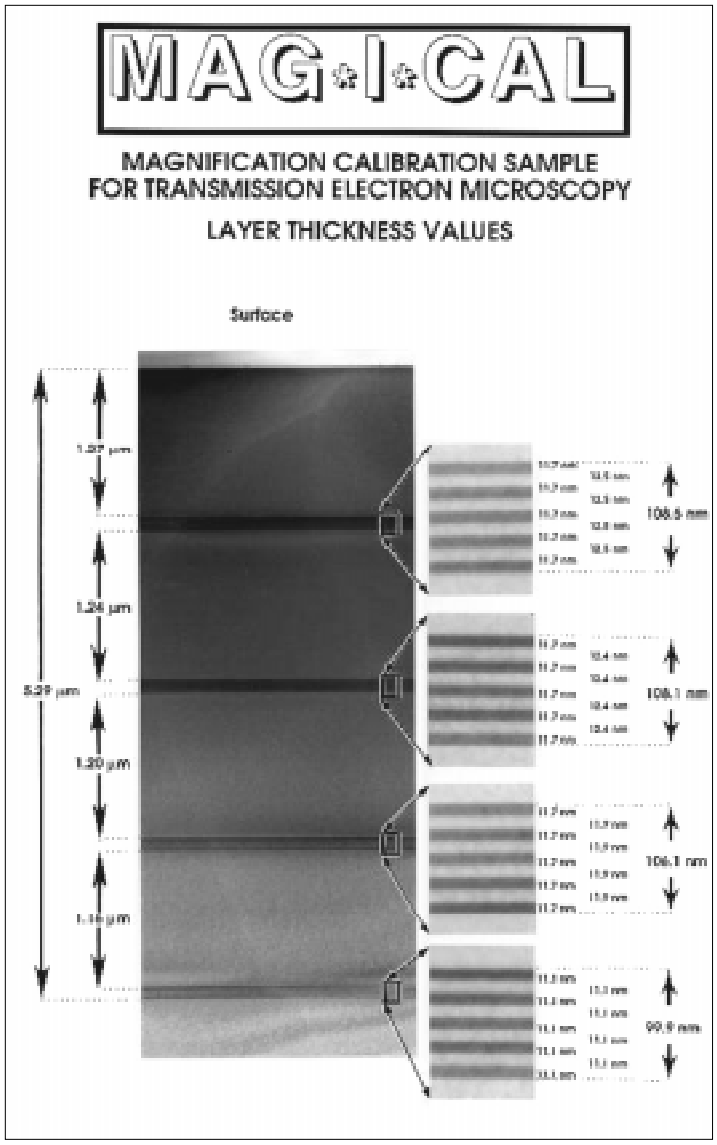
Catalog Number: 40701

MAG*I*CAL™

TEM Calibration Standard

TEM Sample Preparation



MAG*I*CAL™
TEM Calibration Standard

MAG*I*CAL™ is a TEM calibration standard that performs all of the three major instrument calibrations for a TEM: image magnification; camera constant for indexing diffraction patterns; and image / diffraction pattern rotation for relating crystal directions to features in the image. MAG*I*CAL™ consists of an electron transparent cross-sectional TEM sample made from a MBE grown, single-crystal semiconductor wafer. When the calibration structure is viewed in a TEM, it appears as a series of light and dark layers where the layer thicknesses are accurately known. The calibrated thickness measurements of these light (silicon) and dark (SiGe alloy) layers are based on careful TEM measurements of the <111> lattice spacing of silicon which is visible on the calibration sample itself, and are supported by x-ray diffraction measurements. The layer spacings are designed so that the sample can be used to calibrate the entire magnification range in a TEM - from 1,000X to 1,000,000X. As the sample is also a single crystal of silicon, the calibrations requiring electron diffraction information such as the camera constant and image / diffraction pattern rotation can also be performed easily and unambiguously. One single calibration sample can therefore be used to provide all three of the major TEM instrument calibrations at all magnifications and all camera lengths.

Distributed By:
Ladd Research
83 Holly Court
Williston, VT 05495
Tel: (802) 658-4961
FAX: (802) 660-8859
email: sales@laddresearch.com
Web: https://www.laddresearch.com