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Resistivity of Endotaxial Silicide Nanowires Measured with STM Nanoprobe PETER BENNETT, Arizona State University, SAMUEL TOBLER, Dixie State College, Utah — We present in situ UHV measurements of the resistivity of self-assembled endotaxial $FeSi_2$ nanowires (NWs) on Si(110) using a variable-spacing two-point method with an STM tip and a fixed contact pad. Boundary scattering causes the resistivity to vary with NW width as: $\rho_{NW} = 200$ uohmcm at 12 nm and 300 uohmcm at 2 nm. The relative weakness of boundary scattering is attributed to a high concentration of point defects in the bulk $FeSi_2$ structure. It is remarkable that the defect concentration persists in very small structures, and is not changed by surface oxidation.

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