

# 2018 Advanced Materials Research Review

<https://marketpublishers.com/r/27E2D1BEA62EN.html>

Date: February 2019

Pages: 144

Price: US\$ 1,250.00 (Single User License)

ID: 27E2D1BEA62EN

## Abstracts

### REPORT SCOPE

The term 'advanced materials' refers to all new materials or modified materials that demonstrate superior performance for a critical application under consideration. General materials with existing features are sometimes not suitable for certain critical applications, as a result manufacturer focus on research and development (R&D) to develop new and improved versions of the materials which are defined as advanced materials.

Smart glass, coated flat glass, industrial ceramics, super strength fibers, metamaterials and biodegradable materials are some of the examples of advanced materials available in the market. Advanced materials are deeply integrated in and partially defined by the applications they serve. By necessity, their story changes over time and alongside their applications fluctuating fortunes. But trends and common threads do emerge and can be useful to understand.

Innovative applications of advanced materials in various end-use industries are leading to rise in demand of these materials. For example if we consider coated flat glass, the product is used for applications in construction industry, automotive industry and solar glass industry. In construction industry coated flat glass is used for solar control efficiency and other applications, due to the excellent insulation properties of the product. Fire resistance, abrasion and impact-resistance, weather and natural disaster resistance and high-quality manufacturing will sustain the demand for flat glass in the architectural sector over the next five years. Another advanced material, metamaterials is used for applications in automotive radar, airborne antennas, satellite antennas, wireless communications, medical imaging, etc. Metamaterials can manipulate electromagnetic radiation (e.g., light) in ways not readily observed in nature. In this research review, there are many other such advanced materials which are developed

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