

energy of activation

of an electrode reaction

This is defined by the equation:

$$U^\ddagger = -R T \left(\frac{\partial(\ln I_0)}{\partial T^{-1}} \right)_{p,c,p,\dots}$$

where I_0 is the exchange current. At any overpotential η it is defined by the equation:

$$U^\ddagger(\eta) = -R \left(\frac{\partial(\ln(|I|))}{\partial T^{-1}} \right)_{p,\eta,c,p,\dots}$$

where I is the current passing from the electrode into the electrolyte.

Source:

PAC, 1974, 37, 499 (*Electrochemical nomenclature*) on page 516