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A Study on chemical finishing of Ti6Al4V processed by EBM

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Abstract

Electron Beam Melting (EBM) is one of a few AM technologies capable of making full-density functional metallic parts realized from raw materials in the form of powders [1]. EBM utilizes a high-energy electron beam, as a moving heat source, to melt and solidify, by rapid self-cooling, metal powder and produce parts in a layer-building fashion [2], [3].In particular, the ability of direct fabrications of metallic parts can accelerate product designs and developments in a wide range of metallic-part applications, especially for complex components, e.g., fine network structures ([4], [5]), internal cavities and channels, which are difficult to make by conventional manufacturing means. Anyway many technical aspects concerning the quality of EBM produced components are still industrial open items and studies need to be carried out, expecially the high level of the surface roughness. In according to the industrial needs in this work it have been studied a chemical finishing in order to improve the surface roughness of Ti6Al4V components fabricated by EBM production technology.

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