Printing is a process of producing copies of text and pictures. Modern technology is radically changing the way publications are printed, inventoried, and distributed. There are a wide variety of technologies that are used to print stuff. The main industrial printing processes are: Offset Lithography, Flexography, Digital Printing (Inkjet & Xerography), Gravure, Screen Printing.

3D printing which is also referred as additive printing technology that enables manufacturers to develop objects using a digital file and variety of printing materials. Global market for 3D printing material include polymers, metals and ceramics. In addition, 3D printing offers a wide array of applications in various industries, namely consumer products, industrial products, defense & aerospace, automotive, healthcare, education & research and others.

In India, the market for printing technology is at its nascent stage; however offers huge growth opportunities in the coming years. Digital printing is now taking much more share, particularly in graphics (i.e. non-packaging applications). Digital's share of the whole market doubles in constant value terms from 9.5% to 19.7% and 3D printing market is estimated to garner $8.6 billion in coming years.

This handbook is designed for use by everyone engaged in the printing section and students who are pursuing their career in printing technology. It provides all information on modern printing methods, techniques, testing's for printing, application of different printing and machinery used for printing.


This book will be a milestone for its readers who are new to this sector, will also find useful for professionals, entrepreneurs, those studying and researching in this important area.
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Benefits of 3D Printing in Healthcare

What Materials do 3D Printers Use?

1. Plastics
   (a) Nylon (Polyamide)
   Features
   (b) PLA Filament
   Features
   (c) ABS Filament
   Features
   (d) PVA Filament

2. Powders

3. Resins

4. Other Materials

How do the Different 3D Printing Technologies Work?

1. Fused Deposition Modeling (FDM)

How does FDM Work?

Materials for FDM
ABS (Acrylonitrile Butadiene Styrene)
ABSi (Acrylonitrile Butadiene Styrene – Biocompatible)
ABS-M30 (Acrylonitrile Butadiene Styrene)
ABS-M30i (Acrylonitrile Butadiene Styrene – Biocompatible)
PC (Polycarbonate)
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Ultem 9085

2. Stereolithography and Digital Light Processing (SLA & DLP)

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6. Metal Printing (Selective Laser Melting and Electron Beam Melting)

Electron Beam Melting

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Selective Laser Melting Applications

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Benefits of Polyjet

Realistic Finish

Greater Choices

Multiple Materials and Colors

Polyjet Materials
1. Digital Materials
2. Digital ABS
3. High Temperature

Wide Range of Applications

4. Transparent

3D Print Clear and Tinted Prototypes
3D Printing With Transparent Material
3D Print Translucent Shades and Patterns
Wide Range of Applications
5. Rigid Opaque
6. Polypropylene-like
3D Print Tough, Flexible Models
7. Bio-compatible
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Automatic Sheetfed Offset Printing Machine
Sheetfed Offset Machine
Mini Offset Printing Machine
Flexographic Printing Machine
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Poly Offset Printing Machines
Prepress Equipments
Flip Top Printing Down Frame Single/Double Sided Machine
Instant Start Metal Halide Plate Exposure
Plate Coating Whirler
Plate Curing Equipment
Damper Roller Washer
Vertical Process Camera
3M Plate Processor
Computer-to-Screen Exposure System
IGP Plate Processor
Screen CTP System
Inkjet CTP System (Computer to Plate Machine)
Rotogravure Printing Machine
4 Hi Tower (Automatic)
3 Colour + Stack Unit (Manual)
Finishing System
UV Inkjet Digital Printing System
Perfecting Production System
Tape Binder
High Light Color System
Color Printer
Digital Press
  Digital Color Press
  Manual Offset Printing Machine

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