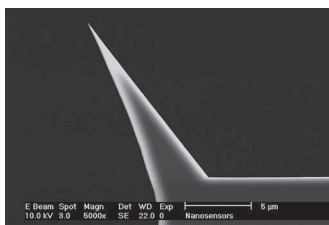


## AdvancedTEC Advanced Tip at the End of the Cantilever®

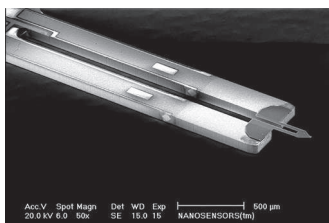
- REAL TIP VISIBILITY FROM TOP
- Monolithic Silicon-SPM-Probe for very high resolution imaging
- Typical tip radius of curvature <10 nm
- Tip height 15 –20 µm
- Aspect ratio of the last 0.5 µm of the tip >4:1 (seen from front and side)
- Half cone angle <12° seen along the cantilever axis and <8° seen from the side
- Tip shape defined by real crystal planes resulting in highly reproducible geometries and extremely smooth surfaces



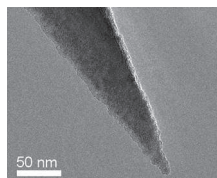
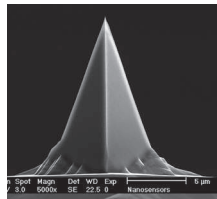
## Akiyama-Probe

Self-sensing and self-actuating probe

- self-sensing and self-actuating probe based on a quartz tuning fork combined with a micromachined cantilever for dynamic mode AFM

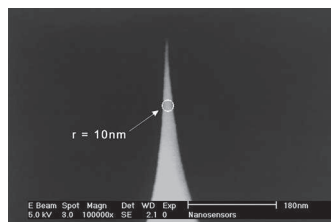


## PointProbe® Plus (PPP)



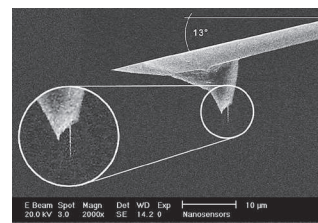
- Minimized variation in tip shape resulting in more reproducible imaging
- Tip radius typically smaller than 7 nm
- Tips are shaped like a polygon based pyramid
- Macroscopic half-cone angles are 20° seen along the cantilever and 25° to 30° when seen from the side
- Also available with rotated tip
- Silicon-SPM-Probe for enhanced resolution imaging
- Rectangular cantilever with trapezoidal cross section
- Monolithic design of support chip, cantilever and tip
- Highly doped single crystal silicon (0.01-0.025 Ωcm)
- Fits to all well-known AFMs
- Alignment grooves on the detector side of the holder chip match alignment ridges of the NANOSENSORS™ alignment chip

## SuperSharpSilicon™ Tip



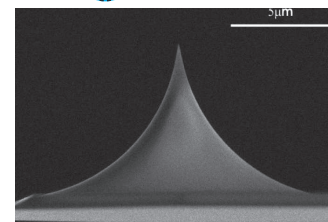
- Probe for high resolution imaging of micro roughness and nanostructures
- Tip radius typically smaller than 2 nm
- Typical aspect ratio at 200 nm from tip apex in the order of 4:1
- Half cone angle at 200 nm from apex <10°

## High Aspect Ratio Probes



- High aspect portion (5:1 or 10:1) longer than 1.5 µm
- Symmetrical when seen from side as well as along the cantilever axis
- Half cone angle typically <5° for AR5 and <2.8° for AR10
- Tip radius typically <10 nm
- Tip of tilt compensated version (AR5T and AR10T) tilted 13° with respect to the center axis of the tip in order to compensate the mounting angle of the AFM head

## uniqprobe®



- Unsurpassed uniformity of cantilever force constant and resonance frequency
- Reduced drift for applications in liquid environments
- Radial symmetric tip with a hyperbolic profile
- Typical tip radius of curvature smaller than 10 nm
- Typical tip height 7 µm

## Coatings

NOTE: Coatings are available for selected setypes only

### Reflex Coating

- Aluminum coating on the detector side of the cantilever
- Enhanced reflectivity of the laser beam

### Gold Coating

- Gold coating on the detector side or on both sides of the cantilever
- Enhanced reflectivity of the laser beam

### Platinum Coating

- Chromium and platinum-iridium5 alloy coating on both sides of the cantilever
- High conductivity allows electrical measurements by using adjusted parameters

### Platinum Silicide

- Highly conductive and wear resistant Platinum Silicide coating on both sides of the cantilever

### Diamond Coating

- Polycrystalline electrically conductive diamond coating on the tip side of the cantilever
- Unsurpassed hardness of the tip

### Magnetic Coating

- Different hard and soft magnetic coatings on the tip side of the cantilever

## PDF Brochure Download



- <https://www.nanosensors.com/brochure>



## Quick Selection Table

	Type	Application	Force Constant / [N/m] (nominal)	Resonance Frequency / [kHz] (nominal)	Coatings	Special Tip Versions
Contact	qp-CONT	Biological / Fluid-Tapping Lateral / Friction Force	0.1	30	Reflex (partial Au)	circular symmetric
	qp-SCONT	Soft Contact / Force Curves	0.01	11	Reflex (partial Au)	circular symmetric
	qp-BioT 2 cantilevers	Biological / Fluid-Tapping	CB1: 0.08 CB2: 0.3	CB1: 20 CB2: 50	Reflex (partial Au)	circular symmetric
	ATEC-CONT	Contact Mode	0.2	15	PtIr5, Au	visible tip
	PPP-CONT	Contact Mode	0.2	13	Reflex (Al), PtIr5, Au	PtSi, DT, CDT, RT, PL2, PLC, TL
	PPP-CONTSC	Contact Mode (short cantilever)	0.2	25	Reflex (Al), PtIr5, Au	---
Tapping / Non-Contact	qp-HBC	ScanAsyst**/Peak Force Tapping™	0.5	60	Reflex (Al)	circular symmetric
	qp-fast 3 cantilevers	Fast-/ High-speed scanning Soft Tapping/ NC/ AC/ Tapping	CB1: 30 CB2: 15 CB3: 80	CB1: 420 CB2: 250 CB3: 800	Reflex (Au)	circular symmetric
	qp-BioAC 3 cantilevers	Biological / Fluid-Tapping	CB1: 0.1 CB2: 0.06 CB3: 0.3	CB1: 50 CB2: 30 CB3: 90	Reflex (partial Au)	circular symmetric (rounded version available)
	ATEC-NC	Non-Contact / Tapping Mode	45	335	PtIr5, Au	visible tip
	PPP-NCR	Non-Contact / Tapping Mode (high frequency)	26	300	Reflex (Al)	---
	PPP-NCH	Non-Contact / Tapping Mode (high frequency)	42	330	Reflex (Al), PtIr5, Au	PtSi, SSS, RT, AR5, AR5T, AR10, AR10T, DT, CDT, PL2, PLC, TL
	PPP-NCL	Non-Contact / Tapping Mode (long cantilever)	48	190	Reflex (Al), PtIr5, Au	SSS, AR5, DT, CDT, PL2, PLC, TL
	PPP-NCST	Non-Contact / Tapping Mode (soft tapping)	7.4	160	Reflex (Al), PtIr5, Au	---
	PPP-SEIH	Non-Contact / Tapping Mode (Seiko Non-Contact Mode)	15	130	Reflex (Al)	SSS
Special	ATEC-FM	Force Modulation Mode	2.8	85	PtIr5, Au	---
	PPP-EFM	Electrostatic Force Microscopy	2.8	75	PtIr5	---
	PPP-FM	Force Modulation Mode	2.8	75	Reflex (Al), Au	PtSi, SSS, DT, CDT, PL2, PLC, TL
	PPP-LFM	Lateral / Friction Force Microscopy	0.2	25	Reflex (Al)	---
	PPP-MFMR	Magnetic Force Microscopy	2.8	75	Hard Magnetic & Reflex (Al)	SSS
	PPP-LM-MFMR	Magnetic Force Microscopy (low momentum)	2.8	75	Hard Magnetic & Reflex (Al)	---
	PPP-LC-MFMR	Magnetic Force Microscopy (low coercivity)	2.8	75	Soft Magnetic & Reflex (Al)	---

This list is not complete. For the full list of available AFM probes please check out our website.

\*ScanAsyst® and Peak Force Tapping™ are trademarks of Bruker Corp.

### Special Developments List:

You have AFM application requirements that cannot be met by standard AFM probes?

<https://www.nanosensors.com/special-developments-list>

