

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Study of Oxidation of Silicon by X-ray Photoelectron Spectroscopy¹ A.R. CHOURASIA, WILLIAM JOHNSTON, R.L. MILLER, RYAN JACOB, Department of Physics, Texas A&M University-Commerce — The oxidation of silicon has been investigated using the technique of x-ray photoelectron spectroscopy. The silicon substrates have been exposed to oxygen at a partial pressure of 5×10^{-6} Torr. The exposure was done at substrate temperatures of 100 °C, 200 °C, 300 °C, 400 °C, 500 °C, and 600 °C, The substrates have been analyzed by angle resolved XPS. The magnesium anode (energy = 1253.6 eV) have been used for this purpose. The silicon 2p and oxygen 1s core level regions have been investigated. The spectral data have been recorded at 10 °, 20 °, 40 °, 60 °, 80 °, and 90 ° take-off angles. The QUASES software has been used to determine the thickness of the oxide layer formed on the substrates. The experimental data on the thickness of the oxide layer has been correlated with that obtained from the QUASES model.

¹Work supported by Research Corporation and Faculty Enhancement Research Grant, TAMU-C.

A. R. Chourasia
Department of Physics, Texas A&M University-Commerce

Date submitted: 08 Nov 2006

Electronic form version 1.4