Abstract

Electroplating in mechanical engineering. Designing of the process of obtaining shiny nickel coating on tiny steel details in cap-type electrolyzers.

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This project argues for operation and possible improvements of the process of obtaining of shiny nickel coating on steel details. This coating enables to increase both wear and chemical resistance of details' surface. The electroplating is maintained in a cap-type electrolyzer filled with the sulfate electrolyte warmed to 55 ° C. The electroplating procedure is held under 2 A/dm^2 cathode current density and 3.6 V voltage. The project contains also technological calculations and an advanced scheme of automatic regulation of the plating procedure. Additionally, some feasible calculations are carried out. In addition, the project discusses stage of savage water treatment. Actually, water is treated by the ionic exchange method. Eventually, the project reflects on the issue of safety measures aimed at enhancing safety in the employees' workplace.

Keywords: nickel electroplating, cap-type electrolyzer; shiny nickel coating; ion-exchange method of savage water treatment.