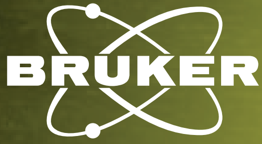


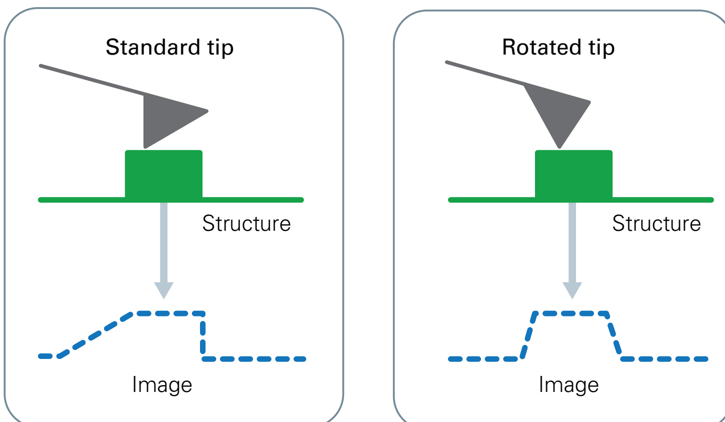
RTESP/RTESPA Silicon AFM Probes

Industry Standard for TappingMode and Non-Contact Imaging Modes

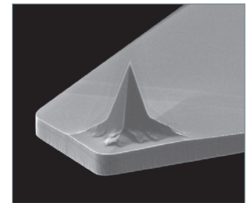
Bruker's RTESP/A high-quality, premium etched silicon probes with rotated tips complement the TESP/A-V2 range of probes. RTESP/A are the most popular probes for tapping mode operation of surface topography with tight dimensional specifications.

The RTESP/A design provides:

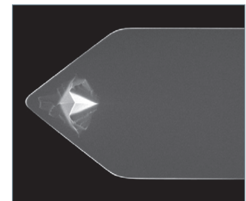
- A rotated probe tip for a more symmetrical representation of sample features
- Tight dimensional specifications for reliable probe-to-probe consistency
- Tight alignment of the tip apex to the cantilever resulting in easier laser positioning over the tip
- Straight cantilever sides for ease of use in handling



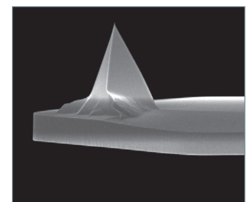
Rotated tips provide more symmetrical imaging of features, such as trenches and step heights over 200 nm tall.



Industry-leading probe shape and quality.



Perfect alignment of the tip apex to the cantilever.



Tight dimensional specifications.

AFM Expertise Built into Every Probe

As the worldwide leader in atomic force microscope (AFM) instrumentation, Bruker has consistently driven and shaped the future of the industry and given us an intimate understanding of the value of each component in a high-performance AFM system. We are now the only major AFM equipment manufacturer that also owns and operates a probes nanofabrication facility (Camarillo, CA, USA).

Our dedication to manufacturing probes, coupled with an unsurpassed expertise in AFM, ensures innovative solutions that include instrument, probe, applications assistance, and service support. This broad experience enables us to design and fabricate a wide range of probe types to directly address the evolving needs of AFM users.

Bruker's performance silicon and silicon nitride probes are ideal for general purpose imaging of a wide range of samples in air and fluid, while our specialty probes are designed for more complex experiments, such as measuring electrical or mechanical properties of materials.

RTESP/RTESPA probe Specifications

Probe Material	RTESP/A Probe		
Material	Single crystal Si		
Shape	Pyramidal		
Resistivity	0.018 Ω-cm		
Dopant	Antimony		
Tip	**RTESP/A Probe**		
Tip Radius of Curvature	8 nm		
Tip Height, H	12.5 µm		
Tip Set Back	9.5 µm		
Tip Front Angle	17.5°		
Tip Back Angle	25°		
Tip Side Angle	20°		
Cantilever	**RTESP-300**	**RTESP-150**	**RTESP-525**
Shape	Rectangular	Rectangular	Rectangular
Cantilever Thickness, t	3.4 µm	1.75 µm	5.75 µm
Length, L	125 µm	125 µm	125 µm
Width, W	40 µm	35 µm	40 µm
Flexural Stiffness, k	40 N/m	5 N/m	200 N/m
Flexural Resonant Frequency, f_o	300 kHz	150 kHz	525 kHz
Chip Body			
Thickness	300 µm	300 µm	300 µm
Reflective Coating (RTESPA)			
Material	Aluminum	Aluminum	Aluminum
Thickness	40 nm	40 nm	40 nm

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