Short Communication

Electropolishing of Additive Manufactured 17-4 PH Stainless Steel Using Sulfuric Acid

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The sulfuric acid electropolishing system was built to reduce the surface roughness of the additive-manufactured 17-4 PH stainless steel. The extra 10 V power was applied to electropolish the AM specimen to reach the desired surface roughness. The roughness was reduced to 6.76 μm and additional corrosion resistance was given. The corrosion potential became noble and the corrosion current density decreased to approximately 10^{-6} A/cm². The post treatment of the electropolishing process accurately improved both the surface roughness and the corrosion resistance, demonstrating the electropolish process is a useful application in AM objects.

Keywords: Additive Manufacturing; Electropolish; 17-4 PH stainless steel; Roughness

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