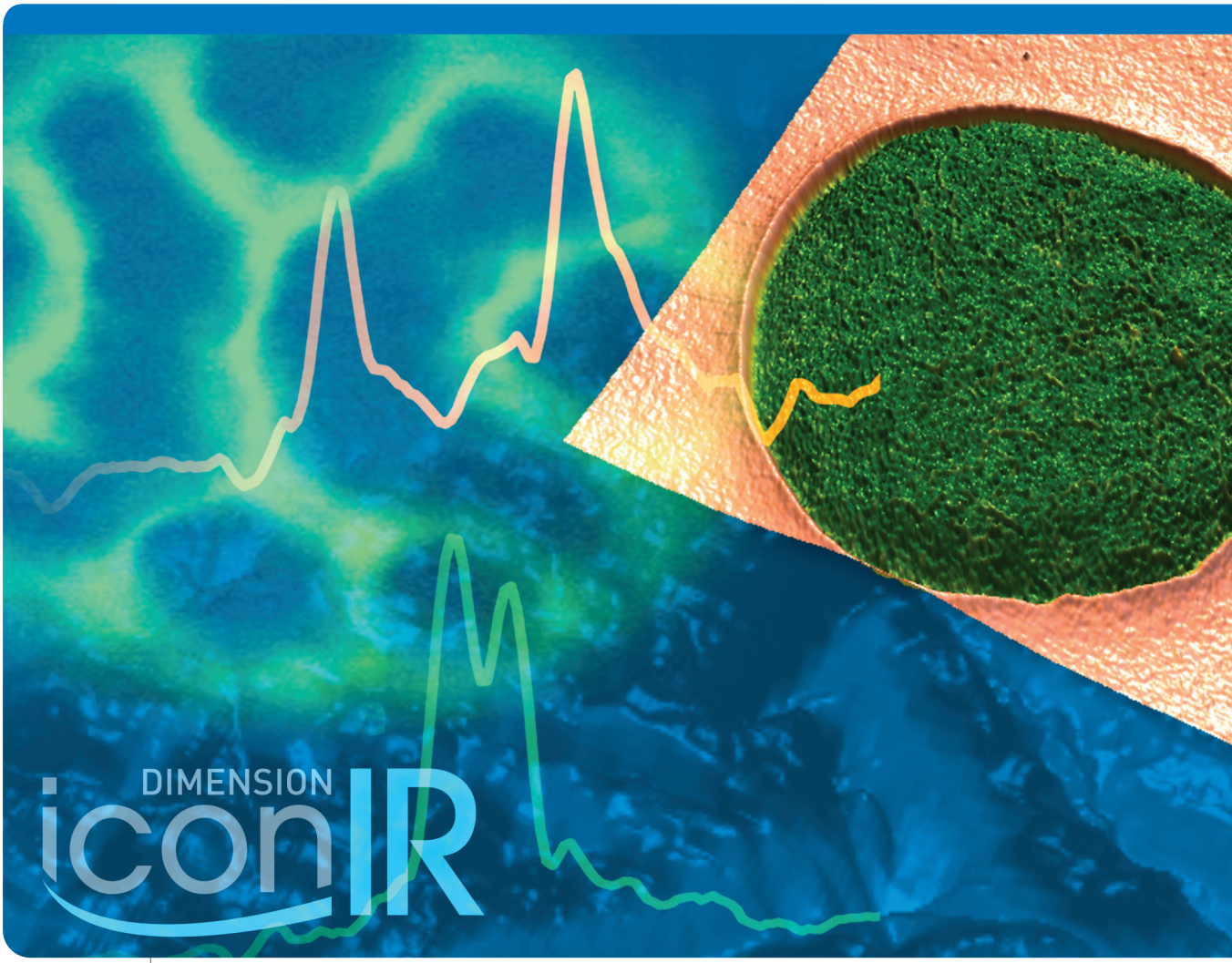


Dimension IconIR

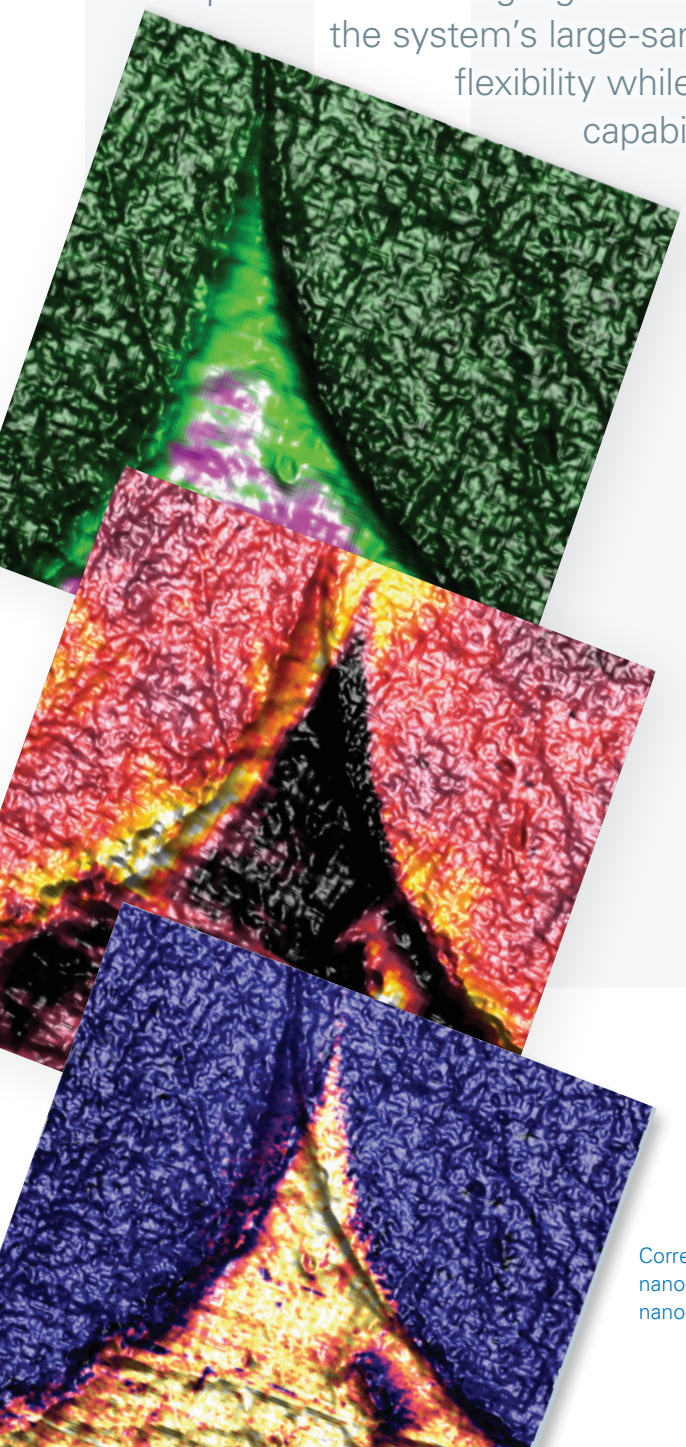
- Highest Performance, Large-Sample nanoIR with PeakForce Property Mapping

Innovation with Integrity

Nanoscale Infrared Imaging

Enabling First-and-Only nanoIR Capabilities and Performance

Bruker's large-sample Dimension IconIR is a combined nanoscale infrared (IR) spectroscopy and scanning probe microscope (SPM) system that incorporates decades of research and technological innovation to deliver unrivalled spectroscopy, imaging, and property mapping performance on a single platform. Featuring high-resolution chemical imaging with monolayer sensitivity, the system's large-sample architecture also provides ultimate sample flexibility while retaining all the industry-best AFM measurement capabilities of the Dimension Icon®.



Dimension IconIR utilizes Bruker-exclusive PeakForce Tapping® nanoscale property mapping and proprietary nanoIR spectroscopy technology to enable correlative microscopy for nanochemical, nanoelectrical, and nanomechanical characterization of materials and active nanoscale systems in electrical or chemically reactive environments.

Only Dimension IconIR delivers:

- High-performance nanoIR spectroscopy with FT-IR correlation, <10 nm chemical resolution, and monolayer sensitivity
- Correlative chemical imaging with PeakForce Tapping nanomechanical and nanoelectrical modes
- Highest Performance AFM imaging and ultimate sample flexibility
- The broadest range of applications accessories and AFM modes

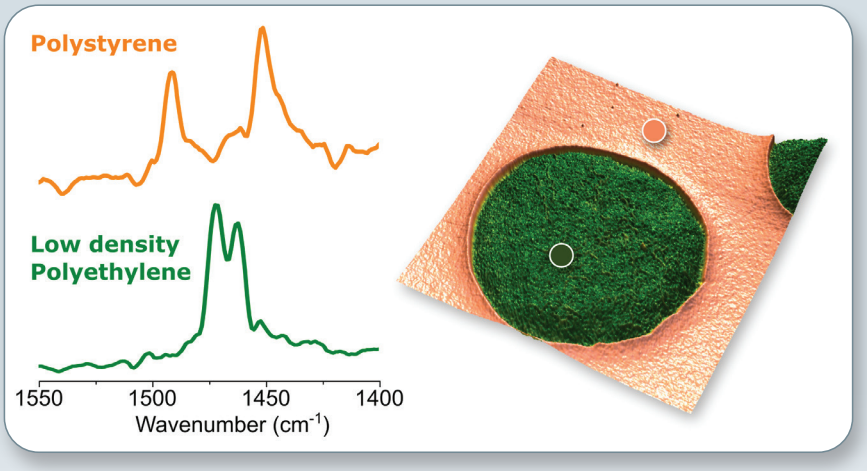
Correlated nanoscale property mapping showing nanoelectrical (PF-KPFM, top), nanothermal (SThM, middle), and nanochemical (AFM-IR, bottom) images of carbon fibers embedded in epoxy resin.

Highest Performance NanoIR Spectroscopy

Bruker is the innovator for AFM-IR based nanoIR spectroscopy with our patented, unique suite of nanoIR modes, providing the highest performance, high-speed, repeatable and accurate spectra that correlate to FT-IR. The variety of modes enable measurement of a wide range of samples for both industrial and academic users.

IconIR delivers:

- Highest performance, rich, detailed spectra with FT-IR correlation achieving single molecular spectroscopy
- Resonance-enhanced AFM-IR, the preferred technique for the nanoIR community, with the largest number of scientific publications



High-quality resonance-enhanced AFM-IR spectra collected at different sites on a PS-LDPE polymer blend, illustrating a high degree of material sensitivity and deeper insight into nanoscale material properties.

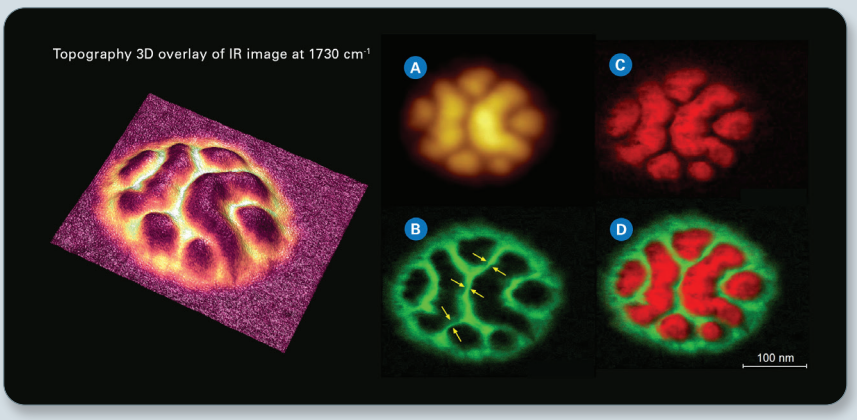
Highest Resolution Chemical Imaging

The Icon's industry-leading AFM performance has enhanced the spatial resolution capabilities of nanoIR technology to provide the ultimate nanoscale chemical imaging system with sub-10 nm chemical resolution and monolayer sensitivity.

Bruker's patented Tapping AFM-IR imaging has been used for a wide range of soft samples, providing consistent, reliable, and high-quality publishable data.

IconIR provides:

- <10 nm chemical spatial resolution for imaging over a broad range of sample types
- Monolayer sensitivity for imaging of thin films and biological structures

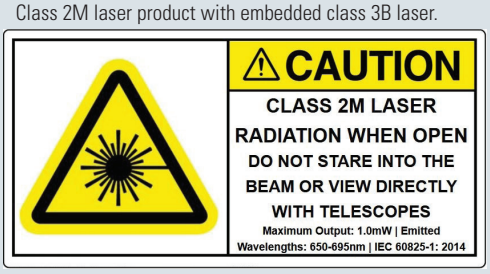


High-resolution chemical imaging of PS-b-PMMA block copolymer in Tapping AFM-IR mode showing sample topography (a); IR images at 1730 (b); and 1492 cm^{-1} (c) highlighting PMMA and PS, respectively. The yellow arrows in panel (b) indicate chemical resolution <10 nm. The overlay image (d) captures the composition map.

Specifications

nanoIR Modes	Resonance-enhanced AFM-IR; Tapping AFM-IR; FASTmapping; Contact AFM-IR
XY Scan Range	90 µm x 90 µm typical; 85 µm minimum with Dimension AFM scanner
Z Range	10 µm typical in imaging and force curve modes; 9.5 µm minimum
AFM Vertical Noise Floor	≤50 pm RMS
Sample Size	150 mm diameter vacuum chuck; <15 mm thick
Large XY Motorized Position Stage	X-Y Travel is 150 mm x 150 mm
Microscope Optics	5 MP digital camera; 180 µm to 1465 µm viewing area; Digital zoom and motorized focus
Acoustic Hood and Isolation Table	Required to meet performance specifications in environments with up to 75 dBC continuous acoustic noise when used with acoustic hood
Purging Hood	Available for purging environment using CDA
Nanomechanical Modes (optional)	PeakForce QNM® and variants; AFM-nDMA; FASTForce Volume™; RampScript™
PeakForce Nanoelectrical Modes (optional)	PeakForce TUNA™; DCUBE-TUNA; PeakForce KPFM™; PeakForce sMIM; DCUBE-sMIM
Nanoelectrical Modes (optional)	CAFM; SSRM; DarkLift
Other Capabilities (optional)	AutoMET® for AFM; Fast Tapping; Fluid Imaging

Class 2M laser product with embedded class 3B laser.



DIMENSION IconIR

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