

Diffuse x-ray reflectivity study of graded interface roughness in Mo/Si multilayers

K.-B. Lee^{a,b}, D. R. Lee^a, Y. J. Park^b, Y. H. Jeong^a and H. Takenaka^c

^a*Department of Physics, POSTECH, Pohang 790-784, Korea*

^b*Pohang Accelerator Laboratory, POSTECH, Pohang 790-784, Korea*

^c*NTT Advanced Technology Corporation, Tokyo 180, Japan*

Abstract

Diffuse x-ray reflectivity intensities are measured to characterize interface morphologies of Mo/Si multilayers. The parameters related to interface morphologies can be obtained by fitting the measured intensities within the distorted wave Born approximation in such a way that intermixing widths of the graded interfaces, correlated interface roughness amplitudes and vertical correlation lengths are obtained. Comparison between the parameters for as-grown Mo/Si multilayer samples and annealed ones will be presented.