Abstract

In the present work, an attempt has been made to electropolish Nickel, using non conventional electrolytes, such as H_2SO_4, H_3PO_4, HCL and NaCl solutions. The solutions of different concentration of these electrolytes were used. The current density Vs applied voltage were poltted and the surface of the electrode was examined for each concentration. During electropolishing, in the limiting current region, the rate of anodic dissolution of metal is limited by diffusion of metal ions through the salt film, to the bulk of the solution, which results in leveling and brightening of the metal surface. It was concluded that current density value shifted to a higher value in the concentrated solutions. The close examination at the surface conditions were examined. Anodic diffusion layer was extracted and examined for PH, concentration of Ni ions and its concentration Vs distance from area. The effect of different organic additives on the rate of electropolishing has been observed on the brightening action of Nickel.