

# The study of surface mechanical properties of plastic industrial components for electroless coating

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## ABSTRACT

The purpose is used surface treatment methods to provided with good the mechanical properties for plastic material. The paper is studied many methods to improved the mechanical properties on plastic surface. The methods are included plating, electroless plating or used additives of injection molding, but we must be consider to the cost and intensity. In this study is applied electroless plating technology to surface treatment of plastic material, that plastic components would Ni-P plating at surface to improve the wear resistance. The pre-treatment process of electroless plating include oil removing, roughness and sensitize/activation. The study is discussed differential sandpaper of plastic material. In sensitize/activation processes, the number of soak in bath, affect to surface adhesive force and thickness of plating, and discussed the effect of differential pH value. This paper is used ANSYS analytic software to solve the mechanical behavior analysis for Ni-P plating. Finally, the paper is used the experimental methods and processes to search the optimizing process parameters.

Keywords : Electroless Plating、Wear Resistance、Roughness、Sensitize/Activation、Surface Adhesive Force

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