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Author: Dr. Peng Dong

China Aerospace Science and Technology Corporation (CASC), China, peng852@hotmail.com

ADDITIVE MAUFACTURED Ti5Al2.5Sn ELI VIA SELECTIVE LASER MELTING

Abstract

Ti5Al2.5Sn ELI has widely used in the form of structural components in liquid gas and propellant containment for rockets and space vehicles, due to the good low temperature property. However, it is difficult and costly to manufacture Ti5Al2.5Sn ELI using traditional techniques. Selective laser melting (SLM) is an additive manufacturing based on powder bed. It can manufacture complex shapes compnents without tools or mould, especially for difficult-to-machine materials. In this paper, selective laser melting was used in fabricating Ti5Al2.5Sn ELI samples. The elements content, microstructural characteristics and mechanical property of selective laser melted Ti5Al2.5Sn ELI samples were investigated by means of optical microscopy (OM), scanning electron microscope (SEM) and microhardness and tensile test. It can accumulate the base data of selective laser melted Ti5Al2.5Sn ELI for aerospace applications.