



Figure 11-10 The average potential energy for a conduction electron in a metal. The potential is a well of depth V_0 that rises rapidly near the metal boundaries to zero. The energy levels increase in density in proportion to $\mathcal{E}^{1/2}$, and are filled up to the Fermi energy \mathcal{E}_F . The work function is w_0 , and $V_0 = w_0 + \mathcal{E}_F$.