
Description: Growth in the demand for radiation detection, especially for homeland security and medical applications, is driving the need for radiation detection materials that can provide sufficient performance at the right price. Increased interest in mobile radiation detection for security and military applications places more emphasis on materials that can reliably distinguish between naturally occurring and potentially threatening sources of radiation while using relatively thin crystals in order to limit size and weight of the detectors. At the same time, certain applications demand larger crystals, putting pressure on suppliers to grow defect-free large diameter crystals at a cost the market will accept.

This report provides insight into the status of a wide range of materials for detection of gamma rays, x-rays and neutrons. Materials that have been used for decades for gamma and x-ray detection are not going away, but replacement materials are on the horizon. Restrictions on the use of helium-3 continue to drive a need for other materials for neutron detection. Materials such as CLYC (Cs2LiYCl6), that can detect both gamma rays and neutrons, are very compelling and have received a lot of attention lately. It discusses the commercial prospects of CLYC and other materials that have the potential to change the radiation detection materials industry. Notable materials include strontium iodide and cadmium zinc telluride (CZT).

Much of the focus is on the companies that make scintillation and semiconductor materials for radiation detection, and this report covers suppliers that are at the forefront of developing new materials and manufacturing processes, including Acrorad, CapeSym, Hellma Materials, Hilger Crystals, Redlen Technologies, RMD Instruments, Saint-Gobain, and others. It also discusses companies upstream and downstream of the crystal suppliers and how changes in detection materials affect their businesses.

While homeland security and medical imaging are the primary applications that materials suppliers are targeting, other applications have a significant effect on the development of this industry. This report discusses the role of radiation detection materials in the nuclear power industry and also covers various industrial and scientific applications that use nontrivial quantities of radiation detection materials.

This report includes granular eight-year forecasts of radiation detection materials, looking both at volume of material required and revenues. Forecasts are broken down by material type, application, and geography.
1.2 Objectives and Scope of this Report
1.3 Methodology of this Report
1.4 Plan of this Report

Chapter Two: Trends in Materials for Radiation Detection
2.1 Shifting Away from Legacy Materials
2.1.1 The Future of Sodium Iodide
2.1.2 Use of Plastic Scintillation Materials
2.1.3 The High Cost of HPGe
2.2 Commercialization of Newer Scintillation Materials
2.2.1 Strontium Iodide-based Materials
2.2.2 CLYC (Cs2LiYCl6) and Related Materials
2.2.3 Materials Based on Rare Earth Metals
2.2.4 Fluorides, Oxides, and Silicates
2.2.5 Nanomaterials and other Next Generation Alternatives
2.3 Development of Alternative Semiconductor Radiation Detection Materials
2.3.1 Cadmium Zinc Telluride (CZT) and Related Materials
2.3.2 Other Compound Semiconductors
2.3.3 Alternative Materials in Development
2.4 Replacing 3-Helium for Neutron Detection
2.4.1 Boron-based Materials
2.4.2 Lithium-based Materials
2.5 The Radiation Detection Materials Supply Chain
2.5.1 Effect of Raw Material Supply and Demand on the Market for Detection Materials
2.5.2 Impact of Materials Trends on Raw Materials Suppliers
2.5.3 Effective Strategies for Scintillator Crystal Manufacturers
2.5.4 How Materials Changes Impact Equipment and Device Manufacturers
2.6 Key Points from this Chapter

Chapter Three: Key Applications for Radiation Detection Materials
3.1 Homeland Security
3.1.1 Cargo Scanning
3.1.2 Securing Ports of Entry and Cities
3.2 Military Applications
3.2.1 Portable Detectors
3.2.2 Nuclear Weapons
3.3 Nuclear Power Plants
3.4 Medical Imaging
3.4.1 PET and SPECT Scanning
3.4.2 X-Ray Imaging
3.4.3 Radiation Therapy
3.5 Industrial Applications Related to Health and Safety
3.6 Oil and Mining Industry
3.7 Scientific and Research Needs
3.8 Key Points from this Chapter

Chapter Four: Eight-Year Forecasts for Radiation Detection Materials
4.1 Forecasting Methodology
4.2 Forecasts of Scintillation Materials
4.3 Forecasts of Semiconductor Materials
4.4 Forecasts of Neutron Detection Materials
4.5 Forecasts by Radiation Detection Application
4.6 Forecasts by Geography

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