

# Markets for Metamaterials 2016-2023

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## Abstracts

Metamaterials are a class of smart materials that are intrinsically able to control and manipulate light, sound, and other phenomena. Their prime design characteristic of metamaterials – the characteristic that enables their various functionalities – is that they are fabricated as a composite with the constituent materials tightly coupled enough – that an metamaterial element can be treated as if it were a molecule, but of a purely artificial material.

The “application” for metamaterials that gets the most attention in the press is their ability to serve as invisibility cloaks for military aircraft. However, this futuristic application disguises the fact that metamaterials are already in use in antennas with many other applications rapidly emerging including optics, medicine, aerospace, infrastructure monitoring, military, earthquake monitoring, etc.

In this report we identify the revenue generation potential over the next eight years for metamaterials. This analysis includes a discussion of the commercial implications of the latest technological trends, and how new designs and performance improvements are likely to expand the addressable markets for metamaterials. For example, we look at the emergence of photonic metamaterials, tunable metamaterials, FSS selective surface based metamaterials, etc. The report also analyzes how end-user markets for shape memory materials are changing.

In putting together this report n-tech has drawn on its extensive experience in the smart materials space as well as interviews with key companies shaping these markets. n-tech believes that this report will provide valuable insight into metamaterials markets that will benefit marketing and business development executives from various parts of the supply chain, including raw material suppliers, chemical and coatings companies, specialized firms and OEMs, as well as investors with an interest in the smart materials business.

## Applications and Markets

This report identifies the applications areas where n-tech believes metmaterials have a real opportunity to move beyond the lab to high-volume commercial applications. In this report we focus on – and forecast – the use of metamaterials in the following application areas:

Aersospace and defense

Medical

Consumer wireless communications

Infrastructure monitoring

## Eight-Year Forecasts Metamaterials

This report contains detailed forecasts of volume (in square meters and units) and revenue (in \$ millions), broken down by:

End application

Type of metamaterial

Product type

## Profiles of Key Players

This report evaluates the product/market strategies of the leading suppliers in the space. Firms that are discussed in this report include

Alps Electric

Applied Em

Colossal Storage Corporation

Echodyne Corporation

Evolv

Fianium

Fractal Antenna Systems,

Harris Corporation

HP

Inframat Corp.

Jem Engineering

Kymeta Corporation

Luminus Devices

Luxtera

Medical Wireless Sensing

Metamagnetics

Metamaterial Technologies

Microwave Measurement Systems

Nanohmics

Nanosonic

Nanosteel

Newport Corp.

NKT Photonics

NEC

Omniguide

Opalux

Panasonic

Photeon Technologies

Photonic Lattice Inc.

Plasmonics

Raytheon

Samsung

Sandvik Materials Technology

Sumitomo

Teraview

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