

Abstract Submitted  
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**Inter-diffusion of copper and hafnium as studied by x-ray photoelectron spectroscopy**<sup>1</sup> JUSTIN PEARSON, A. R. CHOURASIA, Texas A&M University-Commerce — The Cu/Hf interface has been characterized by x-ray photoelectron spectroscopy. Thin films (thicknesses ranging from 100 nm to 150 nm) of hafnium were deposited on a silicon substrate. About 80 nm of copper was then deposited on such samples. The e-beam method was used for the deposition. The samples were annealed for 30 min at temperatures of 100, 200, 300, 400, and 500C. The inter-diffusion of copper and hafnium was investigated by sequential sputter depth profiling and x-ray photoelectron spectroscopy. The interdiffusion in each case was analyzed by the Matano-Boltzmann's procedure using the Fick's second law. The interdiffusion coefficients and the width of the interface as determined from the data have been correlated with the annealing temperature.

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