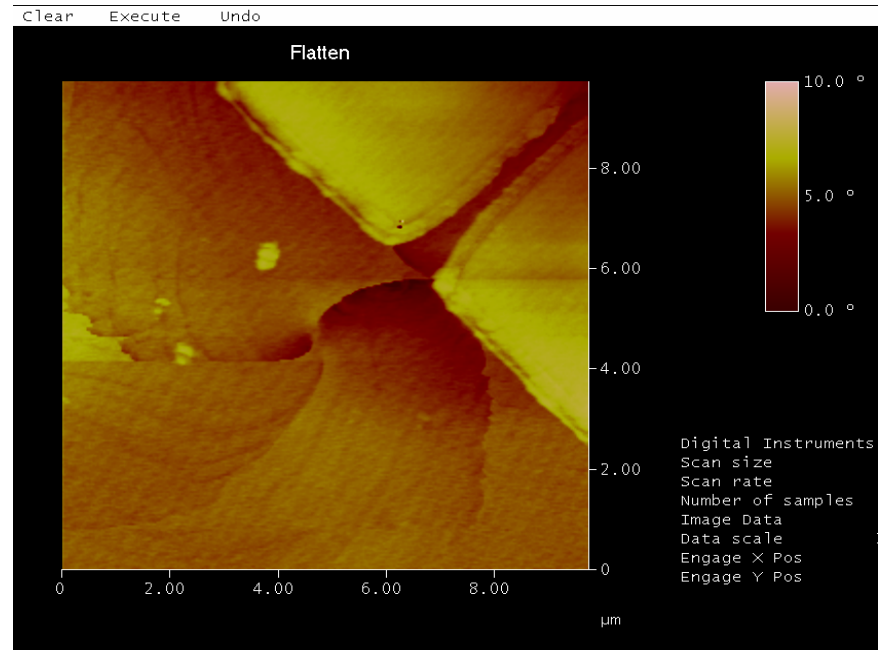
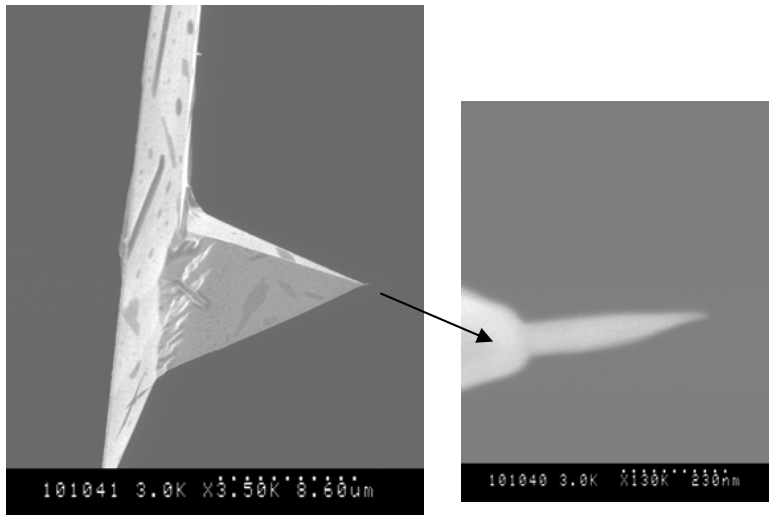


Examining Domain Walls in Sub-micron Permalloy Wires

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NNIN Facility utilized: Characterization Facility & Nanofabrication Center

- Fabricating low moment tips for magnetic force microscopy (MFM)
 - ◆ Carbon spike tips are grown using a focused SEM beam. Tips are ion milled to localize the magnetic moment to the area under the spike tip.
 - ◆ Imaging of domain walls in sub-micron nanowires requires a low moment to leave domains unperturbed.
- Magnetic image from permalloy structure made using e-beam lithography and sputter deposition
 - ◆ A large domain wall is observed in the middle of the image.
 - ◆ A second domain wall forms in the wire where the wire and the larger “block” meet.



In MFM image yellow (no magnetic response) in top right corresponds to Si substrate, darker red (attractive response) corresponds to permalloy.