

Smart Structures in Aerospace: Market Opportunities: 2016-2025

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Abstracts

Smart structures play a growing role in the aerospace industry in four different areas: monitoring of composites, suppression of structural vibration, noise suppression, and surface morphing. A related area is the use of photovoltaics in aircraft of various types.

This report identifies where the commercial opportunities are for smart structures in civil and general aviation, military aircraft, helicopters, UAVs and spacecraft. It examines where the money will be made in smart structures for aircraft at all levels of the value chain; we examine the market potential for the smart structures themselves, the related smart materials and SHM/HUMS systems and smart aircraft skins, as well as the implications of the trend towards smart structures for the aircraft builders and airlines.

The report profiles both the R&D and commercialization projects for smart structures in the aerospace industry, including those sponsored by governmental agencies such as the EU, DARPA and NASA and those run by the major aerospace companies.

The report also discusses how smart structures are enabling the aerospace industry to move away from manual monitoring and repair procedures and the ways that firms in the smart structure space are overcoming the strong reluctance of aerospace industry to abandon manual processes for aircraft maintenance. In particular, the report examines how smart technologies can monitor the operation of the aircraft, improve its functioning, reducing its maintenance, and extend its life cycle.

In addition, this n-tech report includes granular ten-year forecasts for the smart materials, components and subsystems used for smart structure deployment in the aerospace industry. In addition, we provide detailed profiles of key companies in the aerospace smart structures space analyzing their product/market strategies they have

devised for this market.

This report is part of n-tech's ongoing research program on smart materials. n-tech has already published many reports on smart materials including a recent report on smart structures in the construction industry. Other topics covered by n-tech's smart materials reports include smart windows, smart coatings, smart surfaces, self-healing materials, multifunctional coatings and surfaces, color-shifting materials and several other topics.

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