Book Description

Additive Manufacturing is an engineering technology pertaining to the field of manufacturing, which minimizes the time of production significantly and results in greater rate of production; it is considered as one of the most efficient, economical, accurate and qualitative ways. One of the most important attributes of this technology is the features that it enables in the flexibility of the design, free of geometrical complexity, which overcomes most of the shortcomings in the existing conventional methods.

Key Features

- 1. This book gives an introduction and insights of all the important processes, applications and design challenges faced by industries today.
- 2. Designed with the best diagrams which depict the idea of technology at a glance
- 3. Encompasses a wide range of the basics of conventional manufacturing processes
- 4. Designed with numerous practical examples which can make people apprehend the concept easily
- Introduces the latest and eye-catching processes which are sought after in the present day industry (viz.., 3D-printing, LENS, Rapid Freeze Prototyping, Ultrasonic consolidation, Selective Laser Melting and direct metal Deposition)
- 6. Discusses the key applications of the additive manufacturing Technology in the fields of medicine, aeronautic and automotive
- 7. Explains direct and indirect tooling methods for castings in a cost-effective manner with reduced time for manufacturing tools
- 8. Gives greater insights of process parameter optimization with influencing factors, the most important requirement in current industry

Table of Contents

Preface	III
Acknowledgements	V
Detailed Contents	IX
Chapter 01 Introduction to Additive Manufacturing	01
Chapter 02 Software for Additive Manufacturing	23
Chapter 03 Classification of Additive Manufacturing (AM) Systems	33
Chapter 04 Selective Laser Sintering (SLS)	51
Chapter 05 Selective Laser Melting (SLM)	71
Chapter 06 Direct Metal Laser Sintering (DMLS)	79
Chapter 07 Fused Deposition Modeling (FDM)	83
Chapter 08 Laminated object Manufacturing (LOM)	99
Chapter 09 Concept Modellers	109
Chapter 10 Additive Manufacturing in Tooling	135
Chapter 11 Process Optimization	163
Chapter 12 Other Attractive AM Process	169
Chapter 13 Applications of Additive Manufacturing	191
Chapter 14 Advancements in Additive Manufacturing	199
References	203
Index	205

About Authors

Hari Prasad I completed his under- graduation from JNTU college of Engineering, Hyderabad (Autonomous) in Metallurgical Engineering, He got his M. Tech Degree from IIT Madras in Material Science and Metallurgical Engineering. He has been working as Assistant Professor in MVJ College of Engineering (Bangalore) From the Past 7 Years. The Author possesses not only the academic experience but also very good industrial experience. His areas of interests include welding Technology, Manufacturing Processes, Non-destructive Testing, Additive Manufacturing, Power Metallurgy, Composite Materials, Aircraft Materials, corrosion Engineering, Smart Materials, Nanotechnology and Heat Treatment of Metals

A.V. Suresh is currently working as Senior Professor in Mechanical Engineering Department at BMS Institute of Technology, Bangalore. Earlier, he worked as Dean Academics and Head of the Department of Industrial Engineering and Management at RV College of Engineering, Bangalore. He graduated from National Institute of Engineering, Mysore; completed his post-graduation from PSG college of Technology, Coimbatore; and doctorate from Mysore University. He Possesses 31 years of experience in teaching and research. His area of research interest is Design and Manufacturing.