

Dotaznice

$$65 \quad p = 50 \text{ mm Hg} = 500 \text{ mm Hg}$$

$a = 0.05 \text{ mm}$ - polomjer centra

$b = 1.5 \text{ mm}$ - polomjer cilindra

$V_0 = 2000 \text{ V}$ - redni mjeran

$V_t = 1000 \text{ V}$ - plinsko počinjanje

$$\beta = 0.11 \cdot 10^{-13} \text{ cm}^2/\text{V}$$

Plinsko počinjanje = ? $\rightarrow m = ?$

$$\ln m = 2 \cdot \sqrt{\frac{N \cdot a \cdot V_0 \cdot \beta}{\ln\left(\frac{V_0}{V_t}\right)} \cdot \left(\sqrt{\frac{V_0}{V_t}} - 1 \right)}$$

N - broj molekula u jediničnoj volumenici

22.4 l mera 1 mol tvari

$$22400 \text{ cm}^3 = 6.022 \cdot 10^{23}$$

$$L = \frac{6.022 \cdot 10^{23}}{22400} = 2.69 \cdot 10^{19} \text{ atoma/cm}^3 \text{ - u norm. uvjetima}$$

$p_a = 760 \text{ mm Hg}$ - atmosferski tlak

$T = \text{const} \rightarrow p \cdot V = \text{const}$

$$p_a \cdot V_a = p \cdot V \quad V = 1 \text{ cm}^3$$

$$V_a = \frac{p \cdot V}{p_a} = \frac{500 \cdot 1 \text{ cm}^3}{760} = 0.6579 \text{ cm}^3$$

$$N = V_a \cdot L = 1.77 \cdot 10^{19} \text{ atoma}$$

$$\ln m = 4.84 \rightarrow m = 126.484$$

$$67 \quad E_p = 10 \text{ MeV} \quad - \text{ protoni}$$

$$a = 0.05 \text{ mm}$$

$$b = 1.5 \text{ cm}$$

$$p = 500 \text{ mm Hg}$$

$$l = 15 \text{ cm}$$

$$C = 20 \text{ pF}$$

$$V_0 = 2000 \text{ V}$$

$$V_t = 1000 \text{ V}$$

$V = ?$ - napięcie impuls

$m = 126.484$ - plimski poziom (zadanie 65)

$$V = \frac{M_0 \cdot m \cdot e}{C}$$

$$(\Delta E)_p = \left(-\frac{\Delta E}{\Delta x} \right) \cdot l$$

31 eV - energia zatrzymania za

$$M_0 = \frac{(\Delta E)_p}{31 \text{ eV}}$$

strukturę iónów w protonach

$$-\left(\frac{\Delta E}{\Delta x} \right) = \frac{e^2}{4\pi \epsilon_0} \cdot \frac{2\pi \cdot M}{mc^2} \cdot \frac{q^2}{E_p} \quad (n) \cdot \ln \left(\frac{2E \cdot m_0}{M \cdot h\nu} \right)$$

$$n = ? \cdot N = 3.54 \cdot 10^{12}$$

↳ liczbę elektronów

$$(h\nu) = 23 \text{ eV}$$

M - masa jądra atomu

$$(\Delta E)_p = \left(\frac{\Delta E}{\Delta x} \right) \cdot l = 0.825 \text{ MeV}$$

$$M_0 = \frac{(\Delta E)_p}{31 \text{ eV}} = 2.66 \cdot 10^4$$

$$V = 2.7 \cdot 10^{-2} \text{ V}$$

$$74 \quad M_0 = 10^4$$

$$\frac{M}{M_0} = 0.5$$

$$\eta_d = 5\%$$

$$m_1 = 10^6$$

$$C = 10^{-7} F$$

$$V = ?$$

$$V = \frac{Q - \text{Verbrauch}}{C \cdot \text{kapazität}}$$

$$V = \frac{M \cdot M_0 \cdot m_1 \cdot \eta_d}{C} = \frac{0.5 \cdot 10 \cdot 0.05 \cdot 10^6 \cdot 1.6 \cdot 10^{-12}}{10 \cdot 10^{-12}} = 4 V$$

75 Nastavite uzn zadatak 74

Rezolucija >? $\bar{z} = ?$

$$\bar{z} = \frac{1}{\sqrt{N}} = 0.063245 = 6.3245\%$$

potrošen

$$N_{\text{vratitven}} = 0.5 \cdot M_0 \cdot \eta_d = 250$$

81

Relativistički elektron

 $n = 1.000293$ index loma kroz zrak

$$m_0 c^2 = 0.511 \text{ MeV}$$

Umet rea detektirajući čestice u koju crtačenja $V = \frac{C}{h}$

$$E_k = mc^2 - m_0 c^2$$

$$E_k = m_0 c^2 \left[\frac{1}{\sqrt{1 - (\frac{1}{m})^2}} - 1 \right]$$

$$\beta_{ge} = \frac{1}{m}$$

$$E_k = m_0 c^2 \left(\frac{m}{\sqrt{m^2 - 1}} - 1 \right) = 0.511 \cdot 40.3 = 20.6 \text{ MeV}$$