

Application Examples:

Sense 100

Date: 18th August 2026

1. Overview

Sense 100 is NuNano's new probe for high-resolution imaging of soft and biological samples in liquid. It is most closely analogous to the AC40-TS BioLever mini probe formally manufactured by Olympus.

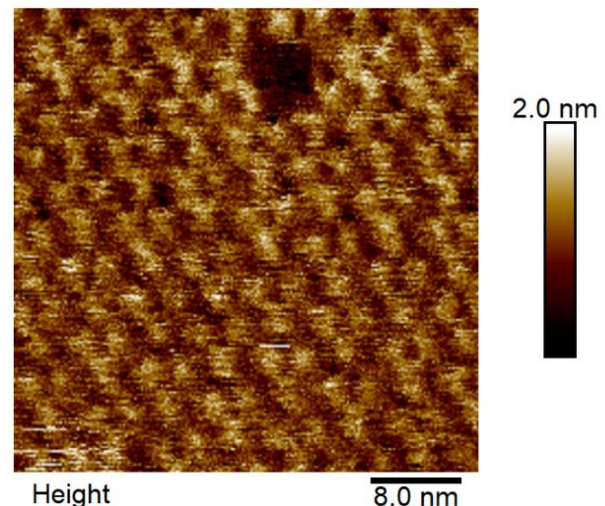
This document showcases some of the applications that these probes have been deployed in.

NB. In cases where the user refers to Sense 110 (beta), this refers to the same product, just under a different working name prior to product release.

2. Application Examples

Imaging the cytoplasmic face of purple membrane

User	Dr Nic Mullin, University of Sheffield, UK
Instrument	Bruker FastScan (also on JPK Nanowizard 3)
Drive mechanism	Piezo-driven tapping mode in liquid
Sample	Purple membrane from Halobacterium Salinarum in buffer

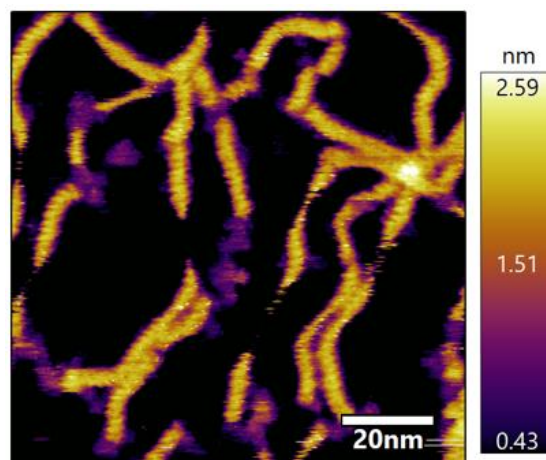


User comments:

"I've used AC40s quite a lot, and if I was blindfolded, given these, and told that they were AC40s I wouldn't bat an eyelid. The probes behaved very well on the whole. They were softer than the first batch and very consistent - of the 3 I used all were below 0.1 N/m (0.0866, 0.0961 and 0.0984 N/m) using the Sader method in air and nominal dimensions. All were 90-100 kHz in air and around 30 kHz in liquid. There's very little in that space around 0.1 N/m with a usefully high resonant frequency (and so lowish thermal noise) where the cantilever backside is big enough to do force curves on a "regular" AFM without interference. These fit that perfectly."

Imaging the cytoplasmic face of purple membrane

User	Dr Hiroaki Sugasawa, Oxford Instruments KK, Japan
Instrument	Vero ES
Drive mechanism	Piezo-driven tapping mode in liquid
Sample	DNA on mica

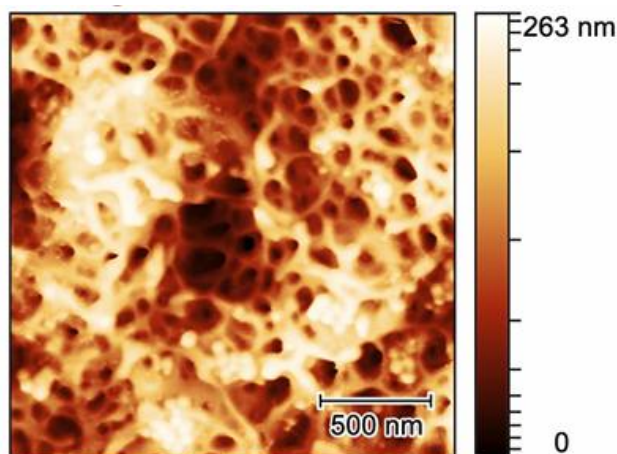


User comments:

"The sample was imaged in liquid by SENSE100 probes with small amplitude at 1 nm. We could visualize DNA double helix by piezo drive using Vero ES. I tried 3 probes but I didn't see any artifact like double tip".

Imaging self-assembled glycoproteins on HOPG

User	Dr Bizan Balzer, University of Freiburg, Germany
Instrument	Cypher ES
Drive mechanism	blueDrive in water
Sample	Porous structures on HOPG, generated from an amphiphilic three-arm block copolymer (AB)3-BCP by applying a self-assembly and nonsolvent-induced phase separation (SNIPS) protocol

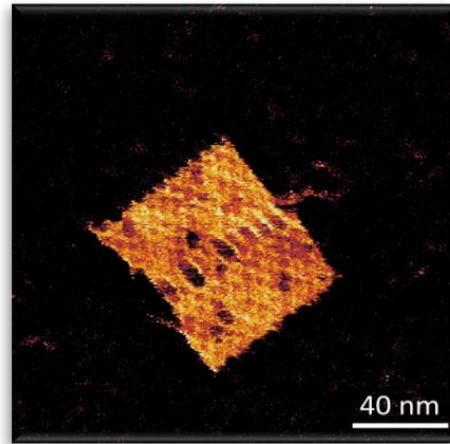


User comments:

"The performance of Sense 110 beta is very good in water. In particular, the phase images are exceptionally good. Filter 0.1x recommended for blueDrive. Sense 110 beta 2nd type is less sensitive to the blueDrive and shows a less steep drop of the amplitude towards lower frequency with respect to the resonant peak. The performance of both Sense 110 beta is at least as good as for AC40TS. For blueDrive filter 0.1x the resonant peak shows a steep increase/decrease of the amplitude on both sides. Thus, the drive frequency can be set left or right of the resonant peak. For the latest generation of the AC40TS that was not given, in particular towards lower frequency below the resonant peak."

Imaging DNA origami

User	Hans Gunstheimer, Nanosurf AG, Switzerland
Instrument	Drive AFM
Drive mechanism	WaveMode in liquid
Sample	DNA origami



User comments:

"Measurement of DNA Origami in buffer works in WaveMode. No significant variations observed within batch. No coating degradation observed".