

Advanced Welding and Deforming

Laser cladding - a modern joining technique

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Abstract

The shroud shelf life of turbine blades depends on wear resistance. Thus, the wear of blade shroud shelves' contact area ascertains the overall service life of gas turbine engines (GTE). Moreover, research shows that the life service of turbine blades may be enhanced by plasma cladding in the form of wire. However, plasma cladding has its limitations such as the fact that it's performed manually and administers non-uniformity of the coating. As a result, these limitations can be overcome by laser cladding coating technique, which is accomplished by direct injection of clad powder into the melt pool. The current chapter confers a review on laser cladding technology which is a modern joining technique to fulfill the requirements of many industrial applications. The intention is to facilitate researchers by providing comprehensive knowledge about this technology to encourage them to explore it by future research and innovation efforts. The significant merits and operational areas of these approaches are also discussed in this chapter.