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Markets for Smart Composites: 2015 to 2022

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Abstracts

Smart composites leverage the commercial success of the composite technology model and apply it specifically to smart materials. In regular composites two materials are combined to create a new material with functionality that is significantly different to the original materials. Typically, a smart composite is a smart material embedded in polymer, textiles, metal or concrete. In a few cases, smart composites are fabricated from two “dumb” materials that become smart only when they are combined.

n-tech’s analysis suggests that these smart composites will have a growing role in a number of important applications and industry sectors. Many smart composites are inherently multifunctional and the latest smart composite technology even promises the ability to embed programmability into materials, enabling robotics-like behavior without embedded electronics.

In this report, n-tech discusses the latest products and R&D developments in smart composites from a business perspective and how product/market strategies related to these materials are emerging at both the largest specialty chemical and glass companies, and at as startups.

Materials and Technology

This report provides complete coverage of the opportunities for smart composites examining the role of both the smart materials and substrates into which they are encapsulated. Components for smart materials that are analyzed in this report include:

Piezoceramics

Shape memory alloys

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Magneto-restrictive materials

Electro-restrictive materials

Carbon and optical fiber

Thermoelectric and thermally responsive materials

Others

The report also looks at how smart composites compare with conventional smart materials and how smart composite fabrication technology is evolving. In particular, we examine the commercial potential of so-called 4D printing technology to take smart composites to a new level of intelligence within the context of smart material applications.

Applications and Markets for Smart Composites

This report also includes an analysis of the application areas where n-tech sees smart composites generating significant revenues in the next decade. These areas include:

Energy storage,

Sensing and diagnostics

Self-healing surfaces

Robotics

Clothing and fabrics

Smart structures for the construction and aerospace industries.

Eight-Year Forecasts

This report contains detailed forecasts of the smart composites market including

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Revenue ($ Millions)

Volume (square meters or Kgs)

Breakout by application

Breakout by materials and technology

Strategic profiles

In this report n-tech also examines the product/market strategies of the firms to watch in smart composites including their current R&D programs. Coverage includes both smart composites activities of leading composites firms such as DuPont, 3M and Teijin, as well as innovative small firms and start-ups.

The evaluation of smart composites markets in this report is based on interviews with key influencers in smart materials markets, as well as numerous secondary resources. It also draws on n-tech's insider knowledge of the smart materials business.

We believe that this report will be invaluable reading for marketing and business development specialists in coatings firms, specialty chemical companies and glass firms, electronics and robotics OEMs, as well as sophisticated investors interested in this space.

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ACRONYMS AND ABBREVIATIONS USED IN THIS REPORT

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