

# **Positive Material Identification Market by Offering (Equipment and Services), Technique (XRF and OES), Form Factor (Portable Analyzers and Benchtop Analyzers), Industry (Chemicals, Automotive, Scrap Recycling), and Geography - Global Forecast to 2023**

<https://marketpublishers.com/r/P812939F360EN.html>

Date: March 2018

Pages: 151

Price: US\$ 5,650.00 (Single User License)

ID: P812939F360EN

## **Abstracts**

“The PMI market is expected to grow at a CAGR of 7.79% between 2018 and 2023”

The positive material identification (PMI) market is expected to grow from USD 1.99 billion in 2018 to USD 2.89 billion by 2023, at a CAGR of 7.79% between 2018 and 2023. Some of the drivers for the growth of this market are stringent safety regulations by governments and quality control requirements, declining efficiencies of aging assets and the subsequent need for operational safety, and innovative technological advancements in PMI equipment. The main restraint for the market growth is a high cost associated with PMI equipment.

“The PMI market for services is expected to grow at a higher CAGR during the forecast period”

The PMI services considered in the study involve only the third-party services offered by the testing, inspection, and certification (TIC) players, such as SGS, Bureau Veritas, Intertek, and T?V S?D. Various industry players purchasing PMI equipment for the testing of alloy and metal materials are not considered in this scope. The market for services is likely to grow at a higher CAGR owing to the increasing concentration of the third-party service providers in this market. This market is basically known as the outsourced market, wherein the experts render these services as per the client demands.

“XRF analyzers held major size of the PMI equipment market in 2017”

The adoption of XRF analyzers is huge as compared with that of OES analyzers, as XRF is the purest form of NDT, and these analyzers are less expensive than the OES analyzers. Also, the OES method results in burned marks on the objects, whereas XRF provides clean analysis. Moreover, XRF analyzers are small in size and are mostly portable, whereas OES analyzers are mostly suitable for laboratory use being benchtop devices weighing more than 15–20 kg per analyzer. These factors are likely to continue to boost the adoption of XRF analyzers in industries such as oil and gas, scrap recycling, and chemicals in the future as well.

“The PMI market in APAC is expected to be grow at the highest CAGR during the forecast period”

APAC is the largest contributor to the adoption of PMI offering. The region, including China, Japan, and India, has shown increased adoption in the market owing to strong industrial base in these countries. The market in APAC is expected to grow at the highest CAGR during the forecast period owing to the growing implementation of these equipment for the improvement of processes in various industries.

Breakdown of profile of primary participants:

By Company: Tier 1 – 53 %, Tier 2 – 15%, and Tier 3 – 32%

By Designation: C-Level Executives – 30%, Directors – 27%, and Others – 43%

By Region: North America – 20%, Europe – 16%, APAC – 40%, and RoW – 24%

The major players profiled in this report include:

Olympus (Japan)

Thermo Fisher (US)

Bruker (US)

Hitachi High Technologies Corporation (Japan)

Ametek (US)

Simadzu (Japan)

PANalytical B.V. (Netherlands)

SGS Group (Switzerland)

Bureau Veritas S.A. (France)

Intertek Group PLC (UK)

T?V S?D Group (Germany)

Element Materials Technology (UK)

T?V Rheinland AG Group (Germany)

Applus Services S.A. (Spain)

T?V Nord Group (Germany)

Tribogenics (US)

Torontech (Canada)

Sciaps (US)

Qsx Instruments (US)

Xenometrix (Israel)

## Research Coverage

The study segments the PMI market report into offering (equipment and services); the PMI equipment market has been further segmented into technique (XRF and OES) and form factor (portable analyzers and benchtop analyzers). The PMI market study also

*Positive Material Identification Market by Offering (Equipment and Services), Technique (XRF and OES), Form Fa...*

covers industries and provides the geographic forecast of the market size for various segments with regard to 4 main regions—North America, Europe, Asia Pacific (APAC), and Rest of the World (RoW).

### Reasons to buy the report

The report would help the market leaders/new entrants in this market in the following ways:

1. This report segments the PMI market comprehensively and provides the closest approximations of the overall market size and those of the subsegments across different applications and regions.
2. The report provides the detailed analysis of the PMI market with the help of competitive leadership mapping, and value chain analysis including key companies in the market and their relations in the ecosystem.
3. The report helps stakeholders to understand the pulse of the market and provides them information on the key market drivers, restraints, challenges, and opportunities.
4. This report would help stakeholders to understand their competitors better and gain insights to enhance their position in the business.
5. The competitive landscape section includes the competitor ecosystem along with the recent and important developments, including expansions, and mergers and acquisitions in the PMI market.

## Contents

### 1 INTRODUCTION

- 1.1 OBJECTIVES OF STUDY
- 1.2 DEFINITION
- 1.3 SCOPE OF STUDY
  - 1.3.1 MARKETS COVERED
  - 1.3.2 GEOGRAPHIC SCOPE
  - 1.3.3 YEARS CONSIDERED FOR STUDY
- 1.4 CURRENCY
- 1.5 PACKAGE SIZE
- 1.6 STAKEHOLDERS

### 2 RESEARCH METHODOLOGY

- 2.1 RESEARCH DATA
  - 2.1.1 SECONDARY DATA
    - 2.1.1.1 Secondary sources
  - 2.1.2 PRIMARY DATA
    - 2.1.2.1 Key data obtained from primary sources
    - 2.1.2.2 Key industry insights
    - 2.1.2.3 Breakdown of primaries
- 2.2 MARKET SIZE ESTIMATION
  - 2.2.1 BOTTOM-UP APPROACH
  - 2.2.2 TOP-DOWN APPROACH
- 2.3 MARKET BREAKDOWN & DATA TRIANGULATION
- 2.4 RESEARCH ASSUMPTIONS
- 2.5 LIMITATIONS

### 3 EXECUTIVE SUMMARY

### 4 PREMIUM INSIGHTS

- 4.1 ATTRACTIVE OPPORTUNITIES IN PMI MARKET
- 4.2 PMI MARKET, BY OFFERING
- 4.3 PMI EQUIPMENT MARKET, BY TECHNIQUE
- 4.4 PMI EQUIPMENT MARKET, BY FORM FACTOR
- 4.5 PMI MARKET, BY INDUSTRY & BY REGION

4.6 PMI MARKET, BY INDUSTRY

4.7 PMI MARKET, BY COUNTRY

## **5 MARKET OVERVIEW**

5.1 VALUE CHAIN ANALYSIS

5.2 MARKET DYNAMICS

5.2.1 DRIVERS

5.2.1.1 Stringent safety regulations by governments and quality control requirements

5.2.1.2 Declining efficiencies of aging assets and the subsequent need for operational safety

5.2.1.3 Innovative technological advancements in PMI equipment

5.2.2 RESTRAINT

5.2.2.1 High cost associated with PMI equipment

5.2.3 OPPORTUNITIES

5.2.3.1 Growing number of large-scale infrastructure projects globally

5.2.3.2 Growing preference to outsource PMI testing and inspection services to third-party service providers

5.2.4 CHALLENGES

5.2.4.1 Lack of skilled personnel for handling PMI equipment

## **6 PMI MARKET, BY OFFERING**

6.1 INTRODUCTION

6.2 EQUIPMENT

6.3 SERVICES

## **7 PMI EQUIPMENT MARKET, BY TECHNIQUE**

7.1 INTRODUCTION

7.2 X-RAY FLUORESCENCE (XRF)

7.3 OPTICAL EMISSION SPECTROMETRY (OES)

## **8 PMI EQUIPMENT MARKET, BY FORM FACTOR**

8.1 INTRODUCTION

8.2 PORTable ANALYZERS

8.3 BENCHTOP ANALYZERS

## **9 PMI MARKET, BY INDUSTRY**

- 9.1 INTRODUCTION
- 9.2 OIL & GAS
- 9.3 METALS & HEAVY MACHINERY
- 9.4 AEROSPACE & DEFENSE
- 9.5 AUTOMOTIVE
- 9.6 CHEMICALS
- 9.7 INFRASTRUCTURE
- 9.8 PHARMACEUTICAL
- 9.9 POWER GENERATION
- 9.10 SCRAP RECYCLING

## **10 GEOGRAPHIC ANALYSIS**

- 10.1 INTRODUCTION
- 10.2 NORTH AMERICA
  - 10.2.1 US
  - 10.2.2 CANADA
  - 10.2.3 MEXICO
- 10.3 EUROPE
  - 10.3.1 GERMANY
  - 10.3.2 UK
  - 10.3.3 FRANCE
  - 10.3.4 REST OF EUROPE (ROE)
- 10.4 ASIA PACIFIC (APAC)
  - 10.4.1 CHINA
  - 10.4.2 JAPAN
  - 10.4.3 INDIA
  - 10.4.4 REST OF APAC (ROAPAC)
- 10.5 REST OF THE WORLD (ROW)
  - 10.5.1 SOUTH AMERICA
  - 10.5.2 MIDDLE EAST & AFRICA (MEA)

## **11 COMPETITIVE LANDSCAPE**

- 11.1 OVERVIEW
- 11.2 MARKET RANKING ANALYSIS
- 11.3 COMPETITIVE SCENARIO

### 11.3.1 PRODUCT LAUNCHES & DEVELOPMENTS

### 11.3.2 MERGERS & ACQUISITIONS

### 11.3.3 EXPANSIONS

## 12 COMPANY PROFILES

(Business overview, Products offered, Recent developments, MNM view, SWOT analysis)\*

### 12.1 EQUIPMENT PROVIDER

#### 12.1.1 OLYMPUS

#### 12.1.2 THERMO FISHER

#### 12.1.3 BRUKER

#### 12.1.4 HITACHI

#### 12.1.5 AMETEK

#### 12.1.6 SHIMADZU

#### 12.1.7 PANALYTICAL

### 12.2 SERVICE PROVIDER

#### 12.2.1 SGS

#### 12.2.2 BUREAU VERITAS

#### 12.2.3 INTERTEK

#### 12.2.4 T?V S?D

#### 12.2.5 ELEMENT MATERIALS TECHNOLOGY

#### 12.2.6 T?V RHEINLAND

#### 12.2.7 APPLUS

#### 12.2.8 T?V NORD

\*Business overview, Products offered, Recent developments, MNM view, SWOT analysis might not be captured in case of unlisted companies.

### 12.3 KEY INNOVATORS

#### 12.3.1 TRIBOGEINCS

#### 12.3.2 TORONTECH

#### 12.3.3 SCIAPS

#### 12.3.4 QSX INSTRUMENTS

#### 12.3.5 XENOMETRIX

## 13 APPENDIX



13.1 INSIGHTS OF INDUSTRY EXPERTS

13.2 DISCUSSION GUIDE

13.3 KNOWLEDGE STORE: MARKETSANDMARKETS' SUBSCRIPTION PORTAL

13.4 INTRODUCING RT: REAL-TIME MARKET INTELLIGENCE

13.5 AVAILABLE CUSTOMIZATIONS

13.6 RELATED REPORTS

13.7 AUTHOR DETAILS

## List Of Tables

### LIST OF TABLES

Table 1 ASSUMPTIONS OF PMI MARKET STUDY

Table 2 LIMITATIONS OF PMI MARKET STUDY

Table 3 PMI MARKET, BY OFFERING, 2015–2023 (USD MILLION)

Table 4 PMI MARKET FOR EQUIPMENT, BY INDUSTRY, 2015–2023 (USD MILLION)

Table 5 PMI MARKET FOR EQUIPMENT, BY REGION, 2015–2023 (USD MILLION)

Table 6 PMI MARKET FOR EQUIPMENT IN NORTH AMERICA, BY COUNTRY, 2015–2023 (USD MILLION)

Table 7 PMI MARKET FOR EQUIPMENT IN EUROPE, BY COUNTRY, 2015–2023 (USD MILLION)

Table 8 PMI MARKET FOR EQUIPMENT IN APAC, BY COUNTRY, 2015–2023 (USD MILLION)

Table 9 PMI MARKET FOR EQUIPMENT IN ROW, BY REGION, 2015–2023 (USD MILLION)

Table 10 PMI MARKET FOR SERVICES, BY INDUSTRY, 2015–2023 (USD MILLION)

Table 11 PMI MARKET FOR SERVICES, BY REGION, 2015–2023 (USD MILLION)

Table 12 PMI MARKET FOR SERVICES IN NORTH AMERICA, BY COUNTRY, 2015–2023 (USD MILLION)

Table 13 PMI MARKET FOR SERVICES IN EUROPE, BY COUNTRY, 2015–2023 (USD MILLION)

Table 14 PMI MARKET FOR SERVICES IN APAC, BY COUNTRY, 2015–2023 (USD MILLION)

Table 15 PMI MARKET FOR SERVICES IN ROW, BY REGION, 2015–2023 (USD MILLION)

Table 16 DISTINCTION BETWEEN XRF AND OES

Table 17 PMI EQUIPMENT MARKET, BY TECHNIQUE, 2015–2023 (USD MILLION)

Table 18 PMI EQUIPMENT MARKET, BY TECHNIQUE, 2015–2023 (THOUSAND UNITS)

Table 19 DISTINCTION BETWEEN WDXRF AND EDXRF

Table 20 PMI EQUIPMENT MARKET FOR XRF, BY FORM FACTOR, 2015–2023 (USD MILLION)

Table 21 PMI EQUIPMENT MARKET FOR XRF, BY INDUSTRY, 2015–2023 (USD MILLION)

Table 22 PMI EQUIPMENT MARKET FOR XRF, BY REGION, 2015–2023 (USD MILLION)

Table 23 PMI EQUIPMENT MARKET FOR XRF IN NORTH AMERICA, BY COUNTRY,

2015–2023 (USD MILLION)

Table 24 PMI EQUIPMENT MARKET FOR XRF IN EUROPE, BY COUNTRY,  
2015–2023 (USD MILLION)

Table 25 PMI EQUIPMENT MARKET FOR XRF IN APAC, BY COUNTRY, 2015–2023  
(USD MILLION)

Table 26 PMI EQUIPMENT MARKET FOR XRF IN ROW, BY REGION, 2015–2023  
(USD MILLION)

Table 27 PMI EQUIPMENT MARKET FOR OES, BY FORM FACTOR, 2015–2023  
(USD MILLION)

Table 28 PMI EQUIPMENT MARKET FOR OES, BY INDUSTRY, 2015–2023 (USD  
MILLION)

Table 29 PMI EQUIPMENT MARKET FOR OES, BY REGION, 2015–2023 (USD  
MILLION)

Table 30 PMI EQUIPMENT MARKET FOR OES IN NORTH AMERICA, BY COUNTRY,  
2015–2023 (USD MILLION)

Table 31 PMI EQUIPMENT MARKET FOR OES IN EUROPE, BY COUNTRY,  
2015–2023 (USD MILLION)

Table 32 PMI EQUIPMENT MARKET FOR OES IN APAC, BY COUNTRY, 2015–2023  
(USD MILLION)

Table 33 PMI EQUIPMENT MARKET FOR OES IN ROW, BY REGION, 2015–2023  
(USD MILLION)

Table 34 PMI EQUIPMENT MARKET, BY FORM FACTOR, 2015–2023 (USD MILLION)

Table 35 RECENT INNOVATIONS IN PORTABLE/HANDHELD PMI ANALYZERS:  
SELECTED LIMITS OF DETECTION (LODS) VS. TIME (TECHNOLOGY) IN IRON  
ALLOYS

Table 36 PMI EQUIPMENT MARKET FOR PORTABLE, BY TECHNIQUE, 2015–2023  
(USD MILLION)

Table 37 PMI EQUIPMENT MARKET FOR BENCHTOP, BY TECHNIQUE, 2015–2023  
(USD MILLION)

Table 38 PMI MARKET, BY INDUSTRY, 2015–2023 (USD MILLION)

Table 39 PMI EQUIPMENT MARKET FOR OIL AND GAS INDUSTRY, BY  
TECHNIQUE, 2015–2023 (USD MILLION)

Table 40 PMI MARKET FOR OIL AND GAS INDUSTRY, BY REGION, 2015–2023  
(USD MILLION)

Table 41 PMI EQUIPMENT MARKET FOR METALS AND HEAVY MACHINERY  
INDUSTRY, BY TECHNIQUE, 2015–2023 (USD MILLION)

Table 42 PMI MARKET FOR METALS AND HEAVY MACHINERY INDUSTRY, BY  
REGION, 2015–2023 (USD MILLION)

Table 43 PMI EQUIPMENT MARKET FOR AEROSPACE AND DEFENSE INDUSTRY,

BY TECHNIQUE, 2015–2023 (USD MILLION)

Table 44 PMI MARKET FOR AEROSPACE AND DEFENSE INDUSTRY, BY REGION, 2015–2023 (USD MILLION)

Table 45 PMI EQUIPMENT MARKET FOR AUTOMOTIVE INDUSTRY, BY TECHNIQUE, 2015–2023 (USD MILLION)

Table 46 PMI MARKET FOR AUTOMOTIVE INDUSTRY, BY REGION, 2015–2023 (USD MILLION)

Table 47 PMI EQUIPMENT MARKET FOR CHEMICALS INDUSTRY, BY TECHNIQUE, 2015–2023 (USD MILLION)

Table 48 PMI MARKET FOR CHEMICALS INDUSTRY, BY REGION, 2015–2023 (USD MILLION)

Table 49 PMI EQUIPMENT MARKET FOR INFRASTRUCTURE INDUSTRY, BY TECHNIQUE, 2015–2023 (USD MILLION)

Table 50 PMI MARKET FOR INFRASTRUCTURE INDUSTRY, BY REGION, 2015–2023 (USD MILLION)

Table 51 PMI EQUIPMENT MARKET FOR PHARMACEUTICAL INDUSTRY, BY TECHNIQUE, 2015–2023 (USD MILLION)

Table 52 PMI MARKET FOR PHARMACEUTICAL INDUSTRY, BY REGION, 2015–2023 (USD MILLION)

Table 53 PMI EQUIPMENT MARKET FOR POWER GENERATION INDUSTRY, BY TECHNIQUE, 2015–2023 (USD MILLION)

Table 54 PMI MARKET FOR POWER GENERATION INDUSTRY, BY REGION, 2015–2023 (USD MILLION)

Table 55 PMI EQUIPMENT MARKET FOR SCRAP RECYCLING INDUSTRY, BY TECHNIQUE, 2015–2023 (USD MILLION)

Table 56 PMI MARKET FOR SCRAP RECYCLING INDUSTRY, BY REGION, 2015–2023 (USD MILLION)

Table 57 PMI MARKET, BY REGION, 2015–2023 (USD MILLION)

Table 58 PMI MARKET IN NORTH AMERICA, BY COUNTRY, 2015–2023 (USD MILLION)

Table 59 PMI MARKET IN NORTH AMERICA, BY INDUSTRY, 2015–2023 (USD MILLION)

Table 60 PMI MARKET IN EUROPE, BY COUNTRY, 2015–2023 (USD MILLION)

Table 61 PMI MARKET IN EUROPE, BY INDUSTRY, 2015–2023 (USD MILLION)

Table 62 PMI MARKET IN APAC, BY COUNTRY, 2015–2023 (USD MILLION)

Table 63 PMI MARKET IN APAC, BY INDUSTRY, 2015–2023 (USD MILLION)

Table 64 PMI MARKET IN ROW, BY REGION, 2015–2023 (USD MILLION)

Table 65 PMI MARKET IN ROW, BY INDUSTRY, 2015–2023 (USD MILLION)

Table 66 TOP 5 PLAYERS IN PMI MARKET – EQUIPMENT PROVIDERS (2017)

Table 67 TOP 5 PLAYERS IN PMI MARKET – SERVICE PROVIDERS (2017)

Table 68 PRODUCT DEVELOPMENTS AND LAUNCHES (2016–2017)

Table 69 MERGERS AND ACQUISITIONS (2013–2017)

Table 70 EXPANSIONS (2015–2017)

## About

The report "Positive Material Identification Market by Offering (Equipment and Services), Technique (XRF and OES), Form Factor (Portable Analyzers and Benchtop Analyzers), Industry (Chemicals, Automotive, Scrap Recycling), and Geography - Global Forecast to 2023", The positive material identification (PMI) market is expected to reach to USD 2.89 Billion by 2023 from USD 1.99 Billion in 2018, at a CAGR of 7.79% between 2018 and 2023. The growth of this market is mainly driven by stringent safety regulations by governments and quality control requirements, declining efficiencies of aging assets and the subsequent need for operational safety, and innovative technological advancements in PMI equipment.

**The report also covers other key players involved in this market are:**

Tribogeincs,

Torontech,

Sciaps,

Qsx Instruments and

Xenometrix

SGS Olympus, Thermo Fisher, Bruker, Hitachi, SGS, Bureau Veritas, Intertek, TUV SUD, and Element Materials Technology are the major players included in the report with market ranking analysis.

### **XRF held larger size of PMI equipment market in 2017**

The development of XRF instruments with high spatial resolution analysis capability is one of the major innovations in the XRF analyzers. These analyzers are now widely used by PMI experts, researchers, and analysts in various applications, such as metallurgy, forensics, polymers, electronics, archaeology, and environmental analysis.

XRF technique is mainly based on 2 methodologies-- energy-dispersive X-ray fluorescence (EDXRF) and wavelength- dispersive X-ray fluorescence (WDXRF).

### **PMI equipment market for portable analyzers is expected to grow at higher CAGR during forecast period**

Portable or handheld PMI equipment types are generally the XRF analyzers. These equipment types are among the widely used equipment due to their small size and lower prices than that of OES analyzers and are known to be based on the purest form of NDT technique. Alloy producers, cast houses, and scrap operations are some of the prime users for the portable PMI analyzers. Oil and gas, metals and heavy machinery, scrap and recycling, and chemicals are some of the major industries that use portable analyzers.

### **PMI market for oil and gas industry held the largest share in 2017**

The oil and gas industry includes refineries, transmission pipelines, subsea pipelines, and storage tanks. PMI is an effective tool in situations when the material is received with an inappropriate or demolished component certificate, or if it is otherwise missing. It can be used to address the doubt about the composition of components of a material. PMI solutions for the oil and gas industry include material verification services with qualitative and quantitative analyses.

### **APAC accounted for largest share of PMI market in 2017**

China is a prominent exporter to several countries around the world; this has led to the rise in the TIC services in the country to ensure compliance of the exported materials with the international standards. Many infrastructural development projects are under construction in this region and are scheduled to be completed during the forecast period considered for this market. The demand for automobiles in this region is estimated to grow by 2023, which would result in the need to increase manufacturing of vehicles. To address this need, the companies have to perform optimally, which can be achieved by the implementation of the PMI methods.

## I would like to order

Product name: Positive Material Identification Market by Offering (Equipment and Services), Technique (XRF and OES), Form Factor (Portable Analyzers and Benchtop Analyzers), Industry (Chemicals, Automotive, Scrap Recycling), and Geography - Global Forecast to 2023

Product link: <https://marketpublishers.com/r/P812939F360EN.html>

Price: US\$ 5,650.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/P812939F360EN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:  
Last name:  
Email:  
Company:  
Address:  
City:  
Zip code:  
Country:  
Tel:  
Fax:  
Your message:

**\*\*All fields are required**

Customer signature \_\_\_\_\_

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below



and fax the completed form to +44 20 7900 3970