



, ( ), [2-4].

( , ), [5, 6].

, ) ) ) [7].

$$h = 3 \quad 45 (S = 0,0254 \text{ } ^2)$$

, / :  $\text{NiSO}_4 - 300$ ;  $\text{NiCl}_2 - 30$ ;  $\text{H}_3\text{BO}_3 - 30$ ; ( 4,5 - 4,8)  
 $= 30^\circ$  ,  $= 2 / ^2$  .

6 .

1. , , .  
 2. 4  
 3. , ,  
 , , -  
 .  
 - 3 ( × 800). -  
 ( × 10), -  
 -  
 × 125). -  
 - 3 .  
 , . , -  
 , , -  
 , ( . 1 ). -  
 , , -  
 , , .  
 ( 1, . 1 ). -  
 ( 2, . 1 ), -  
 ( 3, . 1 ) -  
 . -  
 , , -  
 , . ( ). -  
 , , -  
 . , -  
 , , -  
 , , -  
 , , -  
 , , -  
 , , -

( . 2 ).

( . 1 )



)



)



)



)

.1.

,

( ),

,

( )

( ),

,

( ).

,

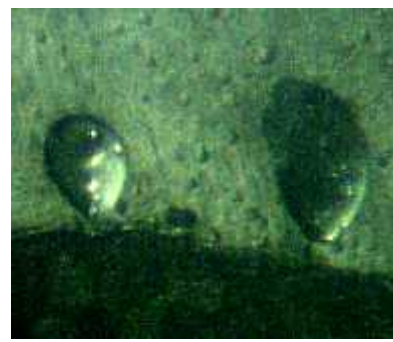
-

-

( . 1 , 2 ).



)



)

.2.

)

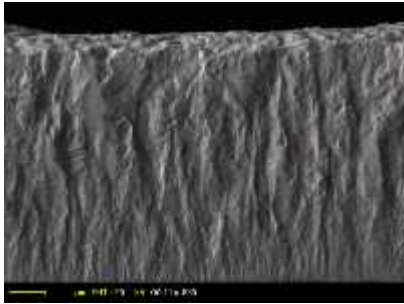
)

,

.

( . 3 )

( . 3 , 1),



)



)



)



)

.3.

)

)

)

; )

( 3),

( . 3 , . 3 ).

, . . -  
 . -  
 ,  
 .  
 , , ,  
 .  
 , 2 / 2, -  
 -3.  
 ,  
 ( 1),  
 1,6 ,  
 .  
 , ,  
 1,5 .  
 .  
 , ,  
 , ,  
 .  
 , ,  
 , ,  
 ,  
 ( ).  
 , ,  
 ,  
 1,5 .  
 , ,  
 .  
 : 1. . , . . -  
 .- : . 1974. - 184 . 2. Chiba A., Kitamura K., Ogawa T. Magnetic fields  
 effects on the electrodeposition of nickel from a high pH Watts bath // Surf. Coat. Tech. - 1986. - 27. -  
 p.83 - 88. 3. . , . . .  
 // . - 1984 - 2. - p.62 - 64.  
 4. . . // -

- 1992, 1 - 2 . 16 -18. **5.** Ganesh V., Vijayaraghavan D., Lakshminarayanan V. Fine grain growth of nickel electrodeposit effect of applied magnetic field during deposition // Appl. Surf. Science. - 2005, 240, Issues 1 - 4, 285 - 295 **6.** Uhlemann M. Effect of magnetic field on the local pH value in front of the electrode surface during electrodeposition of Co // Electroanalytical chemistry. - 2006, vol. 587, Issue 1, 93 - 98. **7.** Hinds G.; Spada F.E.; Coey M. D. Magnetic field effects on copper electrolysis // Phis. Chem. -, 2001, 105, 9487 - 9502.

15.10.06

541.131 : 620.9.93

• • , • • ,  
 • • , • • ,  
 • • , , « » ,

-

-

-

The kinetic parameters of copper in sulphate of copper with the additives of ethylen glycol and dioxide of silicon in conditions close to equilibrium are investigated. Are determined a current of an exchange and polarizing resistance, which testify to an opportunity of a long presence of copper in these solutions, that takes place in copper-sulphate electrode of comparison.

- ( ) -

( , ).

[1, 2].

CuSO<sub>4</sub> ( -

)  $E_{Cu^{2+}/Cu} = 0.3 \pm 0.01$  -

( -

, , ) -