

②  $M_2 = \frac{m_2 \cdot L_k}{m_2 \cdot L_k} = \frac{q \cdot V \cdot \Delta T}{m_2 \cdot L_k}$

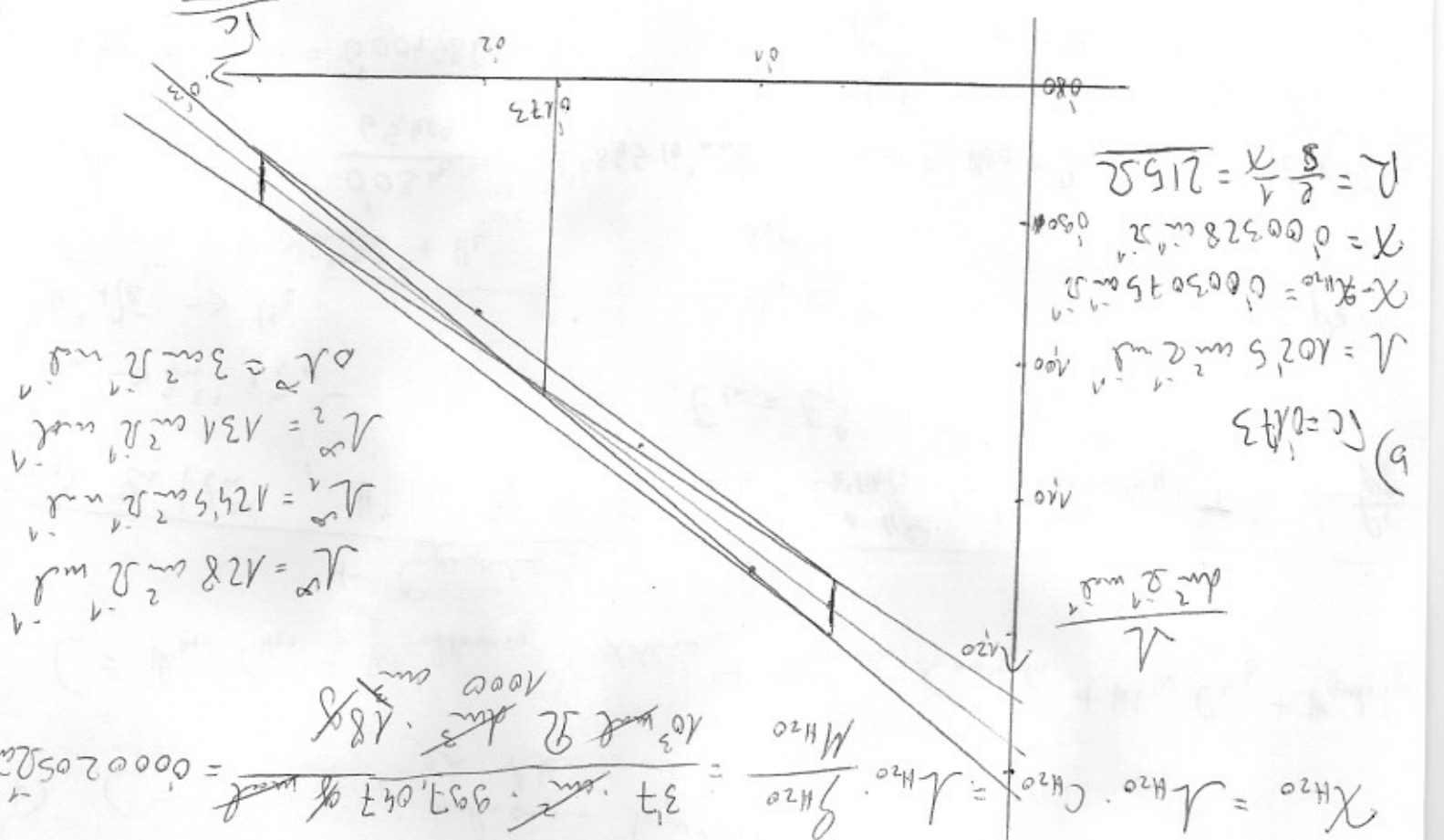
$A = (4.5 \pm 0.6) \cdot 10^{-4} \text{ m}^{-3/2} \cdot \Omega^{-1} = 4.5 \cdot 10^{-4} \text{ m}^{-3/2} \cdot \Omega^{-1}$

$\Delta A = 0.2 \text{ dm}^{3/2} \cdot \Omega^{-1} = 0.2 \cdot 10^{-5} \text{ m}^{-3/2} \cdot \Omega^{-1}$

$A_2 = \frac{0.86 - 1.205}{0.2828 - 0.0707} = 1.6269 \text{ dm}^{3/2} \cdot \Omega^{-1}$

$A_1 = \frac{0.895 - 1.16}{0.2828 - 0.0707} = 1.2494 \text{ dm}^{3/2} \cdot \Omega^{-1}$

$A = \frac{0.875 - 1.18}{0.2828 - 0.0707} = 1.438 \text{ dm}^{3/2} \cdot \Omega^{-1} = 4.55 \cdot 10^{-4} \text{ m}^{-3/2} \cdot \Omega^{-1}$



$A^0 = 128 \text{ cm}^2 \cdot \Omega^{-1}$   
 $A^1 = 124.5 \text{ cm}^2 \cdot \Omega^{-1}$   
 $A^2 = 131 \text{ cm}^2 \cdot \Omega^{-1}$   
 $\Delta A^0 = 3 \text{ cm}^2 \cdot \Omega^{-1}$

$b) \quad R = 0.173$   
 $R = \frac{S}{2} \cdot \frac{1}{R} = 215 \Omega$   
 $X = 0.00328 \text{ cm}^2 \cdot \Omega^{-1}$   
 $X - X_{H_2O} = 0.003075 \text{ cm}^2 \cdot \Omega^{-1}$   
 $V = 102.5 \text{ cm}^2 \cdot \Omega^{-1}$

$X_{H_2O} = L_{H_2O} \cdot C_{H_2O} = L_{H_2O} \cdot \frac{M_{H_2O}}{V_{H_2O}}$   
 $= 37 \cdot \frac{18}{1000} = 0.666$

R	$X_{H_2O}$	C	$X - X_{H_2O}$	$L \cdot C_{H_2O}$
88	0.007214	0.08	0.007010	87.6
173	0.004086	0.04	0.003881	37.0
302	0.002341	0.02	0.002136	106.8
520	0.0013596	0.01	0.001155	115.5
895	0.00078	0.005	0.00028	118

$X = \frac{S}{2} \cdot \frac{1}{R}$

①  $\frac{S}{2} = \frac{11 \text{ cm}^2}{2} = 5.5 \text{ cm}^2$

$$\textcircled{4} a) \quad \Delta H_f = \frac{Q_R}{m_s} = \frac{C \cdot \Delta T_r}{m_s} = \frac{Q_{sp} \cdot \Delta T_r}{\Delta T_m \cdot m_s} = \frac{Q_{sp}^{voide} \cdot \Delta T_r}{\Delta T_m \cdot m_s} =$$

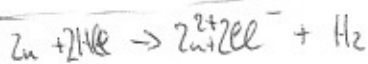
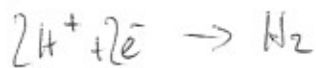
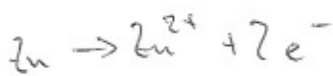
$$= \frac{M_{\text{dodane vode}} \cdot C_p \cdot \Delta T_{\text{OH}} \cdot \Delta T_r}{\Delta T_m \cdot m_s} = \frac{5,274 \text{ g} \cdot 4,1818 \text{ J} \cdot 26,2 \text{ K}}{0,4 \text{ K} \cdot 7,3562 \text{ g}} =$$

$$\Delta H_f = 68,73 \frac{\text{J}}{\text{g}}$$

b)  $C = \frac{\partial Q}{\partial T}$  je kalorična kapaciteta potrebna da se segrejeva za 1K

$$C = M_{\text{H}_2\text{O}} \cdot C_{\text{H}_2\text{O}} + M_{\text{selovine}} \cdot C_{\text{stehlin}} + M_{\text{mesala}} \cdot C_{\text{mesala}} + M_{\text{H}_2\text{g}} \cdot C_{\text{H}_2\text{g}} + M_{\text{...}} + C_{\text{pasode}}$$

$$\textcircled{5} a) \quad \text{Zn} | \text{Zn}^{2+}, \text{H}^+ | \text{H}_2, \text{Pt} \quad b) \quad E_H = E_{\text{H}^+/\text{H}_2, \text{Pt}}^{\ominus} + \frac{RT}{F} \ln a_{\text{H}^+} - \frac{RT}{2F} \ln p_{\text{H}_2}$$



$$E_{\text{Zn}} = E_{\text{Zn}^{2+}}^{\ominus} + \frac{RT}{2F} \ln a_{\text{Zn}^{2+}}$$

$$a_{\text{H}^+} \approx C_{\text{H}^+}$$

$$p_{\text{H}_2} = p$$

$$a_{\text{Zn}^{2+}} \approx C_{\text{Zn}^{2+}}$$

$$n_{\text{Zn}} = \frac{m_{\text{Zn}}}{M_{\text{Zn}}} = \frac{0,03 \text{ g}}{65,409 \text{ g}} = 4,5865 \cdot 10^{-4} \text{ mol}$$

$$n_{\text{H}^+} = n_{\text{H}_2} - 2n_{\text{Zn}} = 0,000827 \text{ mol}$$

$$C_{\text{H}^+} = 0,000827 \text{ mol/l}$$

$$C_{\text{Zn}^{2+}} = \frac{n_{\text{Zn}}}{V} = 0,004586 \text{ mol/l}$$

$$C_{\text{H}_2} = 0,000827 \text{ mol/l}$$

$$E = E_H - E_{\text{Zn}} = -E_{\text{Zn}^{2+}}^{\ominus} + \frac{RT}{2F} \ln \frac{a_{\text{H}^+}^2 \cdot p_{\text{H}_2}}{a_{\text{Zn}^{2+}} \cdot p_{\text{Zn}}}$$

$$= 0,762 \text{ V} + \frac{8,314 \text{ J} \cdot 293 \text{ K}}{2 \cdot 96487 \text{ AS}} \ln \frac{0,000827^2 \cdot 1013}{0,004586 \cdot 98132}$$

$$E = 0,651196 \text{ V}$$

$$c) \quad E^1 = -E_{\text{Zn}^{2+}}^{\ominus} + \frac{RT}{2F} \ln \frac{a_{\text{H}^+}^2 \cdot p_{\text{H}_2}}{a_{\text{Zn}^{2+}} (p_{\text{Zn}} - \gamma \cdot p_{\text{H}_2\text{O}})} \quad p_{\text{H}_2\text{O}} = \gamma \cdot p_{\text{H}_2\text{O}}^{\ominus}$$

$$E^1 = 0,6513934 \text{ V}$$

$$\Delta E = 1,97 \cdot 10^{-4} \text{ V}$$

kakvo tudi 2 diferencialon

$$dE = -\frac{RT}{2F} \frac{dp_{\text{H}_2}}{p_{\text{H}_2}} = \frac{RT}{2F} \frac{\gamma \cdot p_{\text{H}_2\text{O}}}{p_{\text{Zn}}} = 1,95 \cdot 10^{-4} \text{ V}$$

$$dp_{\text{H}_2} = -\gamma \cdot p_{\text{H}_2\text{O}}^{\ominus}$$