

## Abstract

Master dissertation Kotsyuba OS on "The protective properties of the coating diffusion barrier layers based on chromium carbides and their compositions with corrosion inhibitors" - K: NTU "KPI", 2016, p 118, Fig. 35 , Tables 35, literature - 74.

Diffusion coating based on chromium carbides receiving gas and powder methods compatible with the department staff MTO Engineering Physics faculty NTU "KPI". Corrosion tests were performed in solutions of 1,5%  $C_6H_{10}O_4$ ,  $CH_3COOH$  10%, 15%  $HNO_3$ , 10%  $H_2SO_4$  acid and also inhibited solutions of organic compounds based on N - atsymetylpirydyjniy halides.

Established that studied in the Cr-Al and Ti-Al coating with barrier layers based on chromium carbides in several times increases the heat resistance of steel USA initial tests at 800 ° C, shows the perspective of their practical use in steel production. Revealed that the coating also exhibit high protective properties in solutions of nitric, adipic and acetic acid, but sulfuric acid solution is unstable. Further increase the corrosion resistance of coatings in a solution of sulfuric acid can be achieved by the use of corrosion inhibitors based on N - atsymetylpirydyjniy bromide, protective effect which depends on the nature of substituents. The interrelation between the inhibitory effect of the studied Quaternary pyridinium salts and  $\sigma$  and  $E_s$  -konstantamy their substituents.

Keywords: corrosion, comprehensive coverage of the diffusion barrier layers, N- atsymetylpirydyjniy halides, acid corrosion inhibitors, adsorption.