

3D Printing and Additive Manufacturing

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Scope and Importance:

The 3D printing market was esteemed at USD 10.58 billion out of 2018, and is relied upon to arrive at an estimation of USD 49.01 billion by 2024, at a CAGR of 29.48% over the forecast period 2019-2024. Toward the finish of 2018, America Makes declared it was granting USD 1.6 million to a joint undertaking between Arizona State University and the ASTM International Additive Manufacturing Center of Excellence. In the prior months of 2019, the project aims to advance post-processing methods for SLM parts.

With technological advancements and product innovations, use of 3D printing technology has found various application in a wide variety of areas, such as jet engines, advanced prosthetics, and even living tissue (with a potential to disrupt the entire manufacturing industry).

- The industry is being constantly driven by technological developments, which guarantee higher adaptability and empower faster design. Further, manufacturers have realized the advantages that 3D printing offers, such as optimizing material, labor, and transportation costs. Manufacturing units have had the option to eliminate material wastage using 3D printing.
- Governments over the world have just begun putting resources into R&D on 3D printing, which has positively affected on technology propagation and adoption. For example, the Dutch government put an extra USD 150 million in 3D printing-related research and development.
- However, the market remains constrained by high costs of equipment needed to deploy 3D printing on an industrial scale. The absence of a worldwide principles body directing producers likewise confines the market development.

Source of revenue and analysis of the 3D bio printing market:

Bio printing materials, 3D bio printers, Services and ancillary equipment

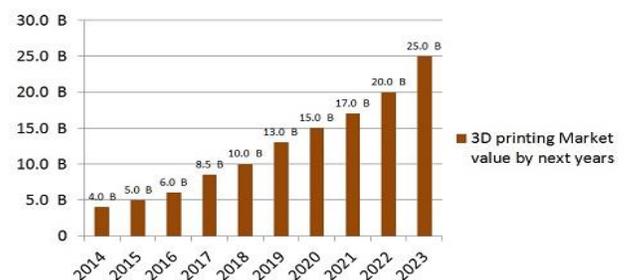
With the classification into metals, polymers, ceramic, and bio-ink, the bio printing materials segment accounted for the major shares of the 3D bio printing market. The polymers are broadly utilized in bio printing material that involves both common and synthetic materials. Owing to the favourability of the natural polymers, they are preferred for engineering tissues and organs. Regular polymers involve collagen, chitin, chitosan, hyaluronic corrosive, and chondroitin sulfate. The broad utilization of polymers in bio printing materials will add to the development of the market throughout the following four years.

Market Growth of 3D Printing in the last and upcoming ten years:

3D printing materials have noteworthy development in Middle East locales. Different 3D printing assembling organizations have seen setting-up in the Middle East locales during the most recent couple of years. It's demonstrating that the pattern is probably going to proceed throughout the following 10 years with the accessibility of minimal effort crude materials alongside expanding assembling yield in these areas.

Middle East 3D Printing Materials market value is anticipated to expand at a CAGR of 16.7% during the forecast period and along with that the Middle East 3D printing materials market volume is expected to register a CAGR of 11.2% during the forecast period.

3D Printing Market Value by next 10 years:



Industries Associated with 3D Printing**USA**

Stratasys – Minneapolis, Minnesota, USA

Autodesk – San Rafael, California, USA

Hyrel 3D – Norcross, Georgia, USA

M3D – Fulton, Maryland, USA

Europe

3D Filaprint, UK

3D Gbire, UK

Addition Design, UK

Am 3D, UK

SLM Solutions, Germany

3D Hubs, Germany

EOS e-Manufacturing, Germany

Leap Frog 3D Printers, Netherlands

3D Print Pulse, Netherlands

Middle East

Advanced Manufacturing Services, Australia

3D Systems, Australia

IRIS 3D Solutions, Dubai

The 3D Shape, Dubai

3D PrintDXB, Dubai

3D Printing Industry, India

3D Print.com, India

Manufacture 3D, India

Global universities:Harvard's School of Engineering and Applied Sciences,
USA

Princeton University, USA

Cornell University, USA

University of Toronto, Canada

University of Lethbridge, Canada

University of Sheffield, UK

University of Nottingham, UK

University of Exeter, UK

University of Melbourne, Australia

University of Sydney, Australia

University of Auckland, New Zealand

University of Victoria, New Zealand

Federal University of Santa Catarina, Brazil

University of Nicosia, Germany

Nanyang Technological University, Singapore

National University, Singapore

University of BITS Pilani, Dubai

University of Indian Institute of Technology, India

List of Software used in 3D Printing:

- Cura
- CraftWare
- 123DCatch
- 3DSlash
- TinkerCAD
- 3DTin
- Sculptris
- ViewSTL
- NetfabbBasic
- Repetier
- FreeCAD
- SketchUp
- 3D-ToolFreeViewer
- Meshfix