

32. Odredite smjer naboja i mase čestice koja gibajući se iz točke u kojoj potencijal iznosi 6000 V u točku s potencijalom 3400 V postiže brzinu od  $5 \cdot 10^5$  m/s. Početna brzina čestice je nula.

- A.  $1.7 \cdot 10^{11}$  C/kg    B.  $2.1 \cdot 10^{-8}$  C/kg    C.  $10^{-8}$  C/kg    D.  $9.6 \cdot 10^7$  C/kg  
E.  $4.8 \cdot 10^7$  C/kg

$$\left. \begin{array}{l} \varphi_1 = 6000 \text{ V} \\ \varphi_2 = 3400 \text{ V} \end{array} \right\} \begin{array}{l} \Delta\varphi = \varphi_1 - \varphi_2 = 6000 \text{ V} - 3400 \text{ V} = 2600 \text{ V} \\ \Delta\varphi = U = 2600 \text{ V} = 2,6 \cdot 10^3 \text{ V} \end{array}$$

$$v = 5 \cdot 10^5 \text{ m/s}$$

$$v_0 = 0 \text{ m/s}$$

$$\frac{Q}{m} = ?$$

$$\left. \begin{array}{l} W = Q \cdot U \\ W = E_k = \frac{mv^2}{2} \end{array} \right\} \begin{array}{l} W = E_k \\ Q \cdot U = \frac{mv^2}{2} \quad / \cdot 2 \end{array}$$

$$2Q \cdot U = mv^2$$

$$\frac{Q}{m} = \frac{v^2}{2 \cdot U}$$

$$\frac{Q}{m} = \frac{v^2}{2 \cdot U} = \frac{(5 \cdot 10^5 \text{ m/s})^2}{2 \cdot 2,6 \cdot 10^3 \text{ V}} = \frac{25 \cdot 10^{10} \text{ m}^2/\text{s}^2}{5,2 \cdot 10^3 \text{ V}} = 4,8 \cdot 10^7 \text{ C/kg}$$