

# 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.

## Contents

### EXECUTIVE SUMMARY

- E.1 Opportunity Analysis by Sector
  - E.1.1 Opportunities for Smart Materials Firms
  - E.1.2 Opportunities in SHM, HUMS and Smart Aircraft Skins
  - E.1.3 Opportunities for Aircraft Builders and Airlines
- E.2 Summary of Ten-Year Forecasts
  - E.2.1 Breakout by Technology
  - E.2.2 Breakout by Type of Aircraft
  - E.2.3 Breakout by Geography: the US, Europe and Other
- E.3 Six Companies to Watch in Smart Structures for the Aerospace Industry

### CHAPTER ONE INTRODUCTION

- 1.1 Background to this Report
- 1.2 Goal and Scope of this Report
- 1.3 Methodology of this Report
- 1.4 Plan of this Report

### CHAPTER TWO: SMART STRUCTURES: TECHNOLOGY EVOLUTION AND VALUE CHAINS

- 2.1 Smart Structure Value Chain in the Aerospace Industry
- 2.2 Materials Used for Smart Structures in the Aerospace Industry
  - 2.2.1 Role of Smart Composites
  - 2.2.2 Shape Memory Alloys and Polymers
  - 2.2.3 Piezoelectric and Piezomagnetic Materials
  - 2.2.4 Smart Thermal Materials and Structures
  - 2.2.5 Conductive Polymers
  - 2.2.6 Self-Healing Surfaces in Aerospace
  - 2.2.7 Optical Sensors
  - 2.2.8 Ten-Year Forecast of Materials and Components for Smart Aerospace Structures
- 2.3 SHM and Related Markets
  - 2.3.1 SHM and HUMS
  - 2.3.2 The Business Case for SHM
  - 2.3.2 Evolution to Smart Skins and Sensory Nets

- 2.3.3 Types of Sensors Used
- 2.3.4 Ten-Year Forecast of SHM, Smart Skins and Related Markets
- 2.4 Solar and Smart Structures in Aerospace
  - 2.4.1 SMPC Solar
  - 2.4.2 RAPDAR
- 2.5 Multilayered Aerospace Structures
- 2.6 Key Points from this Chapter

## **CHAPTER THREE: SMART STRUCTURES IN AEROSPACE: DRIVERS AND ACCEPTANCE**

- 3.1 Viability and Acceptance of Smart Structures in Aviation
  - 3.1.1 Need for Integration
  - 3.1.2 Cost
  - 3.1.3 Acceptance of Smart Structures in the Aerospace Industry
- 3.2 Monitoring of composite materials
  - 3.2.1 Drivers for use of smart structures to monitor composites
  - 3.2.2 Types of technology used: Sensors
- 3.3 Noise suppression
  - 3.3.1 The Active Structural Acoustic Control (ASAC) approach
  - 3.3.2 National Research Council of Canada
- 3.4 Control of surface morphing
  - 3.4.1 Objectives of Surface Morphing
  - 3.4.2 Current R&D Products and Commercialization
- 3.5 Control of Structural Vibration
- 3.6 Key Points from this Chapter

## **CHAPTER FOUR: TEN-YEAR FORECASTS FOR SMART STRUCTURES IN THE AEROSPACE INDUSTRY**

- 4.1 Civil and General Aviation
  - 4.1.1 Role in Supersonic Airlines
- 4.2 Military Aircraft
- 4.3 Helicopter
- 4.4 UAVs
- 4.5 Satellites and Space Vehicles
  - 4.5.1 Space Segment
  - 4.5.2 Launch Vehicles
- 4.6 Key Points from this Chapter

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