WM20PTD – Technical Specifications

WM20PTD Probes are used for imaging at higher speeds in photothermal off-resonance tapping (WaveMode) and dynamic mode (CleanDrive). The probes provide highest resolution down to the atomic structure and allow nanomechanical measurements on stiffer samples such as soft metal alloys. The probes are compatible with air and liquid environments. The reflex side of the cantilever is coated with metal layers optimized for efficient photothermal excitation. The coating is highly reflective for standard optical beam deflection AFMs.

Cantilever Specifications			
Shape	Triangular		
Material	Silicon Nitride		
Coating (Top side)	Metal coating, optimized for photothermal excitation and laser readout.		
	Min.	**Typical**	Max.
Length (µm)	25	**28**	31
Width (µm)	32	**35**	38
Thickness (µm)	0.54	**0.60**	0.66
Resonance frequency in air (kHz)	900	**1200**	2100
Spring constant (N/m)	9	**20**	27

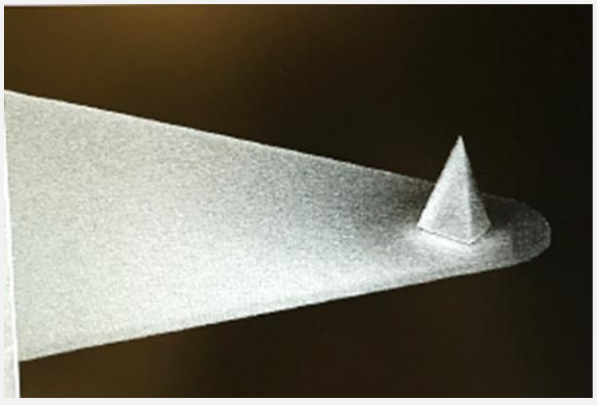

Figure 1: SEM image of a WM20PTD AFM probe.

Tip Specifications	
Shape	Pyramidal
Height (µm)	3 - 8
Tip radius (nm)	Typically ≤ 5 nm
Material	Si
Coating	None

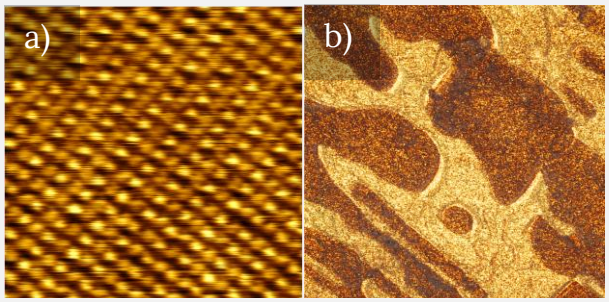

Figure 2: a) AFM topography map of calcite atomic lattice in ultrapure water acquired in CleanDrive dynamic mode and b) elasticity map of a SnPb metal alloy measured with WM20PTD and DriveAFM in WaveMode showcasing the broad range of applications of this probe.

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