



Figure 9.8. A possible mechanism for surface ($\equiv\text{S}$) catalysis of Mn(II) (Davies, 1985). The surface is partly covered by OH^- ions, which are the sites of reactions. The steps are: (a) Mn^{2+} complexation on the surface by an exchange reaction with two H^+ ions; (b) formation of a $\text{Mn}^{2+}-\text{O}_2$ complex on the surface; (c) transfer of electron from Mn^{2+} to O_2 , forming a superoxide- Mn(III) complex; and (d) further electron transfer to create the oxidized manganese product.