Sulfur Enrichment on Alloy 22
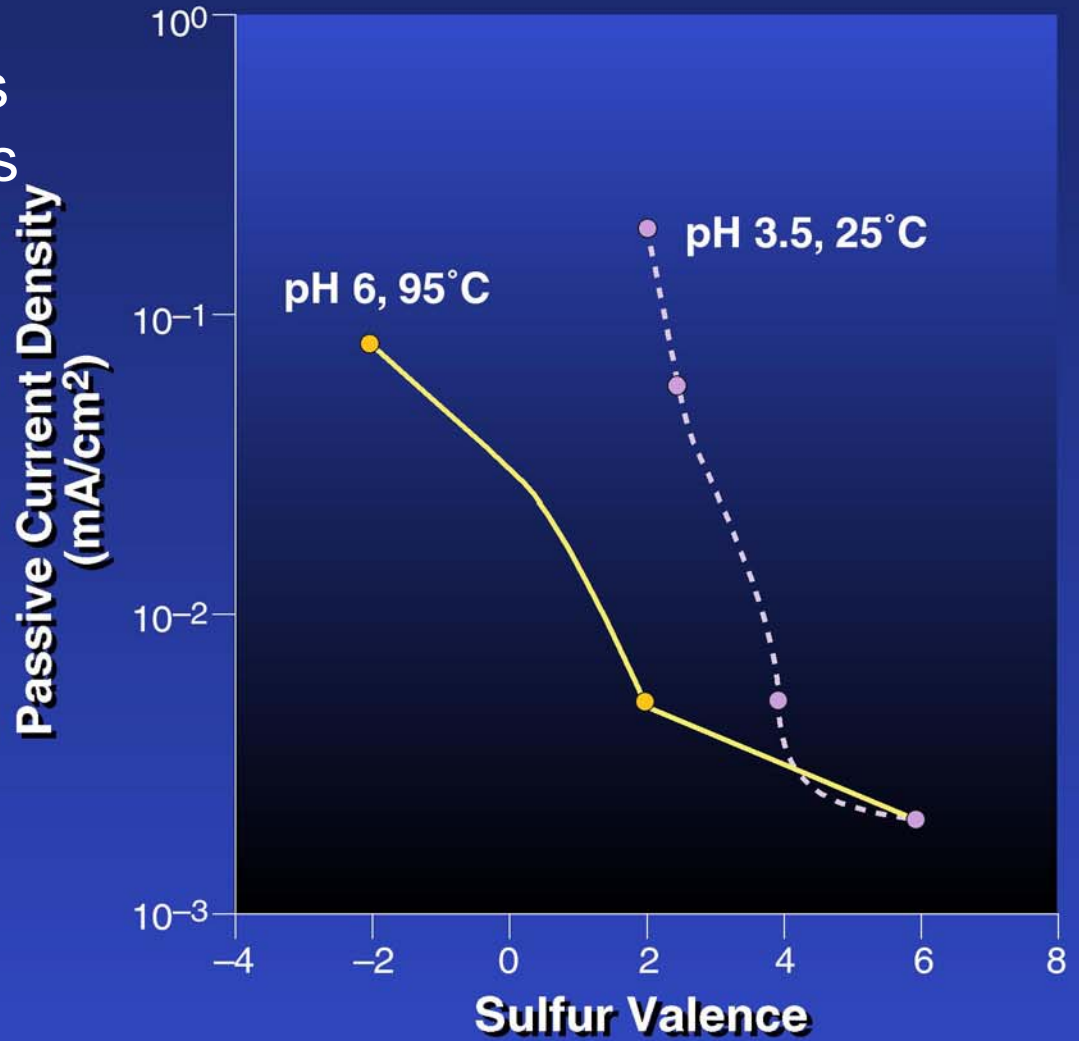
Russell H. Jones, GT-Engineering

Don Baer and Chuck Windisch, Pacific Northwest National Laboratory
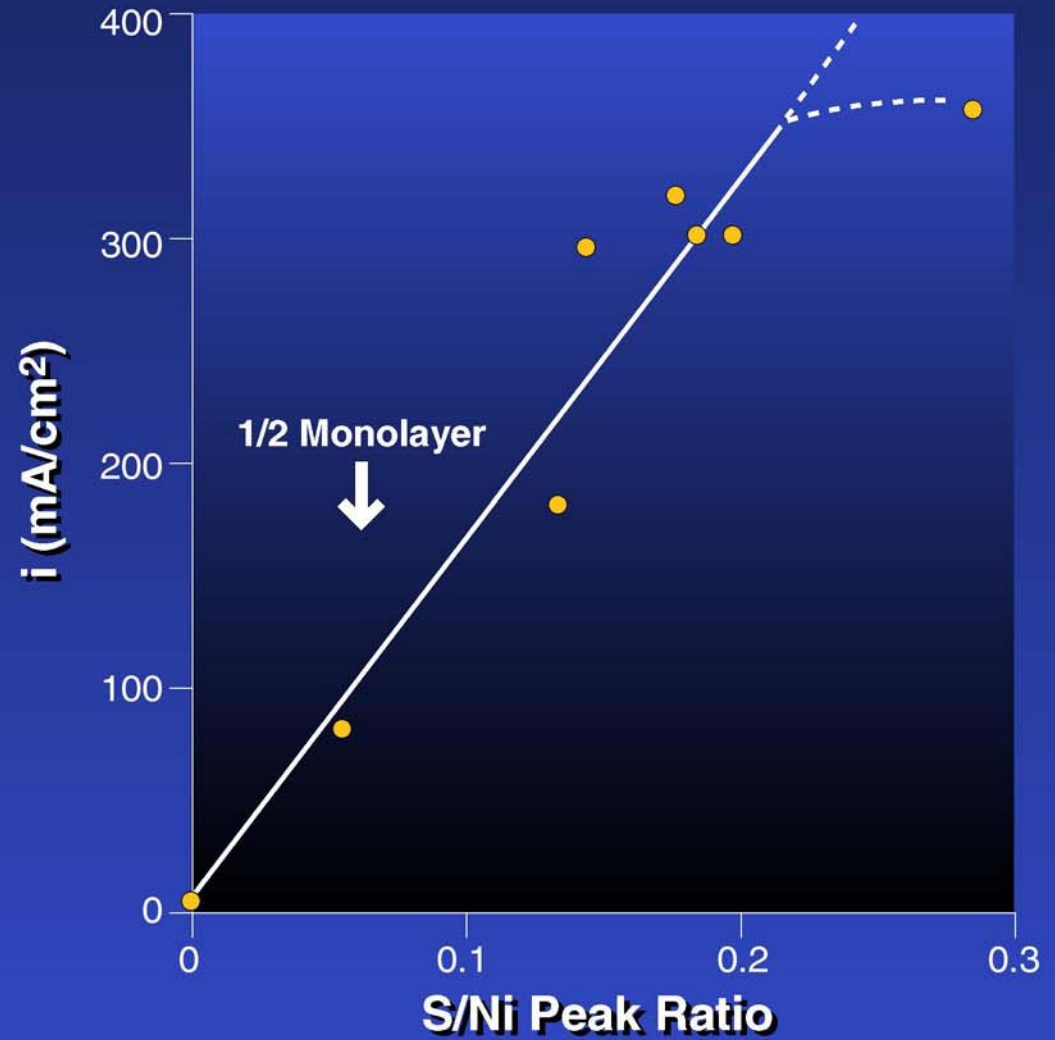
# Passive Current Density versus Sulfur Valence for Alloy 600 in 10⁻² M Solutions of Sulfur Oxyanions

Z. Fang and R.W. Staehle,
Corrosion, Vol. 55, (1999), p. 355.

Steady State Anodic
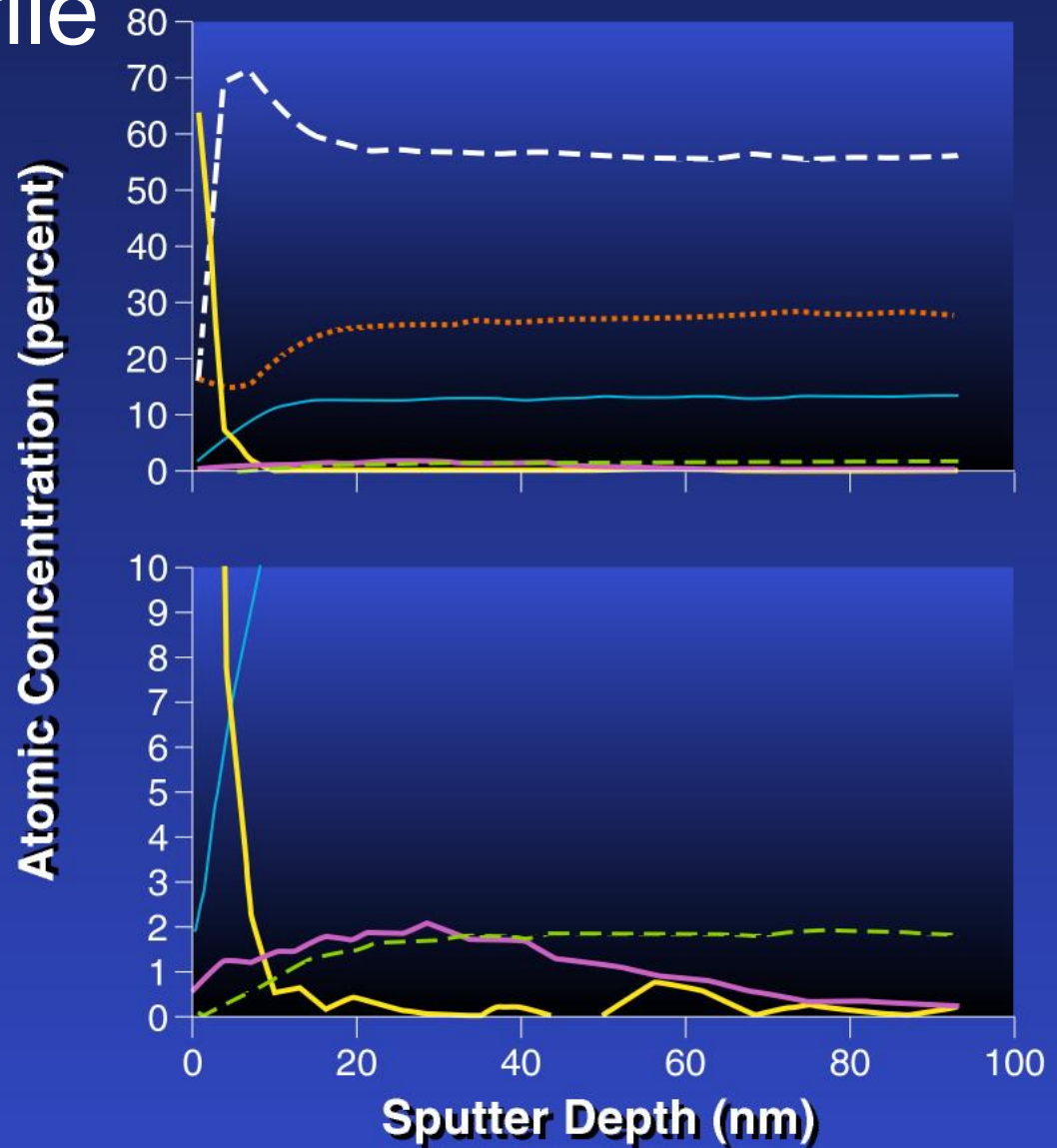Current Density at
0 mV (SCE) on Ni in 0.5 N
Nitric Acid at
25°C

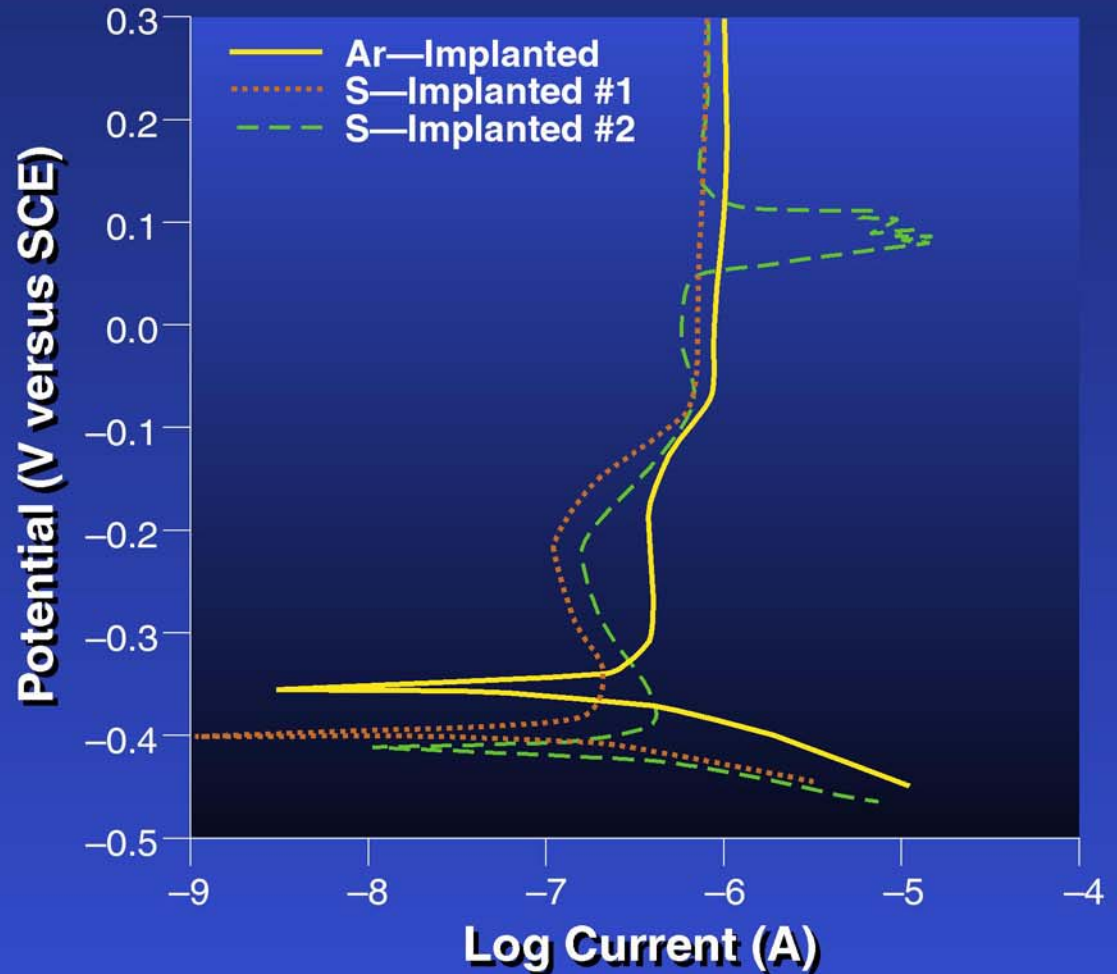D.R. Baer and M.J. Danielson,
J. Vac. Sci. Tech. A, 5(4) (1987)
p. 1147

# The Loss of Surface Sulfur Induced by Molybdenum: Experimental and Theoretical Curves
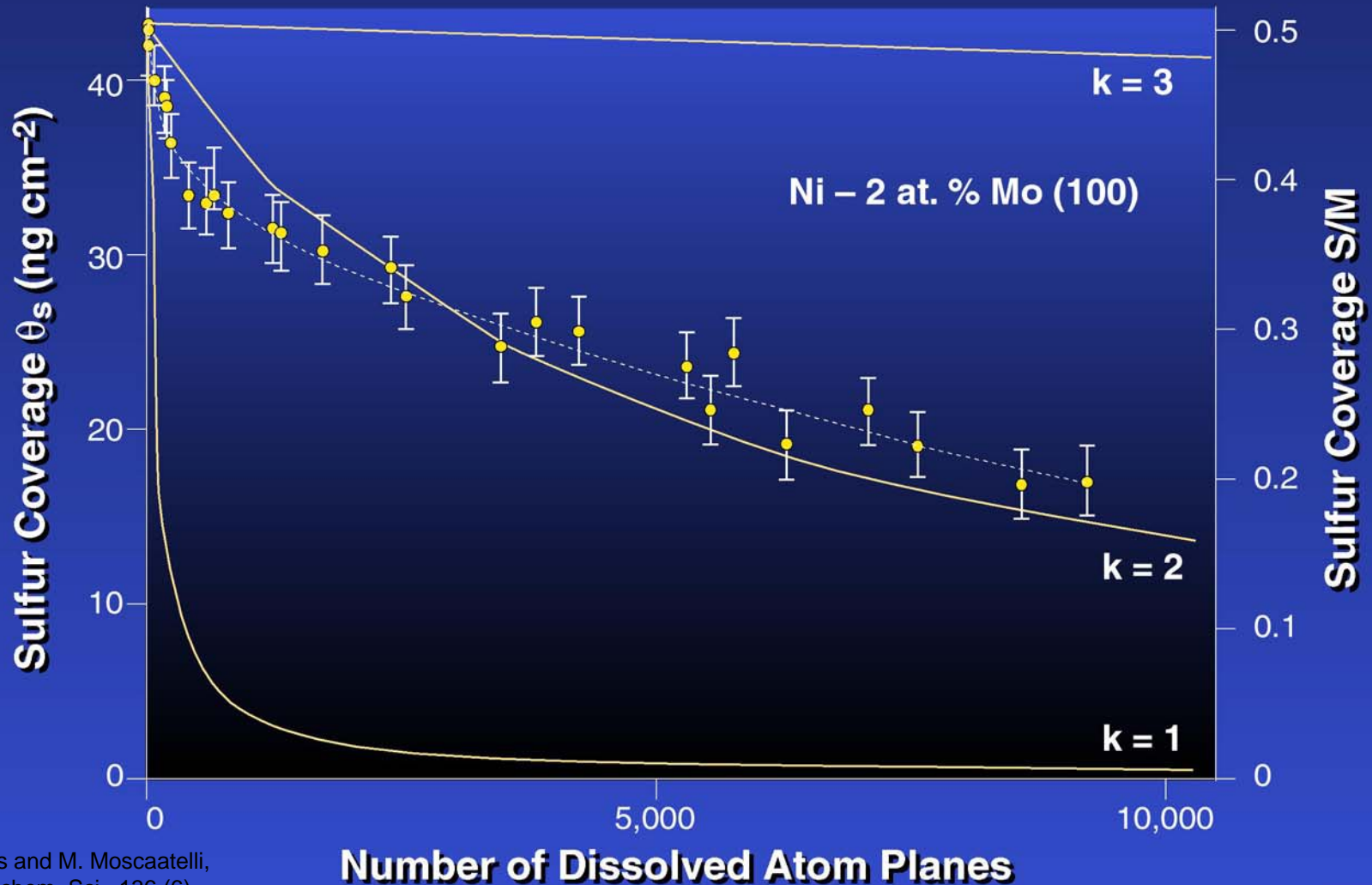
XPS Depth Profile for As-received Alloy 22 Sample

Potentiodynamic Polarization Curves for Alloy 22 Implanted with Argon and Sulfur and Subsequently Sputtered to Implant Maximum in De-aerated 1 M NaCl Buffered to pH 3.67 with KHP

Potentiodyanamic Polarization Curves for Alloy 22 Implanted with Argon and Sulfur and Subsequently Sputtered to the Implant Concentration Maximum in De-aerated 1 M NaCl Solutions Buffered to pH 8.15 with Borate
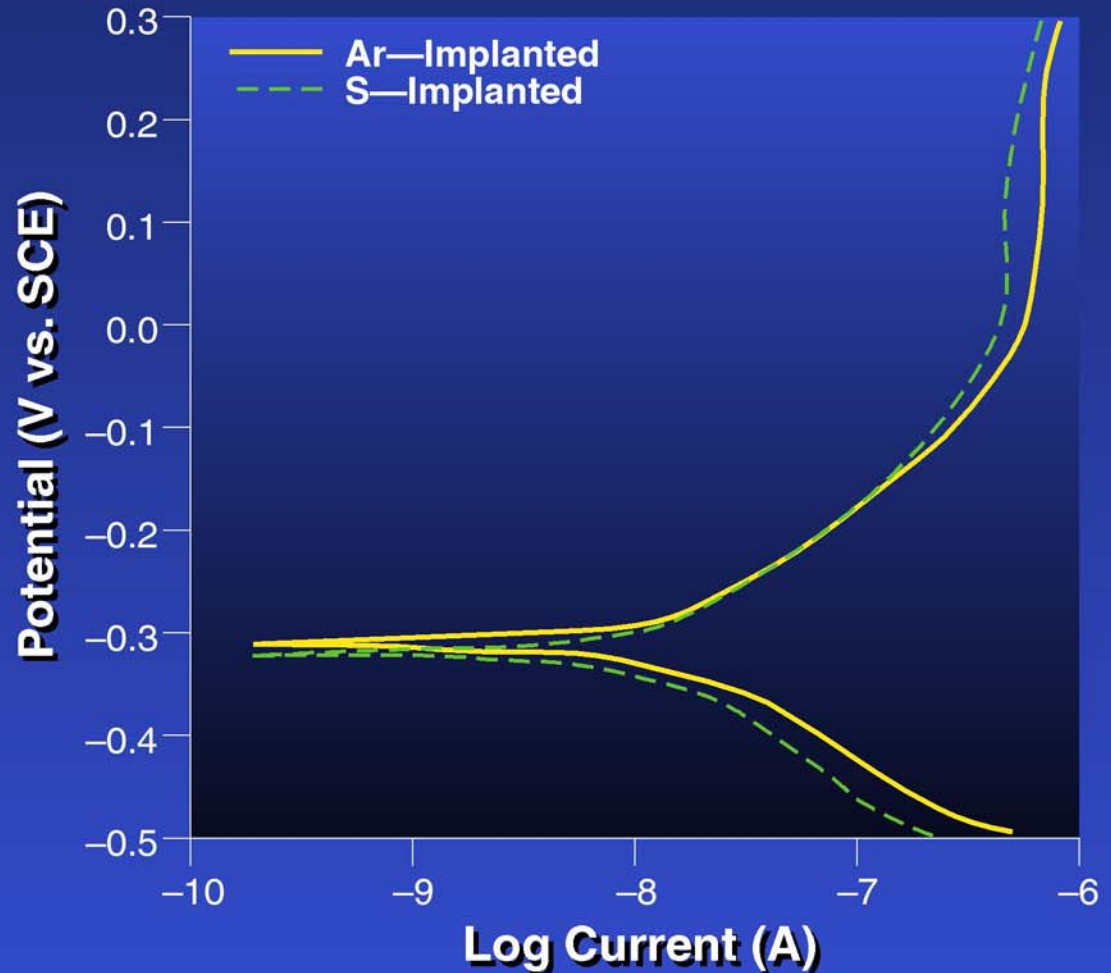
Profile Depth Showing the Ratio of Sulfur to Metal Concentrations as a Function of Depth for a Control Sample (S-Implant) and S-Implanted Sample Exposed to Solution for 29 Days. An Excess of Sulfur was Accumulated in the Surface of the Sample After 29 Days of Corrosion.