

621.398.96

- 1.
- 2.
- 3.
- 4.

$$\Delta^x = x - x^* \quad \Delta^y = y^* - y^*$$

$$G (G_{xf})$$

$$2$$

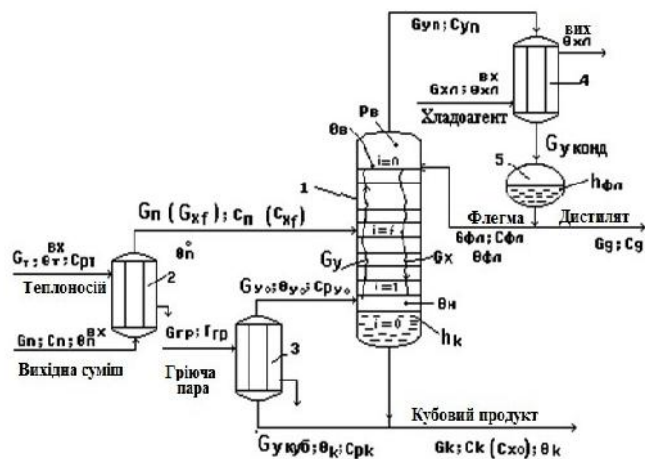
$$1 \quad (i=f).$$

$$G_x$$

$$G_y.$$

$$G$$

3,
G_{y0},



.1.

G_{yn}

4,

5.

G - ;

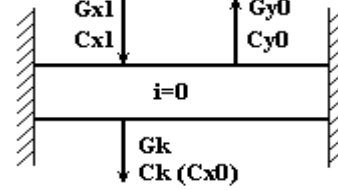


2.

$$G_{x1} C_{x1} = G_k C_k + G_{y0} C_{y0}$$

$$C_{y0} = C_{x0}$$

$$G_{y0} * r_k = G * r \quad (8)$$



3.

$$(3) \quad (4)$$

$$c_k = f(G_{x1}, G_k, G_{y0}(G), c_{x1}) \quad (9)$$

G .

$$(\theta = \theta_0).$$

$$\dots_k * V_k * C_{pk} * \frac{d_n}{dt} = G * r + \quad (1)$$

$$G_{x1} * C_{px1} * n_{x1} - G_{y0} * r_k - G_k * C_{pk} * n$$

$$G * r + G_1 C_1 \theta_1 = G_{y0} r_k + G_k C_{pk} \theta \quad (2)$$

$$\theta = f(G, G) \quad (3)$$

G .

$$\dots_k * S_k * \frac{dh_k}{dt} = G_{x1} - G_k - G_{y0} \quad (4)$$

$$G_{x1} = G_k + G_{y0} \quad (5)$$

k - , / 3;

S k - , 2;

h k - , ;

G x1 , G k , G y0 -

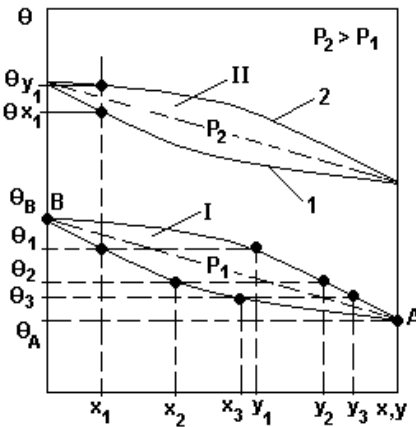
$$(1) \quad (2) \quad (6)$$

$$h_k = f(G_k, G_{y0}) \quad (6)$$

G k .

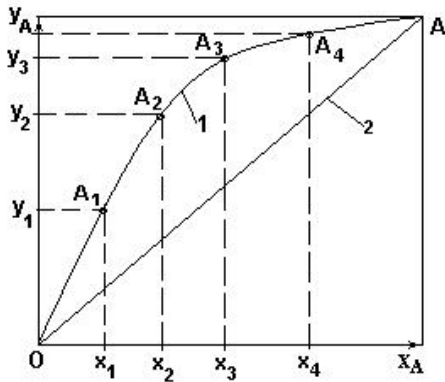
$$M_0 * \frac{dC_{x0}}{dt} = G_{x1} * C_{x1} - G_k * C_{x0} - G_{y0} * C_{y0} \quad (7)$$

« - x - y » = const.



4.

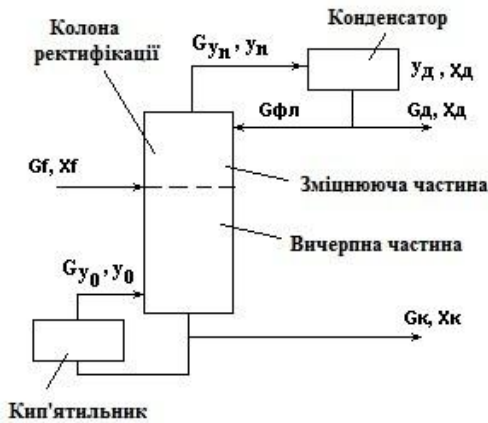
« - x - y » = const



5. «x - y» = const

- $y = x$
- 100%
- ;
- ;
- ;

- G_f, G, G, G - ;
- x_f, x, x - ;
- $R = G / G$ -



6.

$$R_{min} = \frac{x - y_f}{y_f - x_f}, \quad (10)$$

x_f --
 y_f -

$$R = 1,3 * R_{min} + 0,3$$

$$R = * R_{min},$$

=1,2-2,5 -

()

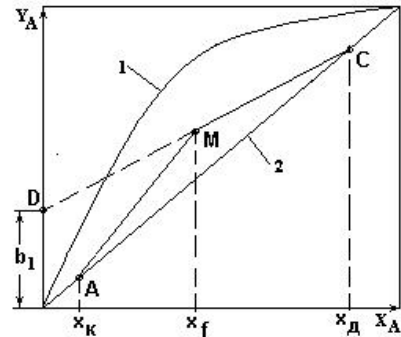
$$y = \frac{R}{R+1} * x + \frac{x}{R+1}$$

y, x -

$$b_1 = \frac{x}{R+1}; \quad tg \gamma_1 = \frac{R}{R+1}. \quad (11)$$

$$y = \frac{R+f}{R+1} * x + \frac{1-f}{R+1} * x_k \quad (12)$$

$$f = \frac{G_f}{G}.$$



7.

$$b_2 = \frac{1-f}{R+1} * x_k; \quad tg \gamma_2 = \frac{R+f}{R+1} \quad (13)$$

1 -
2 -

x
x
xf

y

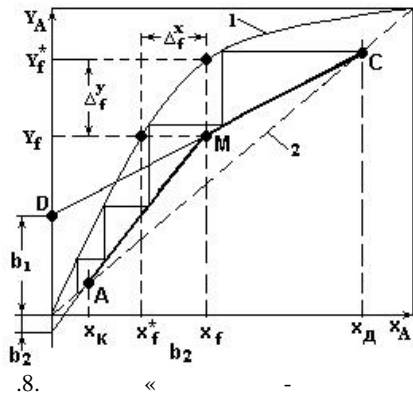
(11)

$$b_1 = \frac{x}{R+1}$$

D.

D

xf.



1 - ;
 2-
 .
 :

$$b_1 = \frac{x}{R+1}; \quad tg\gamma_1 = \frac{R}{R+1}; \quad R = \frac{G}{G} \quad (14)$$

:

$$b_2 = \frac{1-f}{R+1} * x_k; \quad tg\gamma_2 = \frac{R+f}{R+1}; \quad f = \frac{G_f}{G} \quad (15)$$

- ,
 n
$$n = \frac{n}{y},$$

:

$$\Delta_i^x = x - x^*, \quad \Delta_i^y = y^* - y,$$

$$G_x \rightarrow G_y, \quad \Delta$$

$$\Delta_i \Delta$$

,
 ();

x_f, x, x -
 ;

-
$$R = G / G \quad f = \frac{G_f}{G}, \dots \quad G, G, G_f;$$

-
 G_f.

•
$$= f(c)$$

• c .

P

G -

• h
 G -
 • h
 G -
 G - :
 ;
 ;
 G - :
 ;
 G_{y0}.
 0 G :
 ;
 ;
 •
 • , , , , 0.
 • , .
 • - h , h .
 •
 • h , h , :
 • P > P ;
 •
 G .

1. , 2003. – 356 .
 2. : 05.13.06. – , 2012. – 18 .
 3. // 3 (64), 2012. – . 42-47.
 4. 2 / () .-
 2003.- 70 .
 5. : 05.13.06. – , 2011. – 18 .
 6. //
 7. 6, 2007. – . 43-44.
 8. 1. –
 , 2006. – 552 .
 Mathcad:
 , 2004. – 112 .
 01.04.2014

PROCESS AUTOMATION REKTYFYKATSYY

N.V. Ermilova, S.G. Kyslytsya, O.O. Patyk

The article deals with automation of distillation plants, described the actual process of river-cation described diagram equilibrium the mathematical description of the top and bottom of the column. Based on what made the typical solution for automating the process of rectification.

Keywords: energy, automation, mathematical model, heat balance, equilibrium diagram.