Advanced Machining Technologies for Titanium Aerospace Components

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Abstract

Advanced Machining Technologies for Titanium Aerospace Components  Future aircraft and jet engines need to be lighter, quieter, more fuel efficient and should have lower emissions. This set of requirements will change the material mix for aircraft components drastically. Titanium and Composite materials will replace traditional Aluminum structures in flight safety critical applications. Manufacturing technology has to respond to this trend by offering globally competitive machining solutions, as aerospace manufacturing is more and more shifting to countries with heavy investment in new aircraft fleets, like Dubai. The presentation will assess the state of the art in aerospace component manufacturing and provide guidelines for a global efficiency benchmark. The main focus will be on the recent science and research based progress in efficient Titanium manufacturing processes for aircraft structures and jet engines. Based on these test results in industrial environment conditions recommendations have been developed helping to achieve a cost optimized manufacturing strategy for consistent high quality safety critical engine and structural components. The presentation concludes with a guidance for global competitiveness in Titanium machining.