

# High-Performance STM Probes

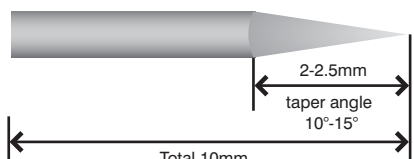
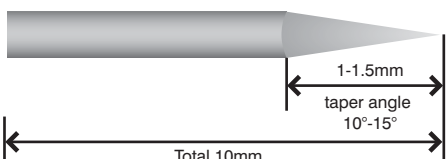
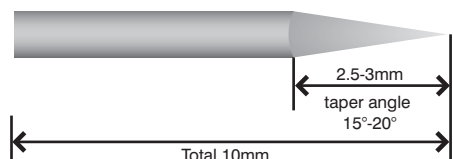
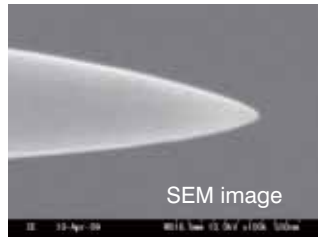
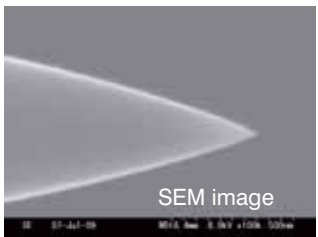
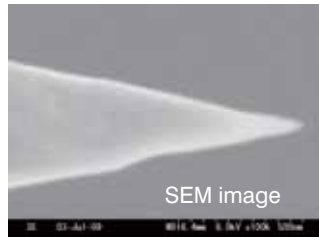
## **NEW** Nickel, Platiniridium Probes



SEM image of tip of nickel probe

The stability of STM measurements is greatly influenced by the quality of the probe. Namely, good STM measurement results often cannot be obtained due to variances in the probe tip diameter, contamination of the probe surface, or cleaning process errors.

UNISOKU has successfully developed nickel and platiniridium STM probes using an electropolishing method that is able to solve these problems by yielding fine tip diameters with minimal contamination. Our metal probes allow you to experience a higher level of stability than was possible in the past. Our conventional tungsten probes are also still available.

Tungsten probes Type:P-100WS	<b>NEW</b> Ni Probes Type:P-100Ni(S)	<b>NEW</b> Platiniridium probes Type:P-100PtIr(S)
<p>Shape : cone shape Wire rod : polycrystalline tungsten 0.25mm diameter Curavant radius of a tip : &lt;50nm</p> 	<p>Shape : cone shape Wire rod : polycrystalline Ni 0.25mm diameter Curavant radius of a tip : &lt;30nm</p> 	<p>Shape : cone shape Wire rod : polycrystalline Platiniridium 0.5mm diameter Grind process : Electro-polishing after mechanical grind Curavant radius of a tip : &lt;30nm</p> 
 <p>SEM image</p>	 <p>SEM image</p>	 <p>SEM image</p>

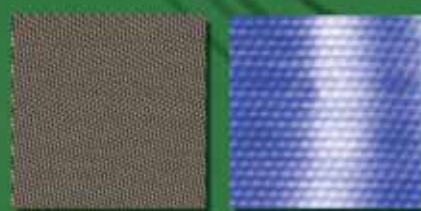
**Enables reliable STM measurement without requiring troublesome probe treatment\*2**

UNISOKU has confirmed that atomic images can be reliably obtained, without the need for high-temperature heat treatment, when observing HOPG in air and gold in an ultra-high vacuum.

\*2: Applies only to nickel and platiniridium probes.

However, when observing active surfaces, heating is recommended for degassing.

- Noble metal (Au, Ag) coatings for nickel probes are being developed. Contact UNISOKU for details.
- Due to the detrimental accumulation of carbon that accompanies SEM observation, inspected probes should not be used for STM observations.



Example STM image of HOPG with nickel probe

Example STM image of Au (111) with nickel probe

## Carbon Nanotube- tipped Nickel Probes for STM

Mass production techniques are currently being developed to ensure a stable supply of carbon nanotube- tipped nickel probes. Contact us for details.

