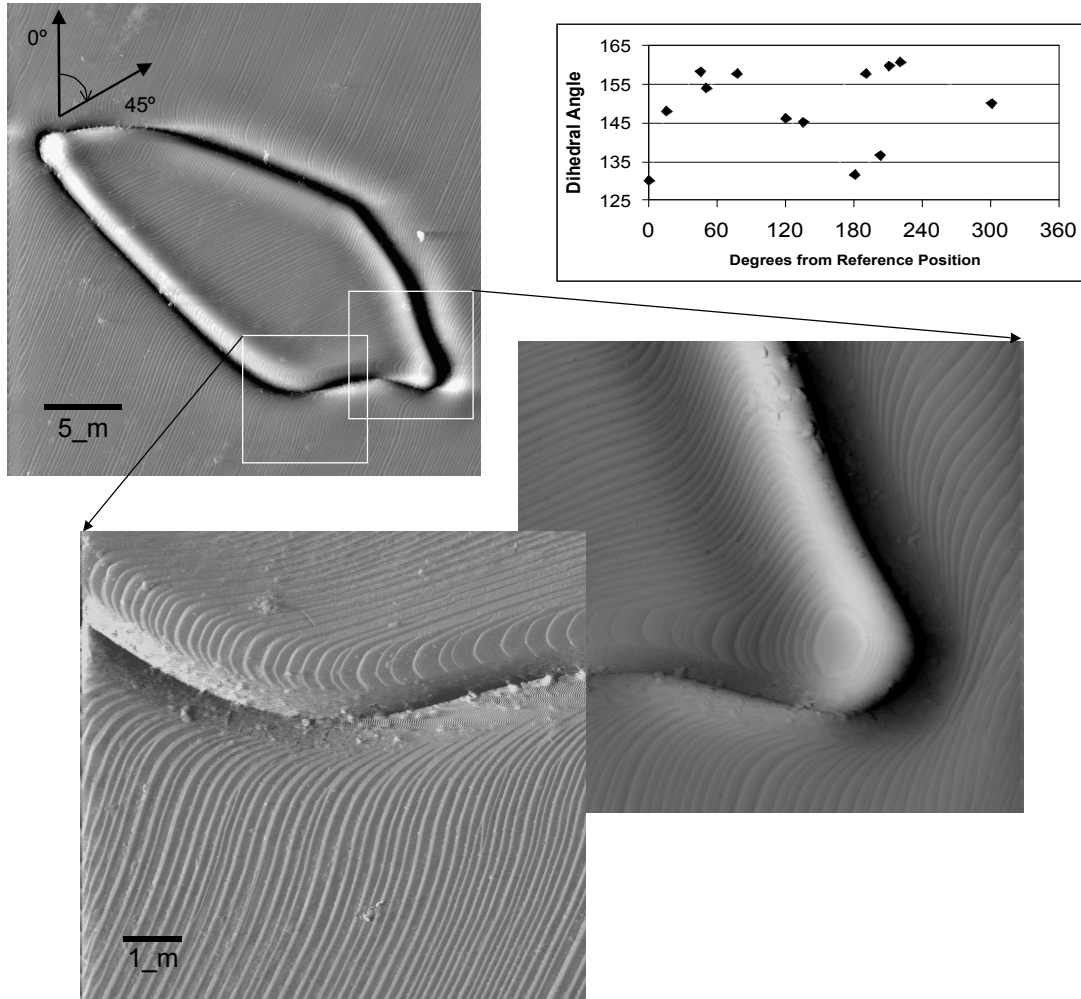


Faceted Island Grain in Thermally Grooved Al_2O_3



AFM error images show a faceted island grain in an Al_2O_3 sample that was thermally grooved in air at 1547°C . The width and dihedral angle of the groove vary widely about the circumference of the grain due to differences in the orientation of the grain boundary plane and the anisotropic surface energies. In the graph, the groove dihedral angle is plotted as a function of position, with the angle measured at a clockwise rotation from the upper left corner. Curved facets following the groove contour are easily identifiable.

Herbert M. Miller III and Gregory S. Rohrer
Department of Materials Science and Engineering
Carnegie Mellon University
Pittsburgh, PA 15213

Acknowledgements:

Shen Dillon, Martin P. Harmer, Department of Materials Science and Engineering, Lehigh University

**Supported by the MRSEC program of the NSF
under Award Number DMR-0079996**

Classification: Scanning Probe Microscopy