GOCCIA 7

$v_{CADUTA} = 6,47 \cdot 10^{-6} \frac{m}{s}$

$v_{SALITA} = 8,13 \cdot 10^{-6} \frac{m}{s}$

$r = ?$ $q = ?$

$d_{OLIO} = 1029 \frac{Kg}{m^3}$ $E = 1000 \frac{N}{C}$

$\eta = 1,7 \cdot 10^{-4} \frac{N \cdot s}{m^2}$

$mg = 6\pi \eta r v_1$

$m = d \cdot V$

$V = \frac{4}{3}\pi r^3$

$d \cdot \frac{4}{3}\pi r^3 g = 6\pi r \eta v_1$

$$r = \sqrt{\frac{6 \eta v_1}{\frac{4}{3} g d}} = \sqrt{\frac{6 \cdot 1,7 \cdot 10^{-4} \frac{N \cdot s}{m^2} \cdot 6,47 \cdot 10^{-6} \frac{m}{s}}{\frac{4}{3} \cdot 9,8 \frac{m}{s^2} \cdot 1029 \frac{Kg}{m^3}}}$$

$\simeq 7 \cdot 10^{-7} m$

$F_{el} = P + F_{ATT}$

$qE = 6\pi r \eta (v_1 + v_2)$

$$q = \frac{6\pi r \eta (v_1 + v_2)}{E} = 3,27 \cdot 10^{-19} C$$

$$n = \frac{q}{q_e} = \frac{3,27 \cdot 10^{-19} \cancel{C}}{1,6 \cdot 10^{-19} \cancel{C}} = 2$$