

12-5

④

$$\dot{m} = ? \text{ kg/h}$$

$$t = 150^\circ\text{C}$$

fluidue

$$\varphi = 30\%$$

$$\rho = 1260 \text{ kg/m}^3$$

$$d_p = 0,68 \text{ mm}$$

$$\zeta = 0,0004 \text{ Pa}\cdot\text{s}$$

$$\rho_p = 4230 \text{ kg/m}^3$$

$$D = 0,04 \text{ m}$$

$$A_t = \frac{g d_p^3 e (e_p - e)}{\zeta^2} = 72144$$

$$\varepsilon = 1 - \varphi = 0,7$$

$$Re_p = \frac{A_t \varepsilon^{4,75}}{18 + 0,16 \sqrt{A_t \varepsilon^{4,75}}} = 152$$

$$v = \frac{Re_p \cdot \eta}{d_p \cdot e} = 0,0711 \text{ m/s} \quad \dot{V} = v \cdot S$$

$$\dot{m} = e \dot{V} = e \cdot v \cdot \frac{\pi D^2}{4}$$

Expanze fluidu vzhdy:

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$$Re_p = \frac{A_t \varepsilon^{4,75}}{18 + 0,6 (A_t \varepsilon^{4,75})^{1/2}}$$

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u2-5

```
clear
dp = 0.68e-3; % m
rho = 1260; % kg/m3
rhop = 4230; % kg/m3
eta = 0.0004; % Pa.s
AR = 9.81*dp^3*rho*(rhop-rho)/eta^2
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AR = 7.2144e+04

eps = 0.7

eps = 0.7000

REP = AR*eps^4.75/(18+0.6*sqrt(AR*eps^4.75))

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REP = 152.2277

v = REP*eta/dp/rho % m/s

v = 0.0711

```
D = 0.04; % m
mdot = rho*v*pi*D^2/4*3600 % kg/h
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mdot = 405.0951