BRUKER

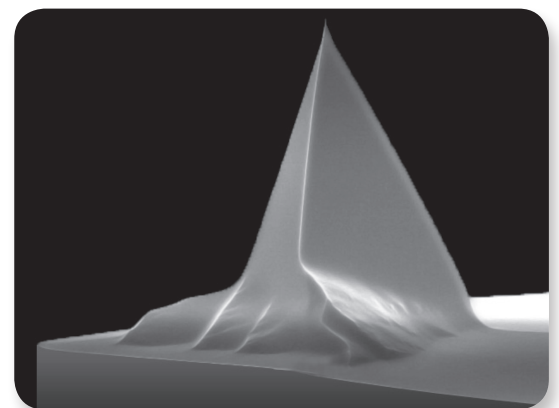
RTESP/RTESPA Silicon AFM Probes

Industry Standard for TappingMode and Non-Contact Imaging Modes

Bruker AFM Probes has introduced an improved version of its popular MPP line of AFM probes. Bruker's new RTESP/A high quality, premium etched silicon probes with rotated tips complement the TESP-V2 range of probes and sets the industry standard for imaging in TappingMode™, non-contact mode in air, force modulation measurements, and contact mode imaging.

The new RTESP/A design provides:

- A rotated probe tip for a more symmetrical representation of sample features
- Tighter dimensional specifications for improved probe-to-probe consistency
- Tighter alignment of the tip apex to the cantilever resulting in easier laser positioning over the tip
- Improved probe quality and aesthetics



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

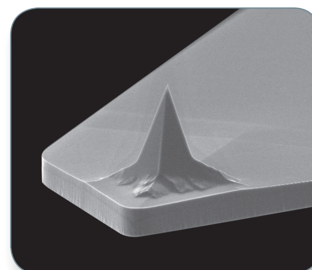
AFM Expertise Built into Every Probe

Bruker is the only AFM instrument company that also manufactures AFM probes and offers unparalleled, comprehensive AFM solutions supported by our highly experienced applications and service staff. Our extensive line of AFM probes include our proprietary PeakForce Tapping® and ScanAsyst® probes, Dimension FastScan® probes, as well as our high-quality silicon and silicon nitride probes, all of which meet the application and performance needs of most AFM users. Our dedication to manufacturing probes, coupled with our expertise in AFM design, ensures that we are uniquely equipped to deliver the most complete AFM solution for the widest variety of applications.

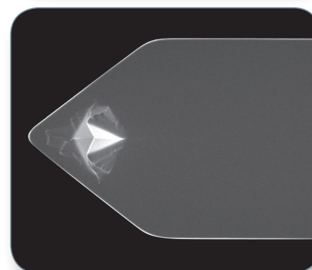
RTESP/RTESPA probe Specifications

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	14 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

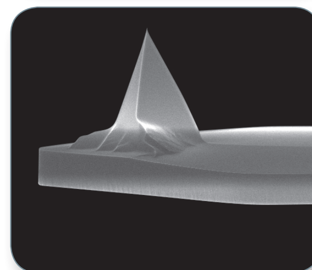
Industry-leading probe shape and quality.



Improved alignment of the tip apex to the cantilever.



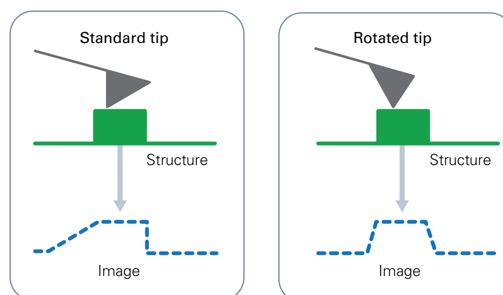
Improved dimensional specifications.



Specification Updates

The legacy MPP probes and the new RTESP/A models are very similar in design, but RTESP/A probes have improvements in cantilever shape quality as well as a tightening of dimensional variation. The minor specification changes include a nominal cantilever thickness increase to 3.8 µm compared to the legacy thickness of 3.5 µm, and the nominal tip height has decreased from 17.5 µm to 12.5 µm. Full specification details can be found on www.brukerAFMprobes.com.

Imaging with Standard AFM Tip vs. Rotated AFM Tip



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