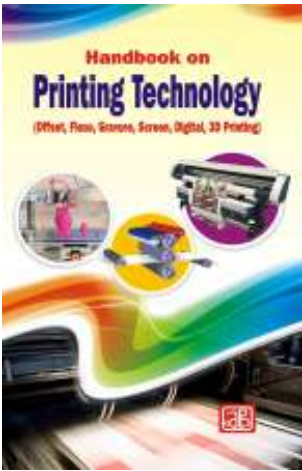


Handbook on Printing Technology (Offset, Flexo, Gravure, Screen, Digital, 3D Printing) 3rd Revised Edition



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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 provide all information on modern printing methods, techniques, testing's for printing, application of different printing and machinery used for printing.

The major content of the book are Principles of Contact (Impression), Principles of Noncontact Printing, Coated Grades and Commercial Printing, Tests for Gravure Printing, Tests for Letterpress Printing, Tests for Offset Printing, Screen Printing, Application of Screen Printing, Offset Lithography, Planography, Materials, Tools and Equipments, Sheetfed Offset Machines, Web Offset Machines, Colour and its Reproduction, Quality Control in Printing, Flexography, Rotogravure, Creative Frees Printer, Shaftless Spearheads

Expansion, Digital Printing, 3D Printing, 3D Printing Machinery and Photographs of Machinery with Suppliers Contact Details.

This book will be a mile stone 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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1. 3-D Printers are Becoming More Affordable
2. Quicker Turnaround Times for Prototyping
3. Quicker Product Launches
4. Competitive Advantage
5. Reduction in Manufacturing Errors
6. Complex Geometries
7. Mass Customization
8. Less Tooling
9. Fewer Costs
10. Environmentally Friendly

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

Features

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)

ABS-ESD7 (Acrylonitrile Butadiene Styrene – Static-Dissipative)

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Ultem 9085

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Realistic Finish

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Multiple Materials and Colors

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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

3D Print Medical Devices

3D Printing With Bio-compatible Material

8. Rubber-like

3D Print Flexible, Soft-touch Models

3D Printing With Rubber-like Material

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SLA 3D Printing Machine

3D Printing Machine

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Offset Printing with Numbering and Perforating Machine

Web Offset Printing Machine

Color Screen Printer

Flatbed Screen Printer

Automatic Sheetfed Offset Printing Machine

Sheetfed Offset Machine

Mini Offset Printing Machine

Flexographic Printing Machine

Label Master Flexographic Printing Press

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

About NIIR

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