

Title:	Adsorption on CdTe and HgTe Surfaces
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Abstract:	<p>SYNOPSIS. To investigate the change in the surface properties of cadmium telluride when an atom is adsorbed onto a cadmium or mercury telluride when an atom is adsorbed onto a cadmium or mercury terminated (111) surface, a model for chemisorptions on narrow gap semiconductors is set up. Since the properties of the free surface are sensitive to the bulk bands, realistic bulk band calculation using the Empirical Tight Binding (ETB) method in a 16*16 sp³ orbitals and spin basis for the anion and cation are carried out; the bulk band structure is recovered by parameterizing the matrix elements of the ETB Hamiltonian. The surface is formed by introducing an infinite repulsive potential localized within a layer of anions, Results are presented for the changes in the density of states upon formation of the surface and when a model atom is adsorbed on the surface.</p>