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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

for specific applications and end-use industries are discussed.

Contents

CHAPTER 1 FOREWORD

Foreword

CHAPTER 2 MOLTEN SALT REACTORS: OPPORTUNITY AND GLOBAL MARKETS (AVM159A)

Introduction

Reasons for Doing This Study

Scope of Report

Research Methodology

Intended Audience

Information Sources

Regional Breakdown

Analyst's Credentials

BCC Custom Research

Related BCC Research Reports

Summary and Highlights

Market and Technology Background

Market Definition and Evolution of Molten Salt Reactors

Future Outlook and Expectations

Countries Producing Electricity from Renewable Resources

Market Dynamics

Market Breakdown by Nuclear Fuel Type

Thorium

Uranium

Plutonium

Key Developments

Safety and Security

Sustainability and Resources

Mass Production

Produces Less Long-Lived Waste

CHAPTER 3 METAMATERIALS: TECHNOLOGIES AND GLOBAL MARKETS (AVM067E)

Introduction

Study Goals and Objectives
Reasons for Doing This Study
Scope of Report
Information Sources
Methodology
Geographic Breakdown
Analyst's Credentials
Related BCC Research Reports
Summary and Highlights
Market and Technology Background
General Description of Metamaterials
Types and Applications of Metamaterials
Overall Market Size and Segmentation

CHAPTER 4 BIOINSPIRED AND NANOENGINEERED SURFACES: TECHNOLOGIES, APPLICATIONS AND GLOBAL MARKETS (AVM089B)

Introduction
Study Goal and Objectives
Scope of Report
Intended Audience
Sources of Information
Research Methodology
Geographic Breakdown
Analyst's Credentials
Related BCC Research Reports
Summary and Highlights
Technology Overview
Biomimetic and Nanoengineered Surfaces - Definition
Fabrication Techniques
Properties
Research and Development of Biomimetic NES Systems
Research and Development of Synthetic NES Systems
Commercial Developments and Applications of NES Systems
Market Sectors, Size and Growth Trends

CHAPTER 5 GLOBAL MARKETS FOR SPARK PLASMA SINTERING AND OTHER ADVANCED SINTERING TECHNOLOGIES (AVM146A)

Introduction
Reasons for Doing This Study
Intended Audience
Scope of Report
Methodology and Information Sources
Analyst's Credentials
Related BCC Research Reports
Summary Highlights
Market and Technology Background
The Sintering Industry
Applications of Advanced Sintering Technologies
Global Market
Current Market Status

CHAPTER 6 PHOTONIC CRYSTALS: MATERIALS, TECHNOLOGIES AND GLOBAL MARKETS (AVM059C)

Introduction
Study Goals and Objectives
Reasons for Doing the Study
Scope of the Report
Intended Audience
Methodology and Information Sources
Geographic Breakdown
Analyst's Credentials
Related BCC Research Reports
Summary and Highlights
Market Overview
Photonic Crystal Basics
Why Are Photonic Crystals Promising?
Attributes of Photonic Crystals
Market Forecast
Photonic Crystal Dimensions
Geographic Regions

CHAPTER 7 SPECIALTY SORBENTS: GLOBAL MARKETS TO 2022 (AVM152A)

Introduction
Study Goals and Objectives

Reasons for Doing This Study
Scope of Report
Research Methodology
Intended Audience
Information Sources
Geographic Breakdown
Analyst's Credentials
Related BCC Research Reports
Summary and Highlights
Market Technology and Background
Historic Roadmap of Sorbent Chemistry
Product Lifecycle Analysis
Company Market Shares, 2016

CHAPTER 8 LED PHOSPHORS: MATERIALS, TECHNOLOGIES AND GLOBAL MARKETS (AVM126A)

Introduction
Study Goals and Objectives
Reasons for Doing This Study
Scope of Report
Information Sources
Methodology
Geographic Breakdown
Analyst's Credentials
Related BCC Research Reports
Summary and Highlights
Market Breakdown by Technology
Remote Phosphor Technology
Other Phosphor-Converted LEDs

CHAPTER 9 GLOBAL MARKETS FOR FRICTION PRODUCTS AND MATERIALS (AVM028H)

Introduction
Study Goals and Objectives
Reasons for Doing This Study
Scope of Report
Information Sources

Methodology
Geographic Breakdown
Analyst's Credentials
Related BCC Research Reports
Summary and Highlights
Technology, Regulatory and Economic Environment
History of Friction Products and Materials
Emerging Technologies
Market Breakdown by Type of Friction Materials

CHAPTER 10 COATED FLAT GLASS: TECHNOLOGIES AND GLOBAL MARKETS (AVM100C)

Introduction
Study Goals and Objectives
Reasons for Doing This Study
Recent Developments
Scope of Report
Information Sources
Methodology
Geographic Breakdown
Analyst's Credentials
Related BCC Research Reports
Summary and Highlights
Market and Technology Background
Key Types of Coated Flat Glass Based on Technology
Key Types of Coated Flat Glass Based on Applications
Global Market for Coated Flat Glass
Overall Market for Coated Flat Glass
Global Market for Coated Flat Glass Market by Region

CHAPTER 11 MICROSPHERES: TECHNOLOGIES AND GLOBAL MARKETS (AVM073D)

Introduction
Study Goals and Objectives
Reasons for Doing This Study
Scope of Report
Information Sources

Methodology
Geographic Breakdown
Analyst's Credentials
Related BCC Research Reports
Summary and Highlights
Overview of Microspheres
Industry Overview
History of Microsphere Industry
Global Microsphere Market by Region
North America
EMEA
Asia-Pacific
Rest of the World

List Of Tables

LIST OF TABLES

- Table 1: Global Market for Molten Salt Reactors, by Region, Through 2022
- Table 2: Global Market for Thorium, by End Use, Through 2022
- Table 3: Global Market for Uranium, by End Use, Through 2022
- Table 4: Global Market for Plutonium, by End Use, Through 2022
- Table 5: Global Market for Metamaterials Applications, by Type, Through 2028
- Table 6: Major Types and Applications of Metamaterials
- Table 7: Global Market for Metamaterials, by Type of Material, Through 2028
- Table 8: Global Market Shares of Metamaterials, by Type of Material, 2017-2028
- Table 9: Global Market for Metamaterials, by End Use, Through 2028
- Table 10: Global Market Shares of Metamaterials, by End Use, 2017-2028
- Table 11: Global Market for Nanoengineered Surfaces, by Main Application Sector, Through 2022
- Table 12: Techniques Used to Fabricate Nanoengineered Surfaces
- Table 13: Properties Exploited by Bioinspired Nanoengineered Surfaces (NES)
- Table 14: Wetting and Adhesion Applications of Biomimetic Analogs: Bioinspired from Plant Species
- Table 15: Wetting and Adhesion Applications of Biomimetic Analogs: Bioinspired from Insects, Reptiles and Marine Species
- Table 16: Optical Applications of Biomimetic Analogs: Bioinspired from Insects, Reptiles and Marine Species
- Table 17: Other Applications of Biomimetic Analogs: Bioinspired from Various Species
- Table 18: Applications of Synthetic Nanoengineered Surfaces
- Table 19: Main Industrial Application Sectors and End Uses Identified for Nanoengineered Surface Technologies
- Table 20: Global Market for Nanoengineered Surfaces, by Main Application Sector, Through 2022
- Table 21: Global Market for AST Equipment, by Type, Through 2022
- Table 22: Spark Plasma Sintering and Other Advanced Sintering Technologies
- Table 23: Global Market for Sintering Equipment, by Region, Through 2022
- Table 24: End Use of Products Manufactured by Advanced Sintering Technologies
- Table 25: Global Market for AST Equipment, by Category, Through 2022
- Table 26: Global Market for AST Equipment, by Type, Through 2017
- Table 27: Global Market for AST Equipment, by Application, Through 2017
- Table 28: Global Market for AST Equipment, by Region, Through 2017
- Table 29: Global Sales of Photonic Crystals, by Component and Module, Through 2023

- Table 30: Key Benefits of Photonic Crystal Structures
- Table 31: Key Functional Attributes of Photonic Crystals
- Table 32: Photonic Crystal Modules and Components, by End-User Industry, Through 2023
- Table 33: Global Sales of Photonic Crystal Modules and Components, by Crystal Dimension, Through 2023
- Table 34: Global Sales of Photonic Crystal Modules and Components, by Region, Through 2023
- Table 35: Global Market for Specialty Sorbents, by Application, Through 2022
- Table 36: Sorbents Market: Major Innovations
- Table 37: Major Applications of Sorbents
- Table 38: Global Market for LED Phosphors, by Technology, Through 2022
- Table 39: Global Market for LED Phosphors, by Technology, Through 2022
- Table 40: Global Market Share of LED Phosphors, by Technology, 2016
- Table 41: Global Market Share of LED Phosphors, by Technology, 2017
- Table 42: Global Market Share of LED Phosphors, by Technology, 2022
- Table 43: Global Market for Remote Phosphor LED Technology, Through 2022
- Table 44: Global Market for Other Phosphor-Converted LEDs, Through 2022
- Table 45: Global Friction Products Market Outlook, by Sector, Through 2023
- Table 46: Reasons Why the Friction Materials Industry Showed Little Change before the Mid-1960s
- Table 47: Reasons Why the Friction Materials Industry Changed in the Mid-1960s
- Table 48: Global Market for Friction Materials, by Type*, Through 2023
- Table 49: Global Market Volume for Friction Materials, by Type*, Through 2023
- Table 50: Global Market for Coated Flat Glass, by Application, Through 2023
- Table 51: Global Market for Coated Flat Glass, Through 2023
- Table 52: Global Market for Coated Flat Glass, by Region, Through 2023
- Table 53: Global Market Volume of Coated Flat Glass, by Region, Through 2023
- Table 54: Global Market for Microspheres, by Region, Through 2022
- Table 55: Microsphere Markets and Applications
- Table 56: North American Market for Microspheres, by Industry, 2017
- Table 57: EMEA Market for Microspheres, by Industry, 2017
- Table 58: Asia-Pacific Market for Microspheres, by Industry, 2017
- Table 59: RoW Market for Microspheres, by Industry, 2017

List Of Figures

LIST OF FIGURES

- Figure 1: Global Market for Molten Salt Reactors, by Region, 2016-2022
- Figure 2: Maximum Consumption of Renewable Resources (Wind and Solar) for Electricity Generation, by Country, 2015 and 2016
- Figure 3: Global Market for Thorium, by End Use, 2016-2022
- Figure 4: Global Market for Uranium, by End Use, 2016-2022
- Figure 5: Global Market for Plutonium, by End Use, 2016-2022
- Figure 6: Global Market for Metamaterials Applications, by Type, 2017-2028
- Figure 7: Trends in the Global Market for Metamaterials, 2017-2028
- Figure 8: Global Market for Nanoengineered Surfaces, by Main Application Sector, 2016-2022
- Figure 9: Global Market for Nanoengineered Surfaces, by Main Application Sector, 2017-2022
- Figure 10: Global Commercial Growth Market for Nanoengineered Surfaces, 2017-2022
- Figure 11: Global Market for AST Equipment, by Type, 2015-2022
- Figure 12: Types of Sintering Processes
- Figure 13: Global Market Shares of Sintering Equipment, by Type, 2022
- Figure 14: Global Market for AST Equipment, by Category, 2015-2022
- Figure 15: Global Market Shares of AST Equipment, by Type, 2017
- Figure 16: Global Market Shares of AST Equipment, by Application, 2017
- Figure 17: Global Market Shares of AST Equipment, by Region, 2017
- Figure 18: Global Sales of Photonic Crystals, by Component and Module, 2017-2023
- Figure 19: Global Market for Specialty Sorbents, by Application, 2016-2022
- Figure 20: Product Life Cycle, by Region
- Figure 21: Company Market Shares of Specialty Sorbents, 2016
- Figure 22: Global Market for LED Phosphors, by Technology, 2016-2022
- Figure 23: Global Market for LED Phosphors, by Technology, 2016-2022
- Figure 24: Global Market Share of LED Phosphors, by Technology, 2016
- Figure 25: Global Market Share of LED Phosphors, by Technology, 2017
- Figure 26: Global Market Share of LED Phosphors, by Technology, 2022
- Figure 27: Global Market for Remote Phosphor LED Technology, 2016-2022
- Figure 28: Global Market for Other Phosphor-Converted LEDs, 2016-2022
- Figure 29: Global Friction Products Market Outlook, by Sector, 2017-2023
- Figure 30: Global Market Share of Coated Flat Glass, by Application, 2018 and 2023
- Figure 31: Global Market Share of Coated Flat Glass, by Region, 2018 and 2023
- Figure 32: Global Market Volume Share of Coated Flat Glass, by Region, 2018 and

2023

Figure 33: Global Market for Microspheres, by Region, 2016-2022

Figure 34: Number of Companies in the Microsphere Market, by Country

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