Scanning Probe Microscope

System Introduction

The Multi Mode Scanning Probe Microscope (SPM) performs the full range of atomic force microscopy (AFM) and scanning tunneling microscopy (STM) to measure surface characteristics like topography, elasticity, friction, adhesion and magnetic/electrical fields. The short mechanical path length between probe tip and sample enables very fast scan rates with utmost precision.

System Options

- Tapping Mode AFM
- Contact Mode AFM
- Phase Imaging
- Magnetic Force Microscopy (MFM)
- Scanning Tunneling Microscopy (STM)
- Nano indenting/Scratching

Multi-Mode Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
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<tbody>
<tr>
<td>Scan dimension</td>
<td>125 µm x 125 µm</td>
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<tr>
<td>Noise</td>
<td>&lt;0.3Å RMS in vertical (Z) dimension w/ vibration isolation</td>
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<tr>
<td>Sample size</td>
<td>≤10 mm diameter; ≤3 mm thick</td>
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<td>Tip/cantilever holders</td>
<td>– tapping mode/contact mode in air (std);</td>
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AFM images of 3 nm Ni over layer on TiO₂ (110) surface after 700°C annealing for 10 mins, Ni cluster can be observed at the step edge (J.W. Chai et. al).

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