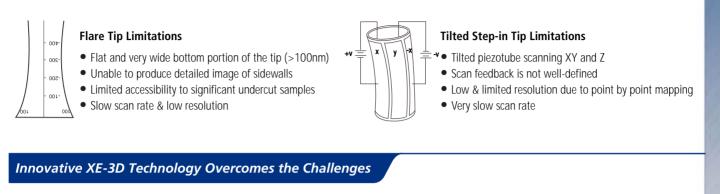
# New 3D-AFM for High Resolution Sidewall Imaging

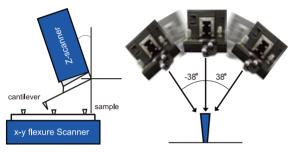


For more information: info@parkAFM.com www.parkAFM.com

Nanotechnology Solutions Partner

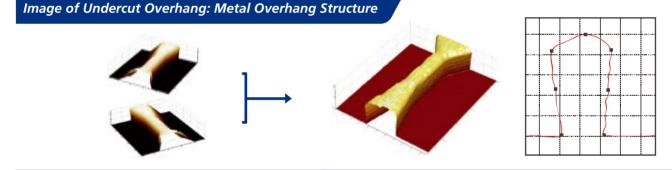
# Flare Tip Limitations





### High Resolution Access to Undercut and Sidewall

- Two independent XY and Z flexure scanners for sample and tip
- Z-Scanner Tilted sideways from -38 to +38
- Access to overhang sidewall
- Use of normal high aspect ratio tips for high resolution imaging

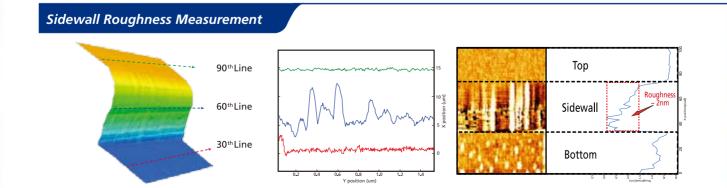


# 3D View of High Resolution Sidewall Scan

#### **Complete 3D Metrology of Sidewall**

• High Resolution Sidewall Roughness Measurement

- Critical Angle Measurement of Sidewalls
- Critical Dimension Measurements of Vertical Sidewalls



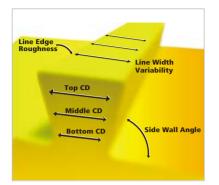
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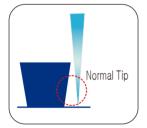
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### Undercut & Sidewall Characterization

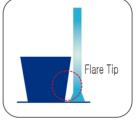


- Need to measure the sidewall roughness, angle and the width of bottom, middle, and top
- Characterization of soft photoresist surface by non-destructive imaging

## Challenges in Accessing Sidewall



Conventional AFM cannot get access to the sidewall, especially for overhang features



Other methods, such as the flare tips, are insufficient in obtaining the high resolution details of the sidewall due to its dull tip. For a deeper overhang, the bottom width cannot be reached at all.

### For Undercut Characterization and Sidewall Metrology

Continuing the company's impressive track record of developing optimized solutions, Park Systems introduces XE-3DM, an automatic AFM which revolutionizes the way trench, overhang, and undercut features are scanned and analyzed. The new XE-3DM also makes possible to image soft photoresist structures without deforming or damaging it.



#### **Advanced Inline Automation**

- Automated reference marker detection
- Automatic Data Acquisition and Analysis of Trench, Overhang, and Undercut Features
- High Resolution Access to Undercut and Sidewall
- Non-Destructive CD and Sidewall Measurements by True Non-Contact Mode
- · Soft Photoresist Structures Can Be Imaged Non-Destructively
- Critical Angle Measurement of Sidewalls
- Automatic Tip Exchange (optional)