

$$E = E^0 + \frac{RT}{z_e F} \ln \left(\frac{a_{ox}}{a_{red}} \right)$$

$$\Leftrightarrow E - E_0 = \frac{RT}{z_e F} \ln \left(\frac{a_{ox}}{a_{red}} \right)$$

$$\Leftrightarrow (E - E_0) \cdot \frac{z_e F}{RT} = \ln \left(\frac{a_{ox}}{a_{red}} \right)$$

$$\boxed{\exp(\ln(x)) = x}$$

$$\Leftrightarrow \exp \left((E - E_0) \frac{z_e F}{RT} \right) = \frac{a_{ox}}{a_{red}}$$

$$\boxed{\frac{1}{e^x} = e^{-x}}$$

$$\Leftrightarrow \exp \left((E_0 - E) \frac{z_e F}{RT} \right) = \frac{a_{red}}{a_{ox}}$$

$$\Leftrightarrow \boxed{a_{ox} \cdot \exp \left((E_0 - E) \frac{z_e F}{RT} \right) = a_{red}}$$

$$E_{AB}^{chip} = -\frac{3}{2} \frac{I_A \cdot I_B}{I_A + I_B} \cdot \frac{\alpha^A \alpha^B}{R^6}$$

$\boxed{\text{s. Aufg. 25}}$

$$\Leftrightarrow E_{AB}^{chip} = -\frac{3}{2} \frac{1}{\frac{1}{I_A} + \frac{1}{I_B}} \frac{\alpha^A \alpha^B}{R^6}$$

$$\Leftrightarrow \left(\frac{1}{I_A} + \frac{1}{I_B} \right) E_{AB}^{chip} = -\frac{3}{2} \cdot \frac{\alpha^A \alpha^B}{R^6}$$

$$\Leftrightarrow \frac{1}{I_A} + \frac{1}{I_B} = -\frac{3}{2} \cdot \frac{\alpha^A \alpha^B}{R^6 E_{AB}^{chip}}$$

$$\Leftrightarrow \frac{1}{I_B} = -\frac{3}{2} \cdot \frac{\alpha^A \alpha^B}{R^6 E_{AB}^{chip}} - \frac{1}{I_A}$$

$$\Leftrightarrow \boxed{I_B = \frac{1}{-\frac{3}{2} \cdot \frac{\alpha^A \alpha^B}{R^6 E_{AB}^{chip}} - \frac{1}{I_A}}}$$