

Piezoelectric Materials – A Global Market Overview

“The report reviews, analyzes and projects the global market for Piezoelectric Materials for the period 2014-2023. Global markets for Piezoelectric Materials types analyzed comprise Piezoceramics, Piezocomposites, Piezocrystals and Piezopolymers. The consumption of piezoelectric materials in various applications studied in this report include Actuators, Generators, Motors, Sensors, Transducers and Others. The report is also explores the market for piezoelectric materials in various end-use industries comprising Aerospace & Defense, Automotive, Consumer Goods, Healthcare, Information & Telecommunication and Others.”

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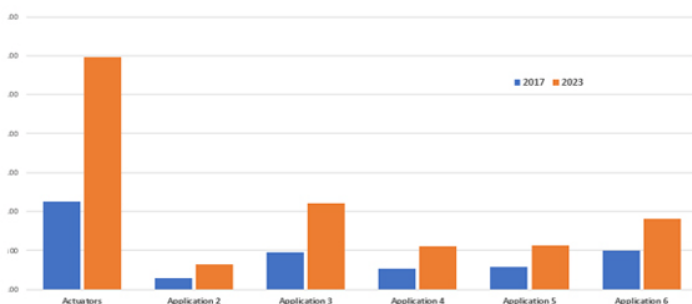
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Report Synopsis

Piezoelectric materials constitute various types of ceramics, polymers, crystals and composites that can generate a voltage when being subjected to an external pressure or, conversely, expand upon the application of a voltage. A piezoelectric material's response to mechanical forces/pressures resulting in the generation of electric charges/voltages is referred to as the direct piezoelectric effect. In contrast, the application of electric charges/fields causing the induction of mechanical stresses or strains is termed as the converse piezoelectric effect.

Asia-Pacific leads the global market in terms of demand for piezoelectric materials, which is likely to be sustained by burgeoning auto and consumer electronics industries. The use of piezoelectric materials in the automotive sector has grown by leaps and bounds and they are finding application in fuel injectors, tire pressure sensors, engine knock sensors, backup sensors, dynamic pressure sensors and a number of other crucial safety features common in modern cars.

Global Piezoelectric Materials Market by Application 2017 and 2023



Source: Industry Experts, Inc. <http://industry-experts.com>

Research Findings & Coverage

- Worldwide market for Piezoelectric Materials is explored in this report with respect to material type, applications and end-use industries
- The study exclusively analyzes each reporting segment of piezoelectric material by geographic region and key country in each region
- Organic Pigments for Automotive Finishes: Some Latest Developments
- Organic Pigments Brightening the Plastics Industry
- Recent Progress in Toner Technology with Organic Pigments

- Key business trends focusing on product innovations/developments, M&As, JVs and other recent industry developments
- Major companies profiled – 29
- The industry guide includes the contact details for 84 companies

Product Outline

The report analyzes the market for the key types of Piezoelectric Materials including:

- Piezoceramics
- Piezocomposites
- Piezocrystals
- Piezopolymers

Applications of Piezoelectric Materials, based on devices, analyzed in this study comprise the following:

- Actuators
- Generators
- Motors
- Sensors
- Transducers
- Other Applications

The study examines the global markets for end-use industries of Piezoelectric Materials including the following:

- Aerospace & Defense
- Automotive
- Consumer Goods
- Healthcare
- Information & Telecommunication
- Other End-Use Industries

Analysis Period, Units and Growth Rates

- The report reviews, analyzes and projects the global Piezoelectric Materials market for the period 2014-2023 in terms of market value in US\$; and the compound annual growth rates (CAGRs) projected from 2017 through 2023

Geographic Coverage

- North America** (The United States, Canada and Mexico)
- Europe** (France, Germany, Italy, Russia, Spain, The United Kingdom and Rest of Europe)
- Asia-Pacific** (China, India, Japan, South Korea and Rest of Asia-Pacific)
- South America** (Argentina, Brazil and Rest of South America)
- Rest of World**

SAMPLE COMPANY PROFILE

CERAMTEC GMBH (GERMANY)

CeramTec-Platz 1–9, 73207 Plochingen
Phone: +49.7153.611-0, Fax: +49.7153.25421
Website: www.ceramtec.com

Business Overview

Established in 1977, Ceramtec GmbH (Ceramtec) produces and supplies advanced ceramics and materials with well over 10,000 varied products for a wide range of applications worldwide. The company is specialized in the development, manufacturing and sales of parts, components and products made from ceramic materials. Ceramtec’s ceramics and materials are used in automotive industry, in electronics, energy and environmental technology, equipment, mechanical, and medical engineering applications. With more than 3,500 employees and production sites and subsidiaries in Europe, America and Asia, CeramTec has a worldwide presence. Ceramtec has offices in Guernsey, London, Frankfurt, Paris, Milan, Luxembourg and Hong Kong.

Product Analysis

Piezo-ceramics in Automotive Engineering

Knock sensors, back-up sensors, acceleration sensors, gyroscopes, sonar transducers for object recognition, sonar transducers for positioning/navigation, level sensors, air-mass meters and power generation for tire pressure sensors

Piezo-ceramics in Equipment and Mechanical Engineering

Ultrasonic distance sensors, Level sensors, Flow rate measurement (liquid and gaseous media), Ultrasonic cleaning, Ultrasonic welding (plastic and metal), Ultrasonic material processing, Non-destructive material testing and Active vibration dampening of tools

Piezo Ceramic Components

CeramTec presents a wide range of PZT and dielectric materials for all of your capacitor, sensing and transducer requirements.

Piezoceramic Composites

The Technical Ceramics business of CeramTec supplies piezoceramic composites offer divergent requirements of a wide variety of ultrasound and sonar applications.

Lead Zirconate Titanate (PZT)

Lead Zirconate Titanate (PZT)’s attributes of producing an electrical charge when mechanically compressed or vibrating when an electrical charge is applied, make it very conducive for passive sensing, active transmitting and mechanical displacement applications.

Ceramtec utilize three predominant types of piezoelectric materials, each providing a set of unique properties suitable for a range of applications. These three types of piezoelectric ceramics include our High Power “Hard” variant, our High Sensitivity “Soft” variant and also custom made materials.

Oxide Ceramics – Aluminum Oxide (Al2O3)

Alumina or aluminum oxide (Al2O3) in its various levels of purity is used more often than any other advanced ceramic material. CeramTec offers a wide range of material types with different property profiles that can be adjusted via a targeted matrix design.

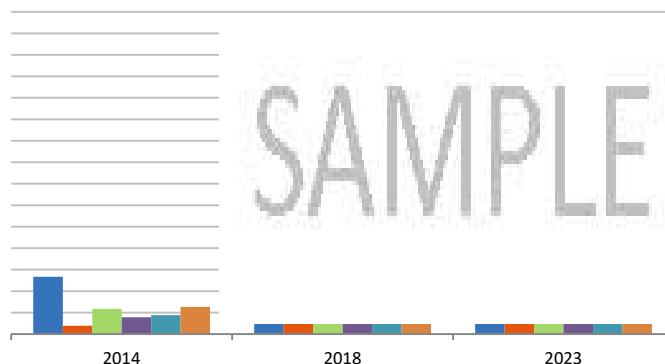
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SAMPLE TABLE/CHART

Glance at 2018 Global Piezoelectric Materials Market Share (%) by Geographic Region – North America, Europe, Asia-Pacific, South America and Rest of World



Asia-Pacific Piezoelectric Materials Market Analysis (2014-2023) by Application – Actuators, Generators, Motors, Sensors, Transducers and Other Applications in USD Million



KEY PLAYERS PROFILED

- APC International Ltd.
- Arkema SA
- Cedrat Technologies SA
- Ceramtec GmbH
- CTS Corporation
- Harris Corporation
- Kureha Corporation
- Kyocera Corporation
- Morgan Advanced Materials Plc
- Physik Instrumente (PI) GmbH & Co., KG.
- PI Ceramic GmbH
- Piezo Kinetics, Inc.
- Qortek, Inc.
- SEPR - Saint-Gobain Zirpro
- Smart Material Corporation
- Solvay SA
- TDK Corporation

.....more

TABLE OF CONTENTS

PART A: GLOBAL MARKET PERSPECTIVE 1

1. INTRODUCTION1

1.1 Product Outline.....	4
1.1.1 Piezoelectric Materials: An Overview	4
1.1.1.1 A History of Piezoelectricity	4
1.1.1.2 Types of Piezoelectric Materials	5
1.1.1.2.1 Piezocrystals	5
1.1.1.2.2 Piezoceramics	6
1.1.1.2.2.1 Barium Titanate (BaTiO ₃)	6
1.1.1.2.2.1.1 Synthesis of Barium Titanate	7
<i>Conventional Solid-State Reaction</i>	7
<i>Chemical Methods</i>	7
<i>Sol-Gel Method</i>	7
<i>Hydrothermal Method</i>	8
<i>Coprecipitation Method</i>	9
<i>Polymeric Precursor Method</i>	9
<i>Mechanochemical Synthesis</i>	10
1.1.1.2.2.1.2 Piezoelectric Properties of BaTiO ₃	11
1.1.1.2.2.2 Lead Zirconate Titanate (PZT)	11
1.1.1.2.2.3 Lead Titanate (PbTiO ₃)	12
1.1.1.2.3 Piezopolymers.....	12
1.1.1.2.3.1 Semicrystalline Piezopolymers.....	13
1.1.1.2.3.1.1 Polyvinylidene Fluoride (PVDF)	14
1.1.1.2.3.1.2 Poly(Vinylidene Fluoride-Trifluoroethylene and Tetrafluoroethylene) Copolymers.....	15
1.1.1.2.3.1.3 Other Semicrystalline Polymers	16
<i>Polyamides</i>	16
<i>Polyureas</i>	17
<i>Biopolymers</i>	18
1.1.1.2.3.2 Amorphous Piezopolymers	18
1.1.1.2.3.2.1 Polyvinyl Chloride (PVC).....	19
1.1.1.2.3.2.2 PVDCN Copolymers	19
1.1.1.2.3.2.3 Other VDCN Polymers.....	19
1.1.1.2.3.2.4 Polyacrylonitrile (PAN)	20
1.1.1.2.3.2.5 Nitrile-Substituted Polyimide.....	20
1.1.1.2.3.2.6 Even Numbered Nylons	21
1.1.1.2.4 Piezocomposites	21
1.1.2 Applications of Piezoelectric Materials Based On Devices	22
1.1.2.1 Actuators	22
1.1.2.1.1 Ceramic Actuator Materials	22
1.1.2.1.2 Modes of Displacement in Piezoelectric Actuators	23
1.1.2.1.2.1 Longitudinal Stack Actuators	23
1.1.2.1.2.2 Shear Actuators	24
1.1.2.1.2.3 Tube Actuators	25
1.1.2.1.2.4 Contracting Actuators	27
1.1.2.1.2.5 Bending Actuators	27
1.1.2.1.3 Actuator Designs.....	29
1.1.2.1.4 Drive/Control Techniques	30
1.1.2.2 Generators	30
1.1.2.2.1 Piezoelectric Materials Used in Generators ...	30
1.1.2.2.2 Structures of Piezoelectric Generators	32
1.1.2.2.3 Structures with a Piezoelectric Actuator of another Shape	33
1.1.2.3 Motors	34
1.1.2.3.1 Resonance-Drive (Piezoelectric Ultrasonic Motors).....	34
1.1.2.3.1.1 Single-Mode Excitation Type Motors	35
1.1.2.3.1.1.1 When Piezoelectric Element is Fully Driven	35
1.1.2.3.1.1.2 When Piezoelectric Element is Partially Driven	35
1.1.2.3.1.2 Multi-Mode Excitation Type Motors	36
1.1.2.3.1.2.1 One Driving Source (Frequency Change Controls the Direction)	36

1.1.2.3.1.2.2 One Driving Source (Driven Part Controls the Direction).....	36
1.1.2.3.2 Inertia-Drive-Type Piezoelectric Motors ...	38
1.1.2.3.3 Piezo-Walk-Drive-Type Piezoelectric Motors..	40
1.1.2.4 Sensors	42
1.1.2.4.1 Piezo Acceleration Sensors or Accelerometers.....	43
1.1.2.4.1.1 Shear Mode	43
1.1.2.4.1.2 Compression Mode.....	44
1.1.2.4.1.3 Piezoelectric Bender	44
1.1.2.4.1.4 Benefit of Piezoelectric Accelerometers	45
1.1.2.4.2 Piezoelectric Force Sensors.....	45
1.1.2.4.2.1 Low Impedance Voltage Mode (LIVM) Force Sensors.....	45
1.1.2.4.2.2 Charge Mode Force Sensors	46
1.1.2.4.3 Piezoelectric Pressure Sensors.....	47
1.1.2.5 Transducers	48
1.1.2.5.1 Materials for Piezo Transducers.....	48
1.1.2.5.2 Measuring Efficiency of Piezo Transducers	49
1.1.2.5.3 Benefits of Piezoelectric Transducers	49
1.1.2.5.4 Disadvantages of Piezoelectric Transducers... 49	
1.1.2.6 Other Applications.....	49
1.1.2.6.1 Resonators and Filters	49
1.1.2.6.2 SAW Devices	50
1.1.2.6.3 Transformers	51
1.1.3 Applications of Piezoelectric Materials by End-Use Industry.....	53
1.1.3.1 Aerospace & Defense.....	53
1.1.3.1.1 Micro-Thrusters for Satellites	53
1.1.3.1.2 Active Vibration Damping	53
1.1.3.1.3 Structural Health Monitoring.....	54
1.1.3.1.4 Micro Robotics.....	54
1.1.3.1.5 Bullets that Change Course	55
1.1.3.2 Automotive	55
1.1.3.2.1 Piezo Automotive Actuators	55
1.1.3.2.2 Piezo Fuel Injectors	55
1.1.3.2.3 Piezo Pressure & Level Sensors and Air Transducers	56
1.1.3.3 Consumer Goods and Information & Telecommunication	56
1.1.3.3.1 Dot-Matrix Printers.....	56
1.1.3.3.2 Inkjet Printers	56
1.1.3.3.3 Piezoelectric Speakers	56
1.1.3.3.4 Piezoelectric Buzzers.....	56
1.1.3.3.5 Piezoelectric Humidifiers	57
1.1.3.3.6 Electronic Toothbrushes	57
1.1.3.3.7 Musical Applications.....	57
1.1.3.3.7.1 Instrument Pickups	57
1.1.3.3.7.2 Microphones.....	57
1.1.3.3.8 Piezoelectric Igniters.....	57
1.1.3.4 Healthcare	58
1.1.3.4.1 Ultrasonic Dental Scalers	58
1.1.3.4.2 Ultrasonic Surgery Instruments	58
1.1.3.4.3 Ultrasound Scanners.....	59
1.1.3.4.4 Other Healthcare Applications.....	59
1.1.3.5 Other Industries.....	60
1.1.3.5.1 Industrial Equipment	60
1.1.3.5.1.1 Ultrasonic Cleaning	60
1.1.3.5.1.2 Ultrasonic Level Meters	60
1.1.3.5.1.3 Ultrasonic Welding.....	60
1.1.3.5.2 Test and Measurement Instruments.....	61
1.1.3.5.2.1 Flow Meters	61
1.1.3.5.2.2 Ultrasonic Non-Destructive Testing	62
1.1.3.5.3 Optical Communication and Laser Systems....	62
1.1.3.5.3.1 Interferometers	62
1.1.3.5.3.2 Tunable Lasers	63
1.1.3.5.4 Sonar Systems.....	63

1.1.3.5.4.1 Underwater Imaging	63
1.1.3.5.4.2 Fishfinders	63
1.1.3.5.4.3 Sonars for Underwater Communication	64

2. KEY MARKET TRENDS65

2.1 Lead-Free Piezoceramics Alternative to Lead-Based PZT	65
2.2 Energy Harvesting Applications Get a Boost with Biodegradable Piezoelectric Polymer	66
2.3 Piezoelectric Materials Moving from Hard to Soft... 67	
2.4 Piezos Help in Reducing Contaminating Auto Gases 71	
2.5 Biomedical Systems Being Powered with Piezoelectric and Triboelectric Energy Harvesters... 71	
2.6 Biodegradable Piezoelectric Force Sensor Offer Opportunity in Healthcare Applications	72

3. KEY GLOBAL PLAYERS73

APC International Ltd. (The United States)	73
Arkema Sa (France)	74
Cedrat Technologies Sa (France).....	74
Ceramtec GmbH (Germany)	75
CTS Corporation (The United States)	78
Noliac A/S (Denmark)	80
Harris Corporation (The United States)	82
Kureha Corporation (Japan).....	84
Kyocera Corporation (Japan)	85
Morgan Advanced Materials Plc (The United Kingdom) . 88	
Physik Instrumente (Pi) GmbH & Co., Kg. (Germany)..... 91	
PI Ceramic GmbH (Germany).....	92
Piezo Kinetics, Inc. (The United States).....	95
Channel Technologies Group, Llc (The United States) . 96	
Qortek, Inc. (The United States)	97
SEPR - Saint-Gobain Zirpro (France).....	99
Smart Material Corporation (The United States)	100
Solvay Sa (Belgium)	101
TDK Corporation (Japan).....	101

4. KEY BUSINESS TRENDS102

CTS Corporation Launches Piezoelectric Multilayer Plate Stacks at Actuator Conference 2018 in Bremen, Germany102	
CTS Corporation Offers Piezoelectric Single Crystals 102	
TDK Corporation Launches PowerHap™ Piezo Actuators 102	
Piezoelectric Single Crystals from CTS Corporation are Ideal for Ultrasound Healthcare Applications	103
Mide Technology Corporation Acquires Piezo Systems, Inc. 103	
Noliac A/S Expands its Piezoelectric Business in Czech Republic.....	103
PI Ceramic GmbH Manufactures Piezoelectric Tubes for Actuator Application.....	104
Aerotech, Inc Unveils QFOCUS® QF-50 Piezo Nano-positioning Stage	104
Aerotech, Inc Launches QNP3 series XYZ Piezo Positioning Stages.....	104
Piezo Kinetics Inc Acquires Channel Technologies Group's Ceramics Division	105
Aerotech, Inc Unveils QNP2 Series XY Piezo Nanopositioning Stage	105
Aerotech Inc Introduces QLe™ Panel-Mount Nanopositioning Piezo Drive.....	105

5. GLOBAL MARKET OVERVIEW106

5.1 Global Piezoelectric Materials Market Overview by Material Type.....	107
5.1.1 Piezoelectric Material Type Market Overview by Global Region	109
5.1.1.1 Piezoceramics	109
5.1.1.2 Piezocomposites	111
5.1.1.3 Piezocrystals	113
5.1.1.4 Piezopolymers	115
5.2 Global Piezoelectric Materials Market Overview by Application.....	117
5.2.1 Piezoelectric Application Market Overview by Global Region	119
5.2.1.1 Actuators	119

5.2.1.2 Generators 121

5.2.1.3 Motors 123

5.2.1.4 Sensors 125

5.2.1.5 Transducers 127

5.2.1.6 Other Applications 129

5.3 Global Piezoelectric Materials Market Overview
by End-Use Industry..... 131

5.3.1 Piezoelectric End-Use Industry Market Overview
by Global Region..... 133

5.3.1.1 Aerospace & Defense..... 133

5.3.1.2 Automotive 135

5.3.1.3 Consumer Goods 137

5.3.1.4 Healthcare 139

5.3.1.5 Information & Telecommunication..... 141

5.3.1.6 Other Industries..... 143

PART B: REGIONAL MARKET PERSPECTIVE ..145

REGIONAL MARKET OVERVIEW..... 147

6. NORTH AMERICA 147

6.1 North American Piezoelectric Materials Market
Overview by Geographic Region 148

6.2 North American Piezoelectric Materials Market
Overview by Material Type..... 150

6.3 North American Piezoelectric Materials Market
Overview by Application..... 152

6.4 North American Piezoelectric Materials Market
Overview by End-Use Industry..... 154

6.5 Major Market Players 156

Advanced Cerametrics, Inc. (United States).....156

Aerotech, Inc. (United States)157

APC International Ltd. (United States).....159

Channel Technologies Group, Llc (United States)159

CTS Corporation (United States).....160

Harris Corporation (United States)163

Mad City Labs, Inc. (United States)165

Mide Technology Corporation (United States)167

Piezo Systems, Inc. (United States).....168

Piezo Kinetics, Inc. (United States)169

Qortek, Inc. (United States).....171

Smart Material Corporation (United States).....173

6.6 Country-wise Analysis of North American
Piezoelectric Materials Market 174

6.6.1 The United States..... 174

6.6.1.1 United States Piezoelectric Materials Market
Overview by Material Type..... 175

6.6.1.2 United States Piezoelectric Materials Market
Overview by Application..... 177

6.6.1.3 United States Piezoelectric Materials Market
Overview by End-Use Industry..... 179

6.6.2 Canada..... 181

6.6.2.1 Canadian Piezoelectric Materials Market
Overview by Material Type..... 182

6.6.2.2 Canadian Piezoelectric Materials Market
Overview by Application..... 184

6.6.2.3 Canadian Piezoelectric Materials Market
Overview by End-Use Industry..... 186

6.6.3 Mexico..... 188

6.6.3.1 Mexican Piezoelectric Materials Market
Overview by Material Type..... 189

6.6.3.2 Mexican Piezoelectric Materials Market
Overview by Application..... 191

6.6.3.3 Mexican Piezoelectric Materials Market
Overview by End-Use Industry..... 193

7. EUROPE 195

7.1 European Piezoelectric Materials Market
Overview by Geographic Region 196

7.2 European Piezoelectric Materials Market
Overview by Material Type..... 198

7.3 European Piezoelectric Materials Market
Overview by Application..... 200

7.4 European Piezoelectric Materials Market
Overview by End-Use Industry..... 202

7.5 Major Market Players 204

Arkema Sa (France)..... 204

Piezotech (France) 204

Cedrat Technologies Sa (France) 206

Ceramtec GmbH (Germany)..... 207

Morgan Advanced Materials Plc (The United Kingdom) 210

Noliac A/S (Denmark)..... 213

Physik Instrumente (Pi) GmbH & Co., Kg. (Germany) 215

Pi Ceramic GmbH (Germany) 216

Piezomechanik Dr. Lutz Pickelmann GmbH (Germany) . 219

Piezosystem Jena GmbH (Germany) 220

SEPR - Saint-Gobain ZirPro (France) 221

Solvay Sa (Belgium)..... 222

7.6 Country-wise Analysis of European Piezoelectric
Materials Market 223

7.6.1 France 223

7.6.1.1 French Piezoelectric Materials Market
Overview by Material Type..... 224

7.6.1.2 French Piezoelectric Materials Market
Overview by Application..... 226

7.6.1.3 French Piezoelectric Materials Market
Overview by End-Use Industry..... 228

7.6.2 Germany 230

7.6.2.1 German Piezoelectric Materials Market
Overview by Material Type..... 230

7.6.2.2 German Piezoelectric Materials Market
Overview by Application..... 233

7.6.2.3 German Piezoelectric Materials Market
Overview by End-Use Industry..... 235

7.6.3 Italy 237

7.6.3.1 Italian Piezoelectric Materials Market
Overview by Material Type..... 238

7.6.3.2 Italian Piezoelectric Materials Market
Overview by Application..... 240

7.6.3.3 Italian Piezoelectric Materials Market
Overview by End-Use Industry..... 242

7.6.4 Russia 244

7.6.4.1 Russian Piezoelectric Materials Market
Overview by Material Type..... 245

7.6.4.2 Russian Piezoelectric Materials Market
Overview by Application..... 247

7.6.4.3 Russian Piezoelectric Materials Market
Overview by End-Use Industry..... 249

7.6.5 Spain..... 251

7.6.5.1 Spanish Piezoelectric Materials Market
Overview by Material Type..... 252

7.6.5.2 Spanish Piezoelectric Materials Market
Overview by Application..... 254

7.6.5.3 Spanish Piezoelectric Materials Market
Overview by End-Use Industry..... 256

7.6.6 The United Kingdom..... 258

7.6.6.1 United Kingdom Piezoelectric Materials
Market Overview by Material Type 259

7.6.6.2 United Kingdom Piezoelectric Materials
Market Overview by Application 261

7.6.6.3 United Kingdom Piezoelectric Materials
Market Overview by End-Use Industry 263

7.6.7 Rest of Europe..... 265

7.6.7.1 Rest of Europe Piezoelectric Materials Market
Overview by Material Type 266

7.6.7.2 Rest of Europe Piezoelectric Materials Market
Overview by Application 268

7.6.7.3 Rest of Europe Piezoelectric Materials Market
Overview by End-Use Industry..... 270

8. ASIA-PACIFIC..... 272

8.1 Asia-Pacific Piezoelectric Materials Market
Overview by Geographic Region..... 273

8.2 Asia-Pacific Piezoelectric Materials Market
Overview by Material Type..... 275

8.3 Asia-Pacific Piezoelectric Materials Market
Overview by Application..... 277

8.4 Asia-Pacific Piezoelectric Materials Market
Overview by End-Use Industry..... 279

8.5 Major Market Players 281

AAC Technologies Holdings, Inc. (China)..... 281

Kureha Corporation (Japan)..... 282

Kyocera Corporation (Japan) 283

Sparkler Ceramics Pvt., Ltd. (India) 286

TDK Corporation (Japan)..... 286

8.6 Country-wise Analysis of Asia-Pacific Piezoelectric
Market 287

8.6.1 China..... 287

8.6.1.1 Chinese Piezoelectric Materials Market
Overview by Material Type..... 288

8.6.1.2 Chinese Piezoelectric Materials Market
Overview by Application..... 290

8.6.1.3 Chinese Piezoelectric Materials Market
Overview by End-Use Industry..... 292

8.6.2 India..... 294

8.6.2.1 Indian Piezoelectric Materials Market
Overview by Material Type..... 295

8.6.2.2 Indian Piezoelectric Materials Market
Overview by Application..... 297

8.6.2.3 Indian Piezoelectric Materials Market
Overview by End-Use Industry..... 299

8.6.3 Japan 301

8.6.3.1 Japanese Piezoelectric Materials Market
Overview by Material Type..... 302

8.6.3.2 Japanese Piezoelectric Materials Market
Overview by Application..... 304

8.6.3.3 Japanese Piezoelectric Materials Market
Overview by End-Use Industry..... 306

8.6.4 South Korea 308

8.6.4.1 Korean Piezoelectric Materials Market
Overview by Material Type..... 309

8.6.4.2 Korean Piezoelectric Materials Market
Overview by Application..... 311

8.6.4.3 Korean Piezoelectric Materials Market
Overview by End-Use Industry..... 313

8.6.5 Rest of Asia-Pacific 315

8.6.5.1 Rest of Asia-Pacific Piezoelectric Materials
Market Overview by Material Type 316

8.6.5.2 Rest of Asia-Pacific Piezoelectric Materials
Market Overview by Application 318

8.6.5.3 Rest of Asia-Pacific Piezoelectric Materials
Market Overview by End-Use Industry 320

9. SOUTH AMERICA..... 322

9.1 South American Piezoelectric Materials Market
Overview by Geographic Region 323

9.2 South American Piezoelectric Materials Market
Overview by Material Type..... 325

9.3 South American Piezoelectric Materials Market
Overview by Application..... 327

9.4 South American Piezoelectric Materials Market
Overview by End-Use Industry..... 329

9.5 Country-wise Analysis of South American
Piezoelectric Materials Market..... 331

9.5.1 Argentina 331

9.5.1.1 Argentine Piezoelectric Materials Market
Overview by Material Type..... 332

9.5.1.2 Argentine Piezoelectric Materials Market
Overview by Application..... 334

9.5.1.3 Argentine Piezoelectric Materials Market
Overview by End-Use Industry..... 336

9.5.2 Brazil 338	10. REST OF WORLD 352	PART D: ANNEXURE 363
9.5.2.1 Brazilian Piezoelectric Materials Market Overview by Material Type 339	10.1 Rest of World Piezoelectric Materials Market Overview by Material Type 353	1. RESEARCH METHODOLOGY 363
9.5.2.2 Brazilian Piezoelectric Materials Market Overview by Application 341	10.2 Rest of World Piezoelectric Materials Market Overview by Application 355	2. FEEDBACK 365
9.5.2.3 Brazilian Piezoelectric Materials Market Overview by End-Use Industry 343	10.3 Rest of World Piezoelectric Materials Market Overview by End-Use Industry 357	
9.5.3 Rest of South America 345	PART C: GUIDE TO THE INDUSTRY 359	
9.5.3.1 Rest of South America Piezoelectric Materials Market Overview by Material Type 346	1. NORTH AMERICA 359	
9.5.3.2 Rest of South America Piezoelectric Materials Market Overview by Application 348	2. EUROPE 360	
9.5.3.3 Rest of South America Piezoelectric Materials Market Overview by End-Use Industry 350	3. ASIA-PACIFIC 361	
	4. SOUTH AMERICA 362	

About Industry Experts

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Business intelligence provides the critical link between comprehending prevailing market conditions and devising strategies to maximize parameters, such as revenues, profits and return on investment in order to gain market share. The significance of market research can be largely understood through the range of factors that impact businesses. These can comprise market size (current and projected), geographic market reach and demand and supply scenario, to name a few. Our ongoing quest to collect up to date and accurate information by conducting online surveys, personal interviews, taking the opinions of senior level executives will enable us to serve our clients better in every possible aspect.



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