
Description: 3D printing is finding its way into just about every aspect of jewelry manufacturing, due to the widespread adoption of CAD software among jewelry designers. Annual revenues from 3D-printed hardware, materials, services and software used in the jewelry industry is expected to top $900 Million in 2026. Even in traditional jewelry manufacturing with vulcanized silicon molds, the initial model is often 3D printed using high-temperature resistant photopolymer resins. Jewelry prototyping for size and shape verification is complemented by the use of directly 3D printed wax and resin patterns for direct casting and serial manufacturing. The next evolutionary step is direct metal 3D printing.

This new 150-page report identifies the opportunities in this sector and is based on SmarTech Publishing's ongoing coverage of the jewelry and precious metals markets. This report provides detailed ten-year jewelry manufacturing forecasts for additive manufacturing in volume (Kg) and value ($US) terms.

Forecasts cover:
- Hardware and technologies (both photopolymerization and metal powder bed fusion based)
- Materials (both photopolymers and precious metal powders)
- Jewelry-specific 3D printing service bureaus
- Jewelry-specific CAD software

Other features of this report include:
- Detailed profiles of the leading providers of technologies and materials for jewelry AM. These profiles include Stratasys (Solidscape), 3D Systems, EnvisionTEC, EOS, Concept Laser, Sisma, ReaLizer as well as precious metal powder providers such as Cooksongold, Legor, Progold and Hildebrand.
- Analysis of future adoption patterns of 3D printing technology for current to medium and long-term jewelry applications.
- Assessment of pricing schemes for all currently available jewelry 3D printing technologies, systems and materials. Today those technologies are evolving with the introduction of low-cost systems (sub $5,000) and high productivity (continuous DLP) systems, opening up the door to a new phase of growth and more widespread adoption for serial production of more complex and customized products.

This study pinpoints the opportunities for stakeholders jewelry additive manufacturing – from manufacturers of AM systems with a specific competency for castable materials, to suppliers of gold, platinum, silver and other precious metal alloy metal powders optimized for AM systems, to adopters of AM focusing on the many applications for the jewelry sector.

Contents:
Chapter One: Trailing Twelve Month Jewelry 3D Printing Market Activity and Trends
1.1 Trends in Digital Jewelry and Global Penetration of Digital Processes
1.1.1 3D Printing Already Established in the Jewelry Manufacturing Process Workflow
1.1.2 3D Printed Precious Metals Rising
1.1.3 Development of Custom Retail Platforms in 3D Printed Jewelry
1.1.4 Primary Evolutionary Path in 3D Printing Technology Supporting Jewelry Manufacturing
1.1.5 User Profile Evolution in Jewelry 3D Printing
1.2 Hardware Evolution in Key 3D Printing Technologies Set to Disrupt Jewelry Market
1.2.1 Low Cost Photopolymerization Technologies Provide Entry Point for Improving Digital Workflow in the Jewelry Design and Manufacturing
1.2.2 High Speed Photopolymerization Technologies Could Tip the Competitive Advantage to Additive CAD/CAM
1.3 Jewelry 3D Printing Software Trends
1.3.1 Application-Specific Print Software Development for Jewelry
1.4 Summary of Latest Outlook and Market Forecasts for Jewelry 3D Printing Opportunities
1.5 Methodology of This Report
1.6 Report Outline
Chapter Two: the Comprehensive Jewelry 3D Printing Hardware, Software and Materials Guide

2.1 Primary Considerations for Hardware Development for Jewelry 3D Printing
2.1.1 Advantages of Using Polymer and Wax 3D printing Vs Traditional Jewelry Manufacturing Processes
2.1.2 The Lost Wax Casting Process with 3D Printing
2.1.3 Materials for Direct Casting: Wax Vs UV Curable Resin
2.2 3D Printing Technologies for Lost Wax Casting Applications
2.2.1 Material Jetting Technologies for Lost Wax Casting
2.2.2 Leading Systems by Product Class and New Releases
2.2.3 Comparing SCP and MultiJet Printing Product Lines for Jewelry Applications
2.2.4 Analysis of Available Jewelry Printing Materials (Jettable Castable Resins and Wax)
2.2.5 Analysis of Material Jetting Hardware Metrics
2.2.6 VAT Photopolymerization (Stereolithography) Technologies for Lost Wax Casting (SLA, DLP)
2.2.7 DLP versus SLA Photopolymerization Hardware for Jewelry Applications
2.2.8 Industrial Versus Low Cost SLA Photopolymerization Hardware for Jewelry Applications
2.2.9 Professional Versus Low Cost DLP Photopolymerization Hardware for Jewelry Applications
2.2.10 Leading Vat Photopolymerization Systems by Product Class and New Releases
2.2.11 Analysis of Available Castable Jewelry Printing Materials (UV Sensitive Resins) for Vat Photopolymerization
2.2.12 Analysis of Available Modeling and Jewelry Printing Materials (UV Sensitive Resins) for Vat Photopolymerization
2.2.13 High Speed Photopolymerization and its Impact on Jewelry 3D Printing Applications
2.2.14 Analysis of Vat Photopolymerization Hardware Metrics
2.3 3D Printing Technologies for Direct Jewelry Fabrication
2.3.1 Direct Jewelry Fabrication via Precious Metal Powders and Powder Bed Fusion
2.3.2 Precious Metal Powder Bed Fusion Technologies for Direct Jewelry Fabrication
2.3.3 Support Generation
2.3.4 Powder Requirements
2.3.5 Analysis of Metal Powder Bed Fusion Hardware Market Metrics
2.3.6 Types of precious metals that can be 3D printed today
2.3.7a Gold and Gold Alloys
2.3.7b Silver
2.3.7c Platinum (and Palladium)
2.4 Current and Future Suppliers of Precious Metals for 3D Printing
2.4.1 Emergence of Supply Chain Partnerships
2.5 Vat Photopolymerization Technologies for Direct Jewelry 3D Printing
2.6 Barriers to Adoption of Directly Fabricated Jewelry
2.6.1 Optimization of Machines for Jewelry
2.6.2 Cost Issues
2.7 Opportunities to Add Value to Existing Jewelry Value Chain

Chapter Three: the Market for 3D Printed Jewelry – Applications and Service Providers
3.1 The Jewelry Industry as a Market for 3D Printing
3.1.1 Jewelry's Current Place in the 3D Printing Sector
3.1.2 Bigger Brands, More 3D Printing?
3.1.3 “Fast Fashion.” Jewelry and 3D Printing
3.1.4 The Future of 3D Printing in Jewelry
3.2 Current Applications of 3D Printing in Jewelry Production
3.2.1 Rings, Necklaces and Earrings
3.2.2 Watches and Timepiece Components
3.2.3 Fashion Accessories and Other Consumer Products
3.2.4 Wearable Technology
3.3 Current Polymer and Wax Jewelry 3D Printing Applications
3.3.1 3D Printed Wax and Polymer Molds for Investment Castings Production of Rings, Bracelets, Bands, Pendants, Colliers, Pins, Watches and More
3.3.2 3D Printed Jewelry Models for Vulcanized Rubber Molds
3.4 Directly 3D Printed Metal Jewelry Applications and Challenges
3.4.1 Elements of Success
3.4.2 Intricate Geometries
3.4.3 3D Printed Metal Fabric and Interconnected Parts
3.4.4 3D Printing “Impossible” Precious Metal Alloys and Colors
3.4.5 Metal Jewelry Prototyping
3.4.6 The One Stop Jewelry Production Cycle
3.4.7 Challenges of 3D Printing with Precious Metal and Possible Solutions
3.5 3D Printing Services and Online Apps As a Driver for Mass Customization of Jewelry
3.5.1 Application Agnostic 3D Printing Services Offering Jewelry Manufacturing
3.5.2 Major Traditional Jewelry Manufacturers Adopting of 3D Printing
3.5.3 Jewelry 3D Printing Designers and Innovators
3.5.4 Jewelry 3D Printing Online Model Marketplaces and Mass Customization Apps

Chapter Four: Analysis of the Jewelry 3D Printing Competitive Landscape
4.1 Analysis of Photopolymer and Wax (Indirect) Jewelry 3D Printing Hardware Market
4.1.1 Stratasys
4.1.2 EnvisionTEC
4.1.3 3D Systems
4.1.4 DWS
4.1.5 Prodways
4.1.6 Asiga
4.1.7 Formlabs
4.1.8 Autodesk
4.1.9 Other Players
4.2 Analysis of Metal and Ceramics (Direct) Jewelry 3D Printing Hardware Market
4.2.1 EOS
4.2.2 Realizer
4.2.3 Sisma
4.2.4 Concept Laser
4.2.5 3D Ceram
4.3 Analysis of the Jewelry CAD Software Market and Support for 3D Printing
4.3.1 Progold (Realizer)
4.3.2 Hilderbrand (Concept Laser)
4.3.3 Legor
4.3.4 Cooksongold (EOS)
4.4 The Jewelry 3D Printing Software Market
4.4.1 Rhino
4.4.2 Autodesk
4.4.3 Pixologic (Zbrush)
4.4.4 Gemvision (CounterSketch)
4.4.5 Gravotech Group (3Design)
4.4.5 Materialise (Magics)

Chapter Five: Ten Year Jewelry 3D Printing Market Forecasts - Hardware, Materials, Software, and Services
5.1 Discussion of Methodology
5.2 Ten-Year Forecasts of Key Jewelry 3D Printing Market Opportunities and Metrics
5.3 Ten Year Forecasts of Professional Jewelry 3D Printing Hardware Shipments and Installations
5.4 Ten Year Forecasts of Jewelry Low Cost 3D Printing Hardware Shipments and Installations
5.5 Ten-Year Forecasts of 3D Printing Materials For Jewelry Applications
5.5.1 Forecasts of Metal Powder Materials Opportunities in Jewelry
5.6 Ten Year Forecasts of Dental 3D Printing Services and Software
5.6.1 Jewelry 3D Printing Software Opportunities

About the Analyst
Acronyms and Abbreviations Used In this Report

List of Exhibits
Exhibit 1-1: Precious Metal AM (PMAM) Application Matrix
Exhibit 1-2: Direct Precious Metal 3D Printing Market Opportunity Summary
Exhibit 1-3: Future Evolution of 3D Print Technologies in Jewelry
Exhibit 1-4: Evolution of Value of 3D Printing Technology in Jewelry Markets
Exhibit 1-5: High Speed Photopolymerization Printer Developments
Exhibit 1-6: Application Specific Software Workflow for 3D Printing
Exhibit 2-1: Limits of Traditional Manufacturing Processes Vs Benefits of 3D Printing Processes in Jewelry Manufacturing
Exhibit 2-2: Steps for 3D Printing Resin and Wax Patterns for Direct Casting
Exhibit 2-3: Traditional Jewelry Investment Casting Process Chain
Exhibit 2-4: 3D Printing Investment Casting Process Chain
Exhibit 2-5: relevant system releases in the last 12 months related to material jetting for jewelry applications.
Exhibit 2-6: relevant system releases in the last 12 months related to material jetting for jewelry applications.
Exhibit 2-7: Currently Available Material Jetting Jewelry Materials
Exhibit 2-8: Average Selling Price of Material Jetting Jewelry Printers, by Classification, 2017
Exhibit 2-9: Jewelry Material Jetting Printer 2015 Market Share, by Unit Sales, All System Classifications
Exhibit 2-10: DLP Based Vat Photopolymerization Processes Market Overview
Exhibit 2-11: Leading Vat Photopolymerization (SLA, DLP) 3D Printers for Jewelry Applications
Exhibit 2-12: Leading Vat Photopolymerization (SLA, DLP) 3D Printers for Jewelry Applications
Exhibit 2-13: Castable Photopolymer Resin Material Products for Jewelry
Exhibit 2-14: Modeling Photopolymer Resin Material Products for Jewelry
Exhibit 2-15: High Speed Photopolymerization Printer Developments
Exhibit 2-16: Average Selling Price of All Vat Photopolymerization Jewelry 3D Printers, by Classification, 2015
Exhibit 2-17: Production and Professional Jewelry Vat Photopolymerization 3D Printers 2016 Market Share, by Unit Sales, All System Classifications
Exhibit 2-18: Low Cost Jewelry Photopolymerization 3D Printers 2016 Market Share, by Unit Sales, All System Classifications
Exhibit 2-19: Pros and Cons of Directly Manufacturing Jewelry by Powder Bed Fusion Technology
Exhibit 2-20: Future Evolution of 3D Print Technologies in Jewelry
Exhibit 2-21: Leading Systems for Precious Metal Additive Manufacturing Currently on the Market
Exhibit 2-22: Metal Powder Bed Fusion Dental Market Share, Unit Sales, 2015
Exhibit 2-23: Leading Commercially Available Precious Metal Powders for Direct Jewelry AM
Exhibit 2-24: Photopolymerization Materials for AM Production of End Use Jewelry
Exhibit 5-1: Total Projected Jewelry 3D Printing Market Revenues (in $M), by Category, 2015-2026
Exhibit 5-2: Overall YoY Growth Rate for Jewelry 3D Printing Market Revenues 2016-2026
Exhibit 5-3: YoY Growth Rate for Jewelry 3D Printing Market Revenues by segment 2016-2026
Exhibit 5-4: Total Projected Jewelry 3D Printers Sold Annually, by Print Technology, 2016-2026
Exhibit 5-5: Total Projected Jewelry 3D Printer Hardware Revenue, by Print Technology, 2015-2025
Exhibit 5-6: Total Projected Average Professional Jewelry 3D Printer Selling Price, 2015-2026
Exhibit 5-7: Total Projected Low Cost 3D Printer Unit Demand, 2015-2026
Exhibit 5-8: Total Projected Low Cost 3D Printer Unit Sales in $M, 2015-2026
Exhibit 5-9: Total Projected Low Cost 3D Printer for Jewelry Sales Vs Professional Jewelry 3D Printer Sales in $M, 2015-2026
Exhibit 5-10: Total Projected Jewelry 3D Printing Material Revenue, by Material Category, 2015-2026
Exhibit 5-11: Forecasted YoY Growth Rates for Jewelry 3D Printing Sales 2015-2026
Exhibit 5-12: Total Projected Jewelry 3D Printing Material Shipments, by Material Category, 2015-2026
Exhibit 5-13: Photopolymer Material Revenue by Subgroup, 2015-2025
Exhibit 5-14: Metal Powder Material Demand by Subgroup (Kg), 2015-2026
Exhibit 5-15a: Metal Powder Material Sales by Subgroup ($USM), 2015-2026
Exhibit 5-15b: Metal Powder Material Sales by Subgroup ($USM), 2015-2026
Exhibit 5-16: Precious Metal Powder Material Sales by Subgroup ($USM), 2015-2026
Exhibit 5-17: Total Market Opportunity Jewlery3D Printing Services, 2015-2026
Exhibit 5-18: Total Jewelry 3D Printer Software Revenues, 2015-2026

Ordering:
Order Online - [http://www.researchandmarkets.com/reports/4085861/](http://www.researchandmarkets.com/reports/4085861/)

Order by Fax - using the form below

Order by Post - print the order form below and send to

Research and Markets,
Guinness Centre,
Taylors Lane,
Dublin 8,
Ireland.
Fax Order Form
To place an order via fax simply print this form, fill in the information below and fax the completed form to 646-607-1907 (from USA) or +353-1-481-1716 (from Rest of World). If you have any questions please visit
http://www.researchandmarkets.com/contact/

Order Information
Please verify that the product information is correct and select the format(s) you require.

Product Name: 3D Printing Opportunities in the Jewelry Industry 2017: An Opportunity Analysis and Ten-Year Forecast
Web Address: http://www.researchandmarkets.com/reports/4085861/
Office Code: SC2G5CZL

Product Formats
Please select the product formats and quantity you require:

<table>
<thead>
<tr>
<th>Format</th>
<th>Single User</th>
<th>1 - 5 Users</th>
<th>Enterprisewide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic (PDF)</td>
<td>USD 4995</td>
<td>USD 5995</td>
<td>USD 6995</td>
</tr>
</tbody>
</table>

* The price quoted above is only valid for 30 days. Please submit your order within that time frame to avail of this price as all prices are subject to change.

Contact Information
Please enter all the information below in BLOCK CAPITALS

Title: Mr [ ] Mrs [ ] Dr [ ] Miss [ ] Ms [ ] Prof [ ]
First Name: ___________________________ Last Name: ___________________________
Email Address: * ___________________________
Job Title: ___________________________
Organisation: _________________________
Address: _____________________________
City: ________________________________
Postal / Zip Code: _____________________
Country: _____________________________
Phone Number: _________________________
Fax Number: __________________________

* Please refrain from using free email accounts when ordering (e.g. Yahoo, Hotmail, AOL)
Payment Information

Please indicate the payment method you would like to use by selecting the appropriate box.

☐ Pay by credit card: You will receive an email with a link to a secure webpage to enter your credit card details.

☐ Pay by check: Please post the check, accompanied by this form, to:
Research and Markets,
Guinness Center,
Taylors Lane,
Dublin 8,
Ireland.

☐ Pay by wire transfer: Please transfer funds to:
Account number 833 130 83
Sort code 98-53-30
Swift code ULSBIE2D
IBAN number IE78ULSB98533083313083
Bank Address Ulster Bank,
27-35 Main Street,
Blackrock,
Co. Dublin,
Ireland.

If you have a Marketing Code please enter it below:

Marketing Code: ________________________________

Please note that by ordering from Research and Markets you are agreeing to our Terms and Conditions at http://www.researchandmarkets.com/info/terms.asp