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Interfacial Core-Level Shifts at W(110)-Based Bimetallic Interfaces D. MARK RIFFE, Utah State University — Due to their unique chemical, electronic, and magnetic properties, bimetallic epitaxial systems continue to receive a great deal of attention. A unique probe of these interfaces is core-level photoemission spectroscopy: by measuring shifts in core-level binding energies for interfacial atoms (compared to atoms in the bulk solid), qualitative information about atom-specific electronic structure can be inferred. In addition to this qualitative information, the interfacial binding-energy shifts have a thermodynamic interpretation that provides quantitative information about inter-metallic solution energies. Here we discuss W $4f_{7/2}$ core-level binding-energy shifts of the first layer of W(110) for a number of W(110)-M bimetallic layers, where M includes Na, K, Cs, Ba, Cr, Mn, Fe, Ni, Pd, Ag, Pt, and Au. Overall, the W interfacial core-level shifts correlate well with the difference in solution energies of Re in M and W in M [A. R. Miedema *et. al*, CALPHAD **1**, 341 (1977)], in agreement with the partial-shift theory of Nilsson *et. al* [Phys. Rev. B **38**, 10357 (1988)].

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