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The effect of impurities and incident angle on the secondary electron emission of Ni(110)[1] HADAR LAZAR, University of Chicago, MARLENE PATINO, University of California, Los Angeles, YEVGENY RAITSES, Princeton Plasma Physics Laboratory, BRUCE E. KOEL, Department of Chemical and Biological Engineering, Princeton University, CHARLES GENTILE, ELIOT FEIBUSH, Princeton Plasma Physics Laboratory — The investigation of secondary electron emission (SEE) of conducting materials used for magnetic fusion devices and plasma thrusters is important for determining device lifetime and performance. Methods to quantify the secondary electron emission from conducting materials and to characterize the effects that impurities and incident angles have on secondary electron emission were developed using 4-grid low energy electron diffraction (LEED) optics. The total secondary electron yield from a Ni(110) surface was continuously measured from the sample current as surface contamination increased from reactions with background gases in the ultrahigh vacuum chamber. Auger electron spectroscopy (AES) and temperature programmed desorption (TPD) were used to examine the composition and impurity levels on the Ni(110) surface. The total secondary electron yield was also measured at different incident angles.

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